

James E. Faulds

Curriculum Vita

Professional Summary

PERSONAL

Title: Research Professor (Full Professor level)
Business Address: Nevada Bureau of Mines and Geology
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EDUCATION

Ph.D. University of New Mexico (1989).
M.S. University of Arizona (1986).
B.S. University of Montana, highest honors (1981).

AREAS OF EXPERTISE

Structural Geology
Tectonics
Geothermal Systems – Structural Controls
Paleomagnetism
Geologic Mapping

PROFESSIONAL WORK EXPERIENCE

- A. Research Professor (Full Professor level), Nevada Bureau of Mines and Geology (August 1997-present)
1. Tertiary evolution of the northern Walker Lane: An evolving transform plate boundary: Detailed structural, stratigraphic, paleomagnetic, and geochronologic analyses to constrain slip along major right-lateral faults in western Nevada and northeast California; the Walker Lane currently accommodates ~20% of the North American-Pacific plate motion.
 2. Structural, stratigraphic, and geophysical analyses of geothermal fields in the Great Basin to determine structural-stratigraphic controls on individual fields and develop regional tectonic models for geothermal activity.
 3. Structural, stratigraphic, and geophysical analyses of geothermal fields in western Turkey to determine structural controls on individual fields and develop regional models for geothermal activity.
 4. Study of three-dimensional strain fields in extended terranes through analysis of major normal-fault systems, accommodation zones, and transfer zones, including implications for hydrocarbon exploration, mineralization, ground-water supplies, seismic hazards, and kinematic models of continental extension.
 5. Interrelations between magmatism and deformation.

6. Evolution of Tertiary basins, especially analysis of thick evaporite deposits and the societal implications of these deposits in terms of fresh ground-water supplies and mineral resources.
 7. Regional tectonic problems in the western Cordillera, including late Proterozoic rifting, Antler and Sonoma orogenies, Mesozoic magmatism and contraction, and Tertiary extension. Studies typically involve detailed mapping, structural analysis, high-precision $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology, examination of seismic reflection profiles, and/or paleomagnetic investigations.
 8. Paleomagnetic studies, primarily involving analysis of tectonic rotations and magneto-stratigraphy.
 9. Obtained NSF, STATEMAP, DOE, and EDMAP funds exceeding \$3,000,000.
- B. Assistant professor, University of Iowa (August 1992-July 1997).
1. Teaching duties included Structural Geology, Remote Sensing, Geotectonics, Paleomagnetism, Advanced Structural Geology, Structural Geology Seminar, and field courses. Received several merit raises for teaching excellence.
 2. Research focused on structural, paleomagnetic, and geochronologic analysis of Tertiary extension in the Basin and Range province, including the geometry and kinematic development of major accommodation zones, interrelations between magmatism and extension, and high-precision $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology aimed at delineating the timing of deformation. Principal Investigator for three NSF grants and two EDMAP awards totaling \$366,000.
 3. Paleomagnetic studies of the southern San Andreas Fault and Cretaceous and Quaternary midcontinental redbeds.
- C. Visiting assistant professor, University of Iowa (August 1991-July 1992).
1. Teaching duties included Structural Geology (lecture and lab), Geotectonics, Advanced Structural Geology, Seminar on Geologic Cycles, and Summer Field Camp in Park City, Utah.
 2. Research focused on Tertiary extension in the Basin and Range province, primarily detailed mapping and structural analysis of major transverse structures and $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology of the timing of deformation in major growth-fault basins.
- D. Post-doctoral Research Associate, University of Southern California (September 1990-July 1991).
Research focused on (a) strain analysis of highly deformed sedimentary and volcanic rocks, as well as their undeformed counterparts, and (b) interpretation of seismic reflection profiles from the Basin and Range province.
- E. Post-doctoral Research Associate, University of Nevada, Las Vegas (November 1989-Sept. 1990).
Research focused on the structural controls of Cenozoic volcanism in the Yucca Mountain region of southwestern Nevada and the implications for the proposed high-level nuclear waste repository. Also studied major volcanic centers in the Colorado River extensional corridor of southern Nevada and northwestern Arizona, which provided older, more highly dissected analogues for the volcanic centers in the Yucca Mt. region.
- F. Lecturer, University of New Mexico (August 1988-May 1989).
Teaching duties included lecturer for Introductory Geology and Geology of National Parks. Also continued conducting research for dissertation.
- G. Silver-Kelley Fellow and Research/Teaching Assistant, Univ. of New Mexico (Aug. 1984-Aug. 1989).
Research focused on the geometry and kinematic development of a major accommodation zone in the Basin and Range province, incorporating detailed mapping, structural analysis, paleomagnetic studies, and K-Ar geochronology. Principal Investigator for NSF grant for Ph.D. research. Teaching duties included structural geology lab.

- H. NSF Graduate Student Fellow, University of Arizona (August 1981-August 1984).
Research focused on the Tertiary structural evolution and stratigraphic framework of the transition zone in east-central Arizona, which separates the Basin and Range province from the Colorado Plateau, especially with respect to delineating the timing of structural inversion and regional drainage reversal. Work incorporated detailed geologic mapping, structural and petrographic analysis, and K-Ar geochronology.
- I. NAGT appointment to U.S. Geological Survey, Henry Mts., Utah (June 1981-August 1981).
Detailed geologic mapping of the Henry Mountains, primarily Tertiary stocks and laccoliths intruding Mesozoic strata.

COURSES TAUGHT

2000-2006 at University of Nevada; 1992-1997 at University of Iowa; 1988-1989 at University of New Mexico.

March 12-13, 2008 at the University of Orl  ans, France, student workshop: Topics covered--1. Tectonic Evolution of the Western Cordillera, North America; 2. Segmentation of Normal Fault Systems: Economic and Kinematic Implications; 3. The Walker Lane System: An Incipient Transform Fault along the Evolving Pacific-North American Plate Boundary.

May 12-13, 2008 at the University of Strasbourg, France, student workshop: Topics covered—1. Tectonic Evolution of the Western Cordillera, North America; 2. The Walker Lane System: An Incipient Transform Fault along the Evolving Pacific-North American Plate Boundary.

Spring 2006: Extensional and transtensional tectonics.

Summer 2000-2005: Geology Summer Field Course (Director of 6 week field camp, Geol-451).

Spring 2003: Extensional Tectonics

Spring 1997: Structural Geology (12:092); Structural Geology Seminar (12:296); Research Structural Geology (12:390).

Fall 1997: Introduction to Remote Sensing (12:110); Geotectonics (12:191).

Spring 1996: Structural Geology (12:092); Structural Geology Seminar (12:296); Directed Study (12:119); Research Structural Geology (12:390).

Fall 1995: Introduction to Remote Sensing (12:110); lecture and lab. Directed Study (12:119); Research Structural Geology (12:390).

Spring 1995: Structural Geology (12:092); Advanced Structural Geology (12:293); Honors Thesis (12:010); Research Structural Geology (12:390).

Fall 1994: Directed Study (12:119); Honors Thesis (12:010).

Spring 1994: Structural Geology (12:092); Paleomagnetism (12:288); Research, Structural Geology (12:390).

Fall 1993: Introduction to Remote Sensing (12:110), lecture and lab.

Spring 1993: Structural Geology (12:092); Geotectonics (12:191); Directed Study (12:119).

Fall 1992: Introduction to Remote Sensing (12:110), lecture and lab; Directed Study (12:119).

Summer 1992: Summer Field Camp (12:113).

Spring 1992: Structural Geology (12:092), lecture and lab; Spring Field Trip (12:016 and 12:116); Research Structural Geology (12:390); Geologic Cycles Seminar.

Fall 1991: Geotectonics (12:191); Structural Geology Seminar (12:296).

Spring 1989: Geology of National Parks.

Fall 1988: Introductory Geology.

GRADUATE THESES/DISSERTATIONS SUPERVISED

- **Rhodes, G., 2010, Structural control on the Empire-San Emidio Desert geothermal system, northwestern Nevada [M.S. thesis], in progress.**
- Vice, G.S., 2008, Structural controls of the Astor-Pass-Terraced Hills geothermal system in a region of strain transfer in the western Great Basin, northwestern Nevada [M.S. thesis]: University of Nevada, Reno, 125 p.
- Delwiche, B.M., 2007, Oligocene paleotopography and structural evolution of the Pah Rah Range, western Nevada: Implications for constraining slip on the right-lateral Warm Springs Valley fault in the northern Walker Lane [M.S. thesis]: University of Nevada, Reno, 126 p.
- Drakos, P.S., 2007, Tertiary stratigraphy and structure of the southern Lake Range, northwest Nevada: Assessment of kinematic links between strike-slip and normal faults in the northern Walker Lane [M.S. thesis]: University of Nevada, Reno, 165 p.
- Sturmer, D.M., 2007, Geometry and kinematics of the Olinghouse fault zone: Role of left-lateral faulting in the right-lateral Walker Lane, western Nevada [M.S. thesis]: University of Nevada, Reno, 117 p.
- Murphy, R.T., 2004, Interactions between Tertiary magmatism and extension in the Colorado River extensional corridor, Union Pass area, northwestern Arizona [M.S. thesis]: University of Nevada, Reno, 130 p.
- Hinz, N.H., 2004, Tertiary volcanic stratigraphy of the Diamond and Fort Sage Mountains, northeastern California and western Nevada – Implications for development of the northern Walker Lane [M.S. thesis]: University of Nevada, Reno, 110 p.
- Schwartz, Ken, 2001, Evolution of the middle to late Miocene Chalk Hills basin in the Basin and Range-Sierra Nevada transition, Virginia Range, western Nevada [M.S. thesis]: University of Nevada, Reno, 160 p.
- Wallace, Mark, 1999, Cenozoic stratigraphic and structural framework of the southern Grand Wash trough, northwestern Arizona: Paleogeographic implications [M.S. thesis]: University of Iowa, 119 p.
- Ruppert, Ryan, 1999, Structural and stratigraphic framework of the northern Newberry Mountains, southern Nevada: Assessing the interplay between magmatism and extension [M.S. thesis]: University of Iowa, 105 p.
- Feuerbach, Daniel, 1998, Relationships between mid-Miocene volcanism and deformation of the lithosphere in the northern Colorado River extensional corridor [Ph.D. dissertation]: University of Iowa, Iowa City, 221 p. (co-advisor with Dr. Mark Reagan)
- Price, Linda, 1997, Geometry and evolution of a major segment of the Grand Wash fault zone, southern White Hills, northwestern Arizona [M.S. thesis]: University of Iowa, Iowa City, 147 p.
- Olson, Eric, 1996, Geometry and kinematics of an extensional anticline, Highland Spring Range, Nevada [M.S. thesis]: University of Iowa, 77 p.

****Work in progress, showing probable year of completion.**

UNIVERSITY SERVICE

- 2010 **NBMG Chair of Search Committee:** Chairing committee for two new faculty positions.
- 2009 **College of Science By-Laws Committee:** Served on committee reviewing and revising College by-laws (January-May, 2009).
- 2007-2009 **NBMG Cartographic Committee**— Member of committee overseeing operations in cartographic unit of Nevada Bureau of Mines and Geology.
- 2001-2005 **Director, Summer Geology Field Camp (Geol-451):** Served as Director and Instructor of 6-week summer field camp, which was outside my assigned duties at Nevada Bureau of Mines and Geology (NBMG)—in five years of directing field camp, I consistently received excellent evaluations and put the course back on sound financial footing and re-established its national reputation.
- 2005 **NBMG Personnel Committee (UNR)**—Chair of NBMG personnel committee; distributed and tallied Director evaluations, reviewed Director's recommendations on evaluations of faculty and staff, and made recommendations to Director (January).
- 2004 **Earthscope Proposal:** Organized major proposal entitled "Understanding Incipient Transform Evolution and Dynamics: A Multi-Disciplinary Four-Dimensional Study of the Walker Lane,

- Western Great Basin” that included PI’s from NBMG, DGSE, Nevada Seismological Lab, and Oregon State University to study deep crustal and mantle beneath the Great Basin.
- 2004 **Search Committee Member:** Served on committee to hire Chief Cartographer for NBMG.
- 2003 **NBMG Personnel Committee Member**
- 2003 **Academic Council for College of Science:** Served as NBMG representative on Academic Council for new College of Science. Purpose of council was to foster collaboration between departments.
- 2003-2006 **Exxon-Mobil recruiter:** Have hosted recruiter from Exxon-Mobil Corporation each year since organizing first visit to UNR in 2003, involving arranging meeting schedule with faculty and others.
- 2003 **Exxon-Mobil recruiter:** Organized first visit of recruiter from Exxon-Mobil to UNR by giving talk at their headquarters in Houston in February 2003. Talk advertised attributes of DGSE and ongoing research at UNR.
- 2002 **Center for Structural Excellence Proposal to Chevron-Texaco:** Organized major proposal to establish UNR Geosciences group as a major Center of Structural Excellence for training future and present geoscientists at Chevron-Texaco Corporation; involved major effort through the year, including several workshops, multiple written proposals, and preparation of a guidebook highlighting UNR’s geoscience group. One center was established by Chevron-Texaco in the U.S.A. and thanks to my efforts, UNR came in second in this competition. Considering that UNR had no previous affiliation with Chevron-Texaco, this was a major accomplishment.
- 2001 **Search Committee Member:** Served on Search Committee for Introductory Geology position in Department of Geological Sciences.
- 2000 **NBMG Personnel Committee Chair:** Served as Chair for NBMG Personnel Committee.
- 1999 **Search Committee Chair:** Served as search committee chair for Research Geophysicist faculty position with the Nevada Bureau of Mines and Geology.
- 1998 **Renovation Plans:** Developed renovation plans for research space for NBMG faculty staff.
- 1998 **Paleomagnetic Laboratory:** Arranged for purchase of my Paleomagnetic Laboratory at the University of Iowa and its transfer to UNR; handled all negotiations with Iowa and returned to Iowa to prepare equipment for shipping. Set up equipment in existing Paleomagnetic Laboratory at UNR.
- 1998 **NBMG Collegiality Committee Member:** Helped develop ideas to improve collegiality between NBMG and Geological Sciences (Summer-Fall).
- 1998 **University of Nevada Retreat:** Attended meeting and field trip, Las Vegas (February).
- 1997-1999 **NBMG Map Reviews:** Review geologic maps for publication (~2-3/year).
- 1995-1996 **Co-editor** of Geology Department Newsletter, University of Iowa.
- 1994-1996 **Geology Alumni Advisory Board,** University of Iowa.
- 1993-1994 Set up **Paleomagnetic Laboratory,** University of Iowa.
- 1992 Set up **mineral separation laboratory** for $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology, University of Iowa.

OTHER PROFESSIONAL ACTIVITIES

- 2009 **Geothermal Resources Council Field Trip:** Structural Controls of Geothermal Systems in the Western Great Basin, Led 2-day field trip visiting several geothermal fields in western Nevada. Field trip filled to capacity and was very well received (October 3-4).
- 2009 **Paper Review for Geothermal Resources Council** Annual Meeting (May 19, 2009).
- 2009 **Workshop on Geodesy and Active Faults:** Attended workshop on geodesy and active faults in the Reno, Nevada area and presented talk on Walker Lane tectonics (April 21-22, 2009).
- 2009 **Abstract Review for Geothermal Resources Council** Annual Meeting (March 16, 2009).
- 2009 **Nevada Petroleum Society Scholarship Chair:** Served as chair of committee reviewing student research proposals (February-March, 2009).
- 2008 **Editing for Engine (European Geothermal consortium)** — English editing of ENGINE Best Practice Handbook, Chapter 1 – Site Investigation and other small documents.
- 2008 **Geological Society of America (GSA) field trip**—Led three-day field to the abrupt boundary between the Colorado Plateau and Basin and Range province at the mouth of the Grand Canyon (March 22-24).

- 2007 **Earthscope Margins/Geoswath Workshop, Monterey, California:** Invited participant for planning Earthscope activities in the western U.S.; delivered keynote address on the Walker Lane at this workshop (March).
- 2007 **Desert Symposium, California State University Desert Studies Consortium--**Co-Leader of field trip for symposium on the lower Colorado River trough; also presented keynote address at this meeting (April 20-22).
- 2007 **Chaired GSA symposium**—Organized and chaired symposium entitled "The evolution of transform faulting and propagation of extension and volcanism: The west-northwest margin of the Basin and Range province" at the GSA Cordilleran Section Meeting, Bellingham, Washington (session was very well attended with at least 200 participants). (May 4)
- 2007 **Geothermal Resources Council (GRC)**—Leader of pre-meeting field trip to the Brady's and Desert Peak geothermal fields in northwestern Nevada; very well attended field trip with ~40 participants (Sept 30).
- 2002-2007 **Nevada Petroleum Society (NPS)**—Co-chaired NPS scholarship committee, reading ~15 applications from graduate students and making recommendations for funding (each March).
- 2006 **Geothermal Resources Council (GRC) field trip:** For annual GRC meeting, co-leader of field trip evaluating ancient geothermal systems in the Searchlight mineral district of southern Nevada.
- 2006 **Co-Chair of NSF-Funded Earthscope Workshop, Reno:** Co-chair of Earthscope workshop on the Walker Lane-Eastern California Shear Zone (one of the chosen areas at the GeoFrame Workshop), with the purpose of organizing Earthscope proposals to study strike-slip faults in the western Great Basin, which currently accommodate ~20% of the plate motion and may eventually accommodate all of the plate motion.
- 2006 **Earthscope GeoFrame Workshop, St. Louis, Missouri:** Invited participant in Earthscope GeoFrame Workshop, which involved ~70 geoscientists charged with selecting focus areas within the U.S. for the NSF funded Earthscope Program.
- 2005 **Geological Society of America**—Led pre-meeting field trip for Annual Meeting in Salt Lake City entitled *Transect Across the Northern Walker Lane, Northwest Nevada and Northeast California: An Incipient Transform Fault Along the Pacific – North American Plate Boundary* (October 13-15).
- 2005 **Geological Society of America**—Organized and chaired symposium entitled *Controversies, conundrums, and innovative approaches in extensional tectonics: A tribute to Ernie Anderson* for the Annual Meeting in Salt Lake City; this session was very well received and attended by several hundred (October 16).
- 2005 **Geothermal Resources Council (GRC)**—Led pre-meeting field trip to the Desert Peak-Brady's geothermal fields (Sept 25) for the GRC annual meeting in Reno; also organized and chaired session on *fault and fracture controls of geothermal systems* for this meeting (Sept 27).
- 2005 **Geological Society of America, Penrose Conference**—Gave keynote address at Penrose Conference on the *Kinematics and geodynamics of intraplate dextral shear in eastern California and western Nevada* (April 21-26).
- 2005 **Seismological Society of America**—Co-chaired and helped organize session on Quaternary deformation in the Walker Lane, central Nevada seismic belt, and eastern Sierra Nevada margin (April 28).
- 2005 **Geological Society of America (Cordilleran Meeting)**—Co-leader of field trip on *Miocene volcano-plutonic systems, southern Nevada: A window into upper crustal magmatic processes* (May 1-3).
- 2005 **Geological Society of Nevada Symposium**—Gave two invited talks at the 2005 Symposium (May 15-17).
- 2005 **Geothermal Resources Council (GRC)**—Served on GRC 2005 Annual Meeting Technical Program Review Committee tasked with reviewing submitted papers and organizing technical sessions (May 24-26).
- 2005 **Department of Energy (DOE) Peer Review Meeting**—Gave two talks at the DOE peer review meeting in Reno describing results of research projects ; rated #4 and #5 out of 21 funded projects even though one project had just started in July (July 26-27).

- 2005 **Association of Engineering Geologists (AEG) Meeting**—Co-Leader of Las Vegas to Grand Canyon field trip for this meeting (Sept).
- 2000-2006 **Lake Mead National Recreation Area (LMNRA)**--Periodically lead field trips for National Park Service rangers and staff at LMNRA to assist in interpreting geologic features for public's benefit (about one trip each year).
- 2003 Nevada Petroleum Society: Co-lead annual field trip **with stops at** the Brady geothermal power plant.
- 2002 **Nevada Petroleum Society**: Co-covener of field conference--*Detachment and attenuation in eastern Nevada and its application to petroleum exploration*.
- 2001 **Colorado Plateau-Basin and Range transition conference (The Mackin Conference)**: Co-convenor of conference (September 2001), which was sponsored by the Utah Geological Association and AAPG; co-chair of technical committee (2nd in charge); co-editor of special volume (2nd in charge).
- 2000 **Evolution of the Colorado River Conference**: Presented keynote address, one additional talk, poster, led post-meeting field trip (June).
- 2000 **GSA Annual Meeting**: Organized symposium entitled *The Walker Lane, An Evolving Transform Plate Boundary*.
- 2000 **GSA 2000 Technical Sessions**: Co-chair for two technical sessions for the Geological Society of Nevada 2000 Symposium Meeting.
- 1999 **Nevada Petroleum Society field trip**: Organized and lead 1999 NPS field trip--*Cenozoic geology of the northern Colorado River extensional corridor, southern Nevada and northwestern Arizona: Economic implications of regional segmentation structures*.
- 1999 **NRC Field Trip**: Organized and led field trip to the Warm Springs Valley area for the Executive Committee of the Board of Earth Sciences for the National Research Council.
- 1998 **Lake Mead Field Conference**: Attended USGS sponsored field trip and presented recently completed research in Frenchman Mountain and Meadview North areas, Nevada and Arizona (November 1st - 5th).
- 1998 **Co-leader of GSA field trip**: Rocky Mountain Section Meeting, Flagstaff, Arizona (May 26-28).
- 1998 **Editor** of Geological Society of America Special Paper entitled "Transfer Zones and Accommodation Zones: The Regional Segmentation of the Basin and Range Province".
- 1997 **Co-Chair, GSA theme session**: Three-Dimensional Strains in Extended Terranes, Annual Meeting of the Geological Society of America, Salt Lake City.
- 1994 **Symposium Chair**: "Transfer Zones and Accommodation Zones: The Regional Segmentation of the Basin and Range Province", Cordilleran Section Meeting of the Geological Society of America, San Bernardino, California, March.
- 1993 **Volunteer**, Coralville Spillway, Iowa: Interpreted geology and flooding for public.

PROFESSIONAL SOCIETIES

Geothermal Resources Council
 American Geophysical Union
 Geological Society of America
 Nevada Petroleum Society
 Sigma Xi Honors Society

HONORS AND AWARDS

- 2006 **Mackay Faculty Achievement Award**: Given to one faculty/year at the Mackay School of Earth Sciences and Engineering in recognition of outstanding achievements.
- 2006 **Best paper award** for session at the Geothermal Resources Council for presentation on "Late Cenozoic strain field and tectonic setting of the northwestern Great Basin, western USA: Implications for geothermal activity and mineralization".
- 1987 Grant-in-Aid of Research from Sigma Xi Scientific Research Society.

1987	GSA Student Research Grant.
1984-1987	Kelley-Silver Graduate Student Fellowship, University of New Mexico.
1981-1984	NSF Graduate Student Fellowship, University of Arizona.
1984	First place, student paper, Rocky Mountain GSA, Durango, Colorado.
1984	Best paper award, University of Arizona Geoscience Symposium.
1981	NAGT appointment to USGS (based on performance in 1980 field camp).
1979-1981	Watkins, Morton, Marathon, Vaughn scholarships, University of Montana.

RESEARCH SUPPORT

Funded:

- U.S. Geological Survey, STATEMAP, 2010: Geologic mapping of the east half of the Hazen Quadrangle, Lyon and Churchill Counties, Nevada: 5/1/10 to 4/30/11, **\$34,768** (Principal Investigator).
- U.S. Geological Survey, STATEMAP, 2010: Geologic mapping of the Bunejug Mountains Quadrangle, Churchill County, Nevada: 5/1/10 to 4/30/11, **\$32,238** (co-PI with Nick Hinz as PI).
- Department of Energy Recovery Act: Geothermal Technologies Program: Characterizing Structural Controls of EGS-Candidate and Conventional Geothermal Reservoirs in the Great Basin: Developing Successful Exploration Strategies in Extended Terranes, 3/1/10 to 3/1/13, **\$935,505**, Principal Investigator.
- Department of Energy Recovery Act: Geothermal Technologies Program: Comprehensive Evaluation of the Geothermal Resource Potential within the Pyramid Lake Paiute Reservation: 3/1/10 to 3/1/13, **\$903,513** (UNR part), co-PI with John Louie, DRI, and Pyramid Lake Paiute Tribe.
- Department of Energy Recovery Act: Geothermal Technologies Program: Finding large aperture fractures in geothermal resource areas using a three-component long-offset surface seismic survey, PSInSAR and structural kinematic analysis, 3/1/10 to 12/31/11, **\$97,798** (UNR part), Principal Investigator for UNR part, but co-PI with U.S. Geothermal, Inc.,.
- Bureau of Land Management: Clark County geologic mapping, 5/09/07 to 5/08/12, **\$984,883**, Principal Investigator (K.House as co-PI).
- U.S. Navy: Geothermal resource assessment of the Hawthorne Army Depot and Fallon (BR16) areas, 11/1/08 to 12/31/09, **~\$100,000** (my part), principal investigator for structural studies task.
- Sierra Geothermal Power Corporation: Structural controls of the Reese River geothermal system, central Nevada, 9/15/09 to 3/15/10, **\$45,348** (Principal Investigator; N. Hinz co-PI).
- MagmaEnergy Corporation: Structural study of the Desert Queen geothermal area, Churchill County, Nevada, 1/1/09 to 3/31/10, **\$50,384** (Principal Investigator).
- U.S. Geological Survey, STATEMAP, 2008: Geologic mapping of the west half of the Hazen Quadrangle: 5/1/08 to 8/31/09, **\$32,913** (Principal Investigator).
- U.S. Department of Energy, Characterizing Controls on Geothermal Systems in the Northern Great Basin through Integrated Structural Analysis and Modeling: 12/01/07 to 9/30/12, **\$216,568**, Principal Investigator (with M. Coolbaugh as co-PI). Delayed second year of grant awarded in 2009.
- U.S. Department of Energy, Characterizing Structural Controls on Geothermal Systems in the Northwestern Great Basin through Integrated Geologic and Geophysical Analyses: 7/01/05 to 9/30/09, **\$212,823**, Principal Investigator (G. Oppliger and M. Coolbaugh as co-PI's).
- U.S. Geological Survey, STATEMAP, 2007: Geologic mapping of the south half of the Fernley West Quadrangle: 5/1/07 to 10/31/08, **\$30,593** (Principal Investigator).
- U.S. Geological Survey, STATEMAP, 2007: Geologic mapping of the north half of the Spirit Mountain NW Quadrangle: 5/1/07 to 8/31/08, **\$28,453** (co-PI with K. House as Principal Investigator).
- B.R.G.M. (France) and ENGINE consortium (Europe), Structural controls on geothermal activity in western Turkey: Analogues to the western Great Basin, USA: 1/1/08 to 8/31/08, **~\$30,000** [converted from Euros] (Principal Investigator). [Proposal funding research for sabbatical]
- Nevada Geothermal Power Company, Developing a conceptual structural model for the Blue Mountain geothermal field, Humboldt County, Nevada: 12/07, **\$2,000**, Principal Investigator.
- Nevada Geothermal Energy Advisory, 7/11/2007 to 7/10/2009, **\$10,044** (co-PI with L. Shevenell as PI).

- National Science Foundation: Elucidating physical processes in upper crustal magma systems - Evidence from Miocene intrusive and extrusive sequences in southern Nevada, **\$85,036**, 7/1/04 to 6/30/09, Principal Investigator.
- High Desert Geoculture, LLC: Geothermal Assessment of Pyramid Lake Paiute Reservation (PLPR) Lands, **\$35,959** (my part), co-PI with L. Shevenell (PI) and M. Coolbaugh, G. Oppliger; 9/05 to 12/31/06.
- U.S. Geological Survey, STATEMAP, 2004: Geologic mapping of the north half of the Fernley West Quadrangle, Lyon and Storey Counties, Nevada: 5/1/05 to 10/31/06, **\$22,062** (Principal Investigator).
- U.S. Geological Survey, STATEMAP, 2004: Geologic mapping of the north half of the Searchlight Quadrangle, Clark County, Nevada: 5/1/05 to 8/31/06, **\$27,211** (Principal Investigator with A. Ramelli as co-PI).
- Southwest Geology, Inc (Gary Dixon): Geologic reconnaissance of the Granite Range fault zone, Washoe County Nevada, 11/01/04 to 2/28/05, **\$17,498**, Principal Investigator.
- AMP Capital Partners: Salt Wells reconnaissance mapping of surface geothermal features and structure, 12/20/04 to 3/31/05, **\$13,627**, co-PI with M. Coolbaugh as Principal Investigator.
- National Park Service: Geologic Mapping and Digital Conversion of the Mojave Mine Quadrangle, Lake Mead National Recreation Area, 10/01/04 to 9/30/05, **\$9,492**, Principal Investigator.
- Faculty Senate Technology Committee, UNR: Structural modeling software: Enhancing 3D visualization of the Earth's subsurface, **\$2,000**.
- U.S. Geological Survey, STATEMAP, 2004: Geologic mapping of the Fernley East Quadrangle: 5/1/04 to 10/31/05, **\$40,121** (Principal Investigator with Ramelli as co-PI).
- U.S. Geological Survey, STATEMAP, 2004: Geologic mapping of the southern half of the Seven Lakes Mountain Quadrangle: 5/1/04 to 8/31/05, **\$29,714** (co-PI, with C.D. Henry as Principal Investigator).
- Department of Energy (DOE) through Great Basin Center for Geothermal Energy Office: Geologic and geophysical analysis of the Desert Peak-Brady geothermal fields: Structural controls on geothermal reservoirs in the Humboldt structural zone: 10/1/03 to 9/30/06, **\$135,392**, Principal Investigator (with G. Oppliger and L. Garside as co-PI's).
- National Science Foundation (pass through to the Association of American State Geologists), geologic mapping mentoring program for undergraduate students, 2003, **\$3,700**.
- Department of Energy, Structural and geophysical analysis of the Brady-Desert Peak geothermal field: Links between northeast-trending structures and geothermal anomalies in the Great Basin: 3/1/02 to 2/28/03, **\$96,510** (Principal Investigator).
- National Science Foundation, Neogene development of the northern Walker Lane: An evolving transform plate boundary: 1/1/02 to 12/31/06, **\$272,596** (Principal Investigator).
- U.S. Geological Survey, EDMAP: Geologic mapping of extensional-magmatic relations, Union Pass Quadrangle, Arizona: 5/1/02 to 4/30/03, **\$15,000** (PI with Ryan Murphy, M.S. student).
- National Science Foundation, Processing magma and constructing plutons in the upper crust: 1/1/02 to 6/30/03, **\$10,278**, subcontract from Vanderbilt University.
- U.S. Geological Survey, STATEMAP, 2001: Geologic mapping of the west half of the Dogskin Mountain Quadrangle: 5/1/01 to 8/31/02, **\$22,313** (Principal Investigator).
- U.S. Geological Survey, STATEMAP, 2001: Geologic mapping of the Sutcliffe Quadrangle: 5/1/01 to 8/31/02, **\$29,242** (Principal Investigator).
- U.S. Geological Survey, STATEMAP, 2001: Geologic mapping of the Iceberg Canyon Quadrangle (with Rob Brady): 5/1/01 to 8/31/02, **\$18,102** (Principal Investigator but post-doc Rob Brady is responsible for work).
- National Science Foundation, Four-dimensional evaluation of a major continental detachment fault: Structural, paleomagnetic, and thermochronologic constraints: 1/1/00-12/31/02, **\$49,959**.
- National Science Foundation (pass through to the Association of American State Geologists), geologic mapping mentoring program for undergraduate students, 1999, **\$2,500**.
- Division of Emergency Management (FEMA): Preliminary assessment of natural hazards in the Laughlin area, 4/1/99 to 6/30/00, **\$66,200**, Principal Investigator (with Kyle House).
- U.S. Geological Survey, STATEMAP '00: Geologic mapping of the north half of Tule Peak and east half of Dogskin Mountain Quadrangles, 5/1/00 to 4/30/01, **\$24,750** (Principal Investigator).

- U.S. Geological Survey, EDMAP: Geologic mapping of late Tertiary basins along the western margin of the Basin and Range, western Nevada (south half of Chalk Hills and north half of Mt. Siegel Quadrangles), 5/1/99 to 4/30/00, **\$22,456**, Principal Investigator with co-PI Pat Cashman.
- U.S. Geological Survey, STATEMAP '99: Geologic mapping of the Davis Dam and south half of Tule Peak Quadrangles, 5/1/99 to 8/31/00, **\$39,979** (Principal Investigator).
- U.S. Geological Survey, funds secured for digitizing and publication of geologic maps of the Meadview North Quadrangle, Arizona and Nevada, and southern White Hills area, Arizona, **\$4,500**.
- U.S. Geological Survey, STATEMAP '98: Geologic mapping of the Nelson SW Quadrangle, 9/1/98 to 8/31/99, **\$20,326** (Principal Investigator).
- National Science Foundation, Massive crustal reorganization in an extensional orogen: A three dimensional perspective from the Colorado River extensional corridor: 7/01/96-6/30/99, **\$65,331**, (PI).
- U.S. Geological Survey, EDMAP, Geologic mapping of the northern Colorado River extensional corridor: Boundary conditions and magmatic processes (Meadview North and west half of Fourth of July Mt. Quadrangles): 5/01/97 to 4/30/98, \$20,845 (Principal Investigator).
- U.S. Geological Survey, EDMAP, Geologic mapping of the northern Colorado River extensional corridor: A three-dimensional perspective of highly extended terrane (Iretea Peaks and White Hills West Quadrangles),: 5/31/96 to 12/31/97, \$17,500 (Principal Investigator).
- University of Iowa, CIFRE Research Award, Paleomagnetic study of the southern San Andreas Fault: Assessment of paleogeographic reconstructions of southern California: 1/01/96 to 6/30/96, \$9,895 (Principal Investigator).
- University of Iowa, Old Gold Summer Fellowship: 6/01/95 to 7/31/95, \$5,000 (Principal Investigator).
- National Science Foundation, Structural Development of Interference Accommodation Zones in Extensional Orogens: 3/15/94 to 8/31/97, \$75,270 (Principal Investigator).
- Department of Energy (University of Nevada, Las Vegas), Structural framework of Crater Flat, Nevada: Implications for the proposed high-level nuclear waste repository at Yucca Mountain, 12/94 to 7/95, \$20,007, (Co-Principal Investigator).
- National Science Foundation, Project SAGUARO (Seismic and Geologic Studies Under Arizona's Regional Orogens): 7/01/92 to 6/30/94, \$45,163 (Co-Principal Investigator).
- National Science Foundation, Spatial and temporal patterns of extension, northern Colorado River extensional corridor: 9/01/91 to 12/31/93, \$112,599 (Principal Investigator).
- National Science Foundation, Geometry and kinematics of a major accommodation zone: Implications for kinematic models of continental extension: 10/87 to 10/89, \$45,000 (Principal Investigator).

PUBLICATIONS

**first author is a graduate/undergraduate student for whom I served as advisor

Published Books

- Faulds, J.E.**, and Stewart, J.H., editors, 1998, Transfer zones and accommodation zones: The regional segmentation of the Basin and Range province: Geological Society of America Special Paper 323, 257 p.
- Faulds, J.E.**, editor, 1999, Cenozoic geology of the northern Colorado River extensional corridor, southern Nevada and northwestern Arizona: Economic implications of regional segmentation structures: Nevada Petroleum Society Field Trip Guidebook, 183 p.
- Erskine, M.C., **Faulds, J.E.**, Bartley, J.M., and Rowley, P.D., eds., 2001, The geologic transition, High Plateaus to Great Basin – A symposium and field guide: The Mackin volume: Pacific Section of the American Association of Petroleum Geologists Publication GB 78 (also Utah Geological Association Publication 30), 430 p.
- Ehni, W., and **Faulds, J.**, 2002, editors, Detachment and attenuation in eastern Nevada and its application to petroleum exploration: Nevada Petroleum Society 2002 Field Trip Guidebook, 163 p.

Articles in Refereed Journals: In review

- Faulds, J.E.**, Bouchot, V., Moeck, I., and Oğuz, K., in final preparation, Structural controls of the Salihli geothermal fields, Alaşehir (Gediz) graben, western Turkey: To be submitted to Tectonophysics.

Articles in Refereed Journals: In press

- Roskowski, J.A., Patchett, P.J., Spencer, J.E., Pearthree, P.A., Dettman, D.L., **Faulds, J.E.**, and Reynolds, A.C., in review, A late Miocene-early Pliocene chain of lakes fed by the Colorado River: Evidence from Sr, C, and O Isotopes of the Bouse Formation and related units between Grand Canyon and the Gulf of California: Submitted to the Geological Society of America Bulletin.
- Faulds, J.E.**, Price, L.M., Snee, L.W., and Gans, P.B., 2010, A chronicle of Miocene extension near the Colorado Plateau-Basin and Range boundary, southern White Hills, northwestern Arizona: Paleogeographic and tectonic Implications, *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. XXX–XXX, doi: 10.1130/2010.2463(05), in press.
- Duebendorfer, E.M., **Faulds, J.E.**, and Fryxell, J.E., 2010, The South Virgin-White Hills Detachment fault, southeastern Nevada and northwestern Arizona, *in* Umhoefer, P., 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. XXX–XXX, in press.
- Langenheim, V.E., Beard, L.S., and **Faulds, J.E.**, 2010, Implications of geophysical analysis on basin geometry and fault offsets in the northern Colorado River extensional corridor and adjoining Lake Mead region, Nevada and Arizona, *in* Umhoefer, P., 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. XXX–XXX, in press.

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- Henry, C.D., and **Faulds, J.E.**, 2010, Ash-flow tuffs in the Nine Hill, Nevada, paleovalley and implications for tectonism and volcanism of the western Great Basin, USA: *Geosphere*, v. , no. 4, p. 339–369; doi: 10.1130/GES00548.1.

- Hinz, N.H., **Faulds, J.E.**, and Henry, C.D., 2009, Tertiary volcanic stratigraphy and paleotopography of the Diamond and Fort Sage Mountains – Constraining slip along the Honey Lake fault zone in the northern Walker Lane, northeastern California and western Nevada, in Oldow, J.S., and Cashman, P., eds., Late Cenozoic structure and evolution of the Great Basin-Sierra Nevada transition: Geological Society of America Special Paper 447, p. 101-132, doi:10.1130/2009.2447 (07).
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- Faulds, J.E.**, and Henry, C.D., 2008, Tectonic influences on the spatial and temporal evolution of the Walker Lane: An incipient transform fault along the evolving Pacific – North American plate boundary, in Spencer, J.E., and Titley, S.R., eds., *Circum-Pacific Tectonics, Geologic Evolution, and Ore Deposits*: Tucson, Arizona Geological Society, Digest 22, p. 437-470.
- Faulds, J.E.**, Howard, K.A., and Duebendorfer, E.M., 2008, Cenozoic evolution of the abrupt Colorado Plateau-Basin and Range boundary, northwest Arizona: A tale of three basins, immense lacustrine-evaporite deposits, and the nascent Colorado River, in Duebendorfer, E.M., and Smith, E.I., eds., *Field Guide to Plutons, Volcanoes, Faults, Reefs, Dinosaurs, and Possible Glaciation in Selected Areas of Arizona, California, and Nevada*: Geological Society of America Field Guide 11, p. 119–151, doi: 10.1130/2008.fl d011(06).
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- Shevenell, L., Coolbaugh M., Sladek C., Zehner R., Kratt C., **Faulds J.**, Penfield R., and Delwiche B., Our Evolving Knowledge of Nevada’s Geothermal Resource Potential: *Geothermal Resources Council Transactions*, v. 32, p. 169-174.
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- Coolbaugh, M.F., **Faulds, J.E.**, Kratt, C., Oppliger, G.L., Shevenell, L., Calvin, W.M., Ehni, W.J., and Zehner, R.E., 2007, Geothermal potential of the Pyramid Lake Paiute Reservation, Nevada, USA: Evidence of previously unrecognized moderate-temperature (150-170°C) geothermal systems: *Geothermal Resources Council Geothermal Bulletin*, v. 36, no. 3, p. 25-33. [I provided cover photo for this issue.]
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- Coolbaugh, M.F., Sladek, C., Kratt, C., Shevenell, L., and **Faulds, J.**, 2006, Surface indicators of geothermal activity at Salt Wells, Nevada, USA, including warm ground, borate deposits, and siliceous alteration: *Geothermal Resources Council Transactions*, v. 30, p. 399-406.
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- Miller, C.F., Miller, J.S., and **Faulds, J.E.**, 2005, Miocene volcano-plutonic systems, southern Nevada: A window into upper crustal magmatic processes: *in* Stevens, C., and Cooper, C., eds., *Western Great Basin Geology: Fieldtrip guidebook and volume, GSA Cordilleran Section (Pacific Section SEPM, pub.)*, p. 37-66.
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