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CUMMULATIVE RESUME

EDUCATION

University of Nevada Reno, NV, Ph.D. 2009
Humboldt State University, Humboldt, CA: *M.S.*, Environmental Systems (Geology), 1997
University of California, Santa Cruz, CA: *B.A.*, Earth Science, 1992

DISSERTATION

Late Pleistocene regional extension rate derived from earthquake geology of late Quaternary faults across Great Basin, Nevada between 38.5° and 40°N latitude, University of Nevada Reno, Reno, Nevada, 242 p. (committee: S.G. Wesnousky, J.G. Anderson, C. Kreemer, T. Bullard, R. Siddharthan).

MASTERS THESIS

Terrace formation, drainage adjustment, and tectonic geomorphology of the Van Duzen/North Fork Eel Rivers headwater region, northern California, Humboldt State University, CA. (Committee: Gary Carver, Harvey Kelsey, Bud Burke).

PROFESSIONAL EXPERIENCE

University of Nevada, Reno, Mackay School of Earth Sciences and Engineering, and Nevada Bureau of Mines and Geology, Assistant Professor, 2015-2020, Associate Professor, Dec. 2020-date
Koehler Geohazards, LLC, Founder and Principal Geologist, 2015-date
University of Alaska, Fairbanks, Geology and Geophysics Dept., Affiliate Faculty, 2011-2015
Humboldt State University, Adjunct Faculty, 2009-2016
State of Alaska, Dept. of Geological and Geophysical Surveys, Earthquake Geologist 2009-2015
Center for Neotectonic Studies, University of Nevada, Reno, Research Assistant, 2004-2009
William Lettis & Associates, Inc., Walnut Creek, CA, Project Geologist, 1999-2004
US Geological Survey, project paleoseismologist, 10 trenches, Puget Sound, Wa, 1998-2003
Natural Resources Management Corporation, Eureka, CA, Staff Geologist, 1998-1999
Louisiana-Pacific Corporation, Calpella, CA, Watershed Geomorphologist, 1997
Humboldt State University, Humboldt, CA, Research Assistant, 1994-1997
USDA Forest Service, Cave Exploration Team, Prince of Wales and Dall Islands, Alaska, 1993

RESEARCH INTERESTS AND REPRESENTATIVE EXPERIENCE

Over the last 25 years my work has focused on earthquake geology, Quaternary geology, paleoseismology, geomorphology, and engineering geology. I have experience evaluating regional neotectonics, as well as paleoseismic histories on individual faults, and use a variety of techniques including air photo and lidar interpretation, Quaternary geomorphic mapping, soil stratigraphy, trenching, and geochronology to assess geohazards in a wide variety of terrains.

I have conducted paleoseismic studies funded by the U.S. Geological Survey (NEHRP) and the National Science Foundation (NSF) throughout the western U.S. including faults in California, New Mexico, Washington, Alaska, and Nevada. My international experience includes projects in Turkey, Taiwan, Guatemala, Guinea, Jamaica, Haiti, and Kyrgystan. I have also conducted geologic studies for large infrastructure projects including: (1) potential dam sites in the northern Sacramento Valley, California for the California Department of Water Resources; (2) Pacific Gas and Electric Company's Diablo Canyon Nuclear Power Plant, San Luis Obispo, California; (3) Entergy Potomac's Grand Gulf nuclear power plant expansion in Mississippi; (4) Baku-Tbilisi-Ceyhan (BTC) crude oil pipeline, Turkey and (5) multiple proposed natural gas pipelines in Alaska.

My current work is focused on; (1) researching active faults and Quaternary geology in the Great Basin and surrounding region to better characterize seismic hazards, (2) conducting quadrangle scale mapping in Nevada; and (3) assessing geologic hazards for a variety of infrastructure projects.

TEACHING EXPERIENCE

Field Geology (GEOL 450), University of Nevada, Reno, Spring 2021, 2020, 2019, 2018, and 2017
Mapping faults from geomorphology (GEOL 701J) University of Nevada, Reno in conjunction with ASU
Fall 2020.

Summer Field Geology (GEOL 451), Quaternary section, University of Nevada, Reno, Summer 2020,
2019, 2018, 2017, and 2016.

Earthquake Engineering (GE 479), two lectures, UNR Spring 2019

Advanced Geology-Paleoseismic trenching (GEOL701j), UNR, Fall 2018

Special Problems/Independent Study (GEOL 495), University of Nevada, Reno, Spring 2018

Special Problems/Independent Study (GEOL 495), University of Nevada, Reno, Fall 2017

Introductory Field Geology (GEOL 260), University of Nevada, Reno, Spring 2016

Instructor (U. of West Indies): Spring 2009, One day field Neotectonics course, Jamaica

Teaching Assistant (HSU): Summer 2006 and 2007, Field Camp, Quaternary Section

Teaching Assistant (UNR): Spring 2007, Introductory Geology

Teaching Assistant (UNR): Spring 2006 and Spring 2007 Photo Geology

Teaching Assistant (UNR): Fall 2006, Quaternary Field Mapping

Instructor (UNR): Spring 2005, Introductory Geology

GRANTS AND CONTRACTS

- 2023- US Geological Survey, STATEMAP, Project 2, Quaternary mapping of the Upsal Hogsback quadrangle (\$159,045k, Koehler \$30k) and Project 4, Refined fault mapping on lidar datasets of the Bonham Ranch and Dry Valley fault systems (\$31k, Koehler \$27k).
- 2022- Lidar fault mapping support for Orogen Royalties Callaghan Property, funded by Renaissance Exploration, Inc. (\$16,504).
- 2022- US Geological Survey, STATEMAP, Project 5, Quaternary fault mapping of the Bonham Ranch and Dry Valley-Smoke Creek Ranch fault zones in the Sheepshead Spring, Sand Pass, Red Rock Canyon, and Parker Canyon 7.5' quadrangles, 1:24,000 scale (\$53,948, Koehler \$32k) and Project 2, Geologic maps of the Bedell Flat and Spanish Springs Peak 7.5' quadrangles, 1:24,000 scale (\$121,926, Koehler ~50k). Part of larger STATEMAP proposal (total \$691,000).
- 2021- US Geological Survey, NEHRP, Defining slip rates using ¹⁰Be surface exposure dating for the Polaris and Truckee faults near Truckee, California. Collaborative with North Carolina State University (L. Owen; P. Figueiredo) and Oxford University (I. Pierce) (\$54,000).
- 2021- Southern California Earthquake Center (SCEC), Dating prior earthquakes along faults of the 2019 Ridgecrest sequence. Research Collaboration UNR and Arizona State University (~\$25,000).

- 2021- StateMAP, Geologic mapping in Reno-Carson City urban area: Bedell Flat, Spanish Springs Peak, Como, and Parran 7.5' quadrangles (\$188,894, Koehler 23 days, \$61,000), part of larger StateMAP proposal, total amount of grant \$518,767.
- 2020- Nevada Department of Emergency Management, Earthquake Direct State Assistance Grant, Documentation of the M6.5 Monte Cristo earthquake: Impacts and lessons learned for Nevada, Koehler 10 days (\$68,540).
- 2020- US Geological Survey, NEHRP, Liquefaction susceptibility mapping in the Reno-Sparks metropolitan area, Nevada (\$52,362).
- 2020- US Department of Energy, INnovative Geothermal Exploration through Novel Investigations Of Undiscovered Systems (INGENIOUS). PI Ayling, multiple contributing partners, Koehler, 3 months (Lead compilation, mapping, and attribution of Quaternary faults and earthquake data) (\$10M).
- 2020- US Geological Survey, STATEMAP Proposal, Geologic mapping in Reno-Carson City urban area: north half of the Verdi 7.5' quadrangle (\$28,644), part of larger StateMap proposal, total amount of grant \$299,974.
- 2020- Nevada Office of Nuclear Projects, Assessment of previous seismic hazard studies, Yucca Mountain, Nevada: Scoping report on applications of new technologies to reduce critical data gaps (\$100,000).
- 2020- Southern California Earthquake Center (SCEC), Trenching the causative faults of the 2019 Ridgecrest sequence, Collaborative proposal with ASU, (\$41,000).
- 2019- Southern California Earthquake Center (SCEC), Rapid proposal to date deposits and evaluate paleoearthquakes along the July 5, 2019 Ridgecrest earthquake rupture, (\$2000 field support)
- Mission Support and Test Services, LLC: Site-Directed Research and Development (SDRD projects FY 2020: Invited Proposal, Geothermal Play Fairway Analysis of the NNSS: Using an Innovative GIS-Based Data Integration and Geostatistical Methodology to Assess the Geothermal Energy Potential of the NNSS, Koehler 25 days, (\$19,107) not awarded.
- 2019- Department of Energy, Regional Carbon Sequestration Partnership Grant, Multi-state partnership to evaluate carbon storage potential in geologic basins in Nevada, total grant, \$233,521, 14 days for Koehler (\$17,520) not awarded.
- 2020- US Geological Survey, NEHRP, Paleoseismic trenching investigation of the Dog Valley fault (\$68,687).
- 2019- US Geological Survey, NEHRP, Fault trace mapping and paleoseismic investigation of earthquake history and recurrence along the Bonham Ranch fault zone, north of Reno, Nevada, (\$65,597).
- 2019- Nevada Department of Emergency Management, Earthquake Direct State Assistance Grant, Development of a Nevada specific post-earthquake technical clearinghouse web site and operations plan (\$45k).
- 2019- US Geological Survey, STATEMAP, New geologic mapping in the Verdi quadrangle, part of larger StateMAP proposal award (\$54,800), Koehler 30% (\$25,971), total award \$157,631.
- 2018- US Geological Survey, NEHRP, Nevada Quaternary fault database: A new publically accessible web-based resource (\$58,490).
- 2018- US Geological Survey, STATEMAP, New geologic mapping in Reno-Carson City urban area: Granite Peak 7.5' quadrangle (\$53,728) and Washoe City 7.5' quadrangle (\$53,795), part of larger NBMG, StateMAP proposal.
- 2017- UNR/DRI Joint Postdoc Competition, Climatic, tectonic, and geochronologic studies of alluvial fans within the western Basin and Range province, Nevada, (50k/annum, 2 years) not awarded.

- 2017- US Geological Survey, NEHRP, New lidar mapping and paleoseismic characterization of the Petersen Mountain fault zone, north of Reno, Nevada (\$62,683).
- 2017- US Geological Survey, NEHRP, Development of an earthquake chronology and recurrence data for the southern Warm Springs Valley fault – using high resolution lidar and trenching, Washoe County, Nevada (\$40,526)
- 2018- US Geological Survey, NEHRP, 2018 Working Group on Nevada Seismic Hazards (\$22,452).
- 2017- Fault trenching research project, Barrick Goldstrike, awarded March 2017 (\$25,000)
- 2017- NSF, Investigating the temporal continuity of slip rates distributed across the Great Basin, USA, and the relationship of active faults to the evolution of tectonic deformation (\$272,000) not awarded.
- 2017- US Geological Survey, STATEMAP, Granite Peak quadrangle, Koehler ~10%, part of larger grant (\$299 k)
- 2016- Paleoseismic characterization of the Petersen Mountain fault zone, north of Reno, Nevada (\$70,089) not awarded.
- 2014/2015- Geologic hazards study, ASAP natural gas pipeline, Phases 4 and 5 (\$170 k)
- 2014- Fault characterization and Geologic Hazards of the Yukon Crossing Area (\$630 k)
- 2014- Technical review of fault crossings Donlin Gold Gas line (\$25k)
- 2013- Geologic hazards study, ASAP natural gas pipeline, Phase 3 (\$400 k)
- 2013- Technical Review of Lake Clark fault zone for the Pebble Partnership (\$15 k)
- 2012- Geologic hazards study along gas pipeline Livengood to Anchorage, Phase 2 (\$202 k)
- 2011- Technical Review of Susitna-Watana hydroelectric Project, Alaska (\$30 k)
- 2011- Geologic hazards along gas pipeline and lidar, Phase 1, Anchorage to Livengood (\$556 k)
- 2004- US Geological Survey, NEHRP, San Gregorio fault study (\$80,000)
- 2003- US Geological Survey, NEHRP, San Andreas fault study (\$44,000)
- 2002- California Department of Forestry and Fire Protection, Noyo River sediment study (\$40,000)
- 2002- US Geological Survey, NEHRP, Pillar Point Marsh paleoseismic study (\$40,000)

AWARDS

2009 Top Student Presenter, Seismological Society of America
2008 Outstanding Student Paper Award, American Geophysical Union
2007 Geological Society of Nevada, Student poster competition winner
2006 Jonathan O. Davis Scholarship, Desert Research Institute
2005 Geological Society of America, student research grant
2005 Geological Society of America, student research grant
2005 Geological Society of America, Outstanding student research award
1997 Northern California Geological Society, student research grant

AFFILIATIONS AND REGISTRATION

California Professional Geologist, # 7615
Geological Society of America
American Geophysical Union
Seismological Society of America
Friends of the Pleistocene

STUDENT ADVISMENT

Noah Williams - M.S. thesis committee member
James McNeil – Ph.D. primary advisor, University of Nevada, Reno (expected 2024)

Coni De Masi – Ph.D. primary advisor, UNR (2021). Now at U.S. Forest Service
Kyle Smith - Ph.D. committee, University of Alaska, Fairbanks (2020). Now at Institute of Earth Sciences, Academia Sinica
Colin Chupik – M.S. primary advisor, UNR (2019). Now at U.S. Bureau of Reclamation
Ian Pierce – Ph.D. committee, UNR (2019). Now at University of Oxford
Tabor Reedy – M.S. committee, UNR (2018). Now at U.S. Bureau of Reclamation
James Hengesh - Ph.D. examiner, University of Western Australia (2018). Now at Interface Geohazards Consulting, LLC.
Dylan Carstens – B.S. thesis, UNR (2018)
Erin Warnock – B.S. thesis, UNR (2017)
Beau Whitney - Ph.D. examiner, University of Western Australia (2015). Now at Fugro, Inc. France
Rachel Frohman - M.S. committee, University of Alaska, Fairbanks (2014)
Paul Sundberg - B.S committee, Humboldt State University (2009). Now at Laco Assoc., Eureka, CA

SYNERGISTIC ACTIVITIES

2023 Organizing committee, short course chair, GSA Cordilleran meeting, Reno, NV
2022 Session chair, GSA Cordilleran meeting, Las Vegas, NV
2022 Organizing committee, Basin and Range Earthquake Summit (BRES)
2021-date Associate member, American Association of State Geologists (AASG)
2021 Advisor, City of Reno, Regional Emergency Operations Center
2021 Co-leader, NBMG Earth Science Week field trip
2021 Organizing committee/session chair, GSA Cordilleran meeting, Reno, NV
2021 Participant, USGS workshop to develop earthquake response and data collection apps
2021 Organizing committee, Basin and Range Earthquake Working Group, Salt Lake City, UT
2020-2021 National Seismic Hazards Map reviewer, USGS, evaluation of Quaternary fault sources
2020 Proposal reviewer, ACS Petroleum Research Fund
2020-2022 Organizer and field trip leader for American Association of State Geologists meeting
2019 Participant, Idaho scenario earthquake virtual clearinghouse exercise
2017 USGS NEHRP proposal review panel member, Central and Eastern US
2016-date Member, Basin and Range Province Earthquake Working Group (BRPEWG)
2016 Organizer, UNR Lidar data short course by Ramon Arrowsmith(ASU)
2016 Session convener, Seismological Society of America annual meeting, Reno, NV
2016 Field trip leader, NBMG Advisory Board Meeting, Rainbow Mountain earthquake rupture
2016 Scientific review and organization committee for the 7th International INQUA workshop on Paleoseismology, Active Tectonics, and Archaeoseismology (PATA days), Colorado
2015 Chair, Alaska's Next Big Earthquake workshop, Fairbanks, AK
2015 Field Trip co-leader, NBMG, 1915 Pleasant Valley Earthquake Centennial field trip
2015 Testimony in the Alaska Senate State Affairs Committee for HB 35 to establish Great Alaska Earthquake Remembrance Day.
2015-2020 Western States Seismic Policy Council (WSSPC), Chair, Basin and Range Committee
2015-2017 Nevada Earthquake Safety Council (NESC)
2010-date Member, Geotechnical Extreme Events Reconnaissance (GEER)
2014 Editor, field trip guidebook, 50th anniversary of the Mw9.2 Alaska earthquake, IGCP 588
2014 Program Committee member, Seismological Society of America annual meeting
2014 Organizer, 10th National Conference on earthquake Engineering, Anchorage, AK
2013-2015 Western States Seismic Policy Council (WSSPC), Alaska representative
2013 USGS NEHRP proposal review panel member, Pacific Northwest/Alaska
2010-2015 Member, Alaska Tsunami Mapping Team, National Tsunami Hazard Mitigation Program
2010-2015 Alaska Seismic Hazards Safety Commission, Commission member and vice-chair

- 2009 Participant, Global Earthquake Model, (GEM) Faulted Earth workshop
- 2009 Participant, active faulting in the Northern Walker Lane workshop, Reno, NV
- 2007 Participant, Nevada Quaternary Faults Working Group, Reno, NV
- 2004 Participant, Bay Area Fault Working Group, Walnut Creek, CA

Departmental Service

- 2017-2022 DGSE undergraduate curriculum committee
- 2020-2022 NBMG personnel review committee
- 2021-2022 NBMG tenure and promotion committee
- 2021 Participation in interviews for NBMG Geologic Mapping Specialist
- 2019 Participation in search for DGSE department chair position
- 2019 Search committee member for NBMG business manager position
- 2019 Search committee member for NBMG field geologist position
- 2019 NBMG booth for Nevada legislative session, UNR day
- 2019 Search Committee member, NBMG Economic Geology position
- 2018 Search committee chair, NBMG digital curator position
- 2016 Search committee member, NBMG tectonics position
- 2015 Participation in interviews for DGSE petrology position

Training

- 2022 Internet security awareness training, UNR
- 2021 Mentoring Mentors seminar, UNR
- 2021 Preventing Harassment & Discrimination, UNR
- 2018 Effective Teaching Practices: cohort G, UNR
- 2017 Implicit Bias/Search Chair and Committee Training, UNR
- 2017 Planning and writing successful grant proposals workshop, UNR
- 2013 Communicating with policy makers workshop, WSSPC
- 2011 Emergency Management Institute, Introduction to Incident Command System ICS-100
- 2010 Wilderness First Aid, 8 hour course, Safety Ed
- 2009-2015 Firearms Instruction/Bear safety training, DGGS
- 2005 Excellence In Teaching Program, UNR
- 2003 Seismic Hazards Analysis Workshop, Association of Engineering Geologists
- 2002 Engineering Geology for Timber Harvesting, Wildland Management, and Watershed Restoration Workshop, Association of Engineering Geologists

POST EARTHQUAKE INVESTIGATIONS

- 2020 M6.5 Monte Cristo Mountains earthquake, Nevada, Field coordinator, surface rupture team, collaboration with USGS and CGS
- 2019 Mw6.4 and Mw7.1 Ridgecrest earthquakes, southern California, surface rupture team, collaboration with USGS, CGS, and GEER
- 2018 M7.0 Anchorage Alaska earthquake, Rapid response co-team leader (GEER), collaboration with USGS
- 2010 M7 Port-au-Prince, Haiti earthquake, NSF rapid response team, collaboration with GEER
- 2008 M6 Wells Nevada earthquake, UNR rapid response team, collaboration with Utah Geological Survey
- 2000 M7.6 Chi-Chi, Taiwan earthquake, Surface rupture and engineering response team, collaboration with Pacific Gas & Electric Co.
- 1992 M7.3 Landers, California earthquake, reconnaissance, University of California, Santa Cruz, field camp.

PUBLICATIONS

*Indicates student working under my advisement

- Scott, C., Adam, R., Arrowsmith, R., Madugo, C., Powell, J., Ford, J., Geray, B., Koehler, R., Williams, A., Sarmiento, A., Thompson, S., Dawson, T., and Kottke, A., (submitted), Anticipating coseismic fault ruptures from pre-rupture mapping, *Geosphere*.
- Pierce, I., Mukambayev, A., Abdrakhamatov, K., Rakhmedinov, E., **Koehler, R.D.**, Marshall, N., and Walker, R. (submitted), Assessment of Geothermal Resources in Kyrgyzstan and Southeast Kazakhstan, *Geothermics*
- Haeussler, P., Bender, A., Powers, P. Koehler, R.D., and Brothers, D., (submitted), Updating the crustal seismic sources for the 2023 National Seismic Hazard Model for Alaska, *American Geophysical Union Monograph*.
- Koehler, R.D.**, 2022, Lidar mapping and field observations along the Mount Callaghan faults, central Nevada, Nevada Bureau of Mines and Geology Open-File report 2022-10.
- *Pierce, I. and Koehler, R.D., (2023), 3D paleoseismology from iOS lidar and Structure from Motion photogrammetry: a case study on the Dog Valley fault, California, *Seismica*, 2(1), <https://doi.org/10.26443/seismica.v2i1.208>.
- Kozaci, O., Hoirup, D.F., Zachariasen, J.A., Bloszies, C., Hiotchcock C.S., **Koehler, R.D.**, Lindvall, S.C., McDonald, E., Feigelson, L., Abramson-Ward, H., Hartleb, R., and Huebner, M., 2022, West shore Lake Oroville lineament geologic investigation, northern California, ASCE Lifelines conference, Infrastructure Resilience special publication No. 5, UCLA Natural Hazards Risk and Resiliency Research Center (NHR3), p 52-65.
- Hatem, A.E., Collett, C.M., Briggs, R.W., Gold, R.D., Angster, S.J., Field, E.H., Powers, P.M., and **Earthquake Geology Working Group**, 2022, Simplifying complex fault geometries for systems-level analysis: Earthquake geology inputs for the U.S. National Seismic Hazard Model 2023, *Scientific Data*, v.9, p. 506.
- GBCGE, NBMG, UNR, 2022, Authors: Ayling, B., Faulds, J., Morales Rivera, A., **Koehler, R.D.**, Kreemer, C., Miawsky, E., Coolbaugh, M., Micander, R., dePolo, C., Kraal, K., Wagoner, N., Siler, D., DeAngelo, J., Glen, J., Peacock, J., Batir, J., Gentry, E., Berti, C., Lifton, Z., Clark, A., Kirby, S., Hardwick, C., and Kleber, E., 2022, *INGENIOUS – Great Basin Regional Dataset Compilation [data set]*, DOI 10.15121/1881483.
- Koehler, R.D.**, 2022, Quaternary mapping and paleoseismic trenching of the Bonham Ranch fault: as active structure along the Walker Lane/Basin and Range transition zone, Nevada, USA. In proceedings of the 11th International INQUA meeting on Paleoseismology, Active Tectonics, and Archeoseismology (PATA), September 25-30, 2022.
- *Pierce, I., Haddon, E., Dee, S., Elliott, A., Engle, Z., Hartshorn, E., **Koehler, R.D.**, Pickering, A., and Seitz, G. (in prep), Sub-centimeter Structure-from-Motion imagery of surface ruptures from the 2020 M6.5 Monte Cristo Range earthquake, Nevada.
- Hatem, A.E., Collett, C.M., Briggs, R.W., Gold, R.D., Angster, S.J., Powers, P.M., Field, E.H., Anderson, M., Ben-Horin, J.Y., Dawson, T., DeLong, S., DuRoss, C., Thompson Jobe, J., Kleber, E., Knudsen, K.L., **Koehler, R.D.**, Koning, D., Lifton, Z., Madin, I., Mauch, J., Morgan, M., Pearthree, P., Pollitz, F., Scharer, K., Sherrod, B., Stickney, M., Wittke, S., and Zachariasen, J., 2022, Earthquake geology inputs for the U.S. National Seismic Hazard Model (NSHM) 2023 (western US) (ver. 2.0, February 2022): U.S. Geological Survey data release, <https://doi.org/10.5066/P9AU713N>.
- Koehler, R.D.**, S. Dee, A. Elliott, A. Hatem, A. Pickering, I. Pierce, G. Seitz, 2021, Field response and surface rupture characteristics of the 2020 M6.5 Monte Cristo Mountains earthquake, central Walker Lane, Nevada: *Seismological Research Letters*, v. 92, 823-839.

- *Chupik, C., **Koehler, R.D.**, and Keen-Zebert, A., 2022, Quaternary mapping, and paleoseismic investigation of the Warm Springs Valley fault, northern Walker Lane, Nevada- northern California, *Bulletin of the Seismological Society of America*, v. 112, no. 1, p. 575-596.
- *De Masi, C., **Koehler, R.D.**, Dee, S., Keen-Zebert, A., 2021, Early development of strike-slip faulting: Paleoseismic study along the Petersen Mountain fault, northern Walker Lane, Nevada, *Journal of Quaternary Science*, v. 36, no. 3, p. 403-414.
- *Pierce, I., and **Koehler, R.D.**, 2021, iPad lidar scanning for 3D trenching: a new methodology for paleoseismologists demonstrated on the Dog Valley fault, Truckee, CA, *Association of Environmental and Engineering Geologist, AEG News*, v.64, no.3., 9. 29-32.
- Cabas, A., Beyzaei, C., Stuedlein, A., Franke, K.W., **Koehler, R.D.**, Zimmaro, P., Wood, C., Christie, S., Yang, Z., and Lorenzo-Velazquez, C., 2021, Geotechnical lessons learned from the M7.1 2018 Anchorage Alaska earthquake, *Earthquake Spectra*, v. 37, no. 4, 2372–2399.
- Hatem, A.E., Collett, C.M., Gold, R.D., Briggs, R.W., Angster, S.A., Field, E.H., Anderson, M., Ben-Horin, J.Y., Dawson, T., DeLong, S., DuRoss, C., Thompson Jobe, J., Kleber, E., Knudsen, K.L., **Koehler, R.**, Koning, D., Lifton, Z., Madin, I., Mauch, J., Morgan, M., Pearthree, P., Petersen, M., Pollitz, F., Scharer, K., Powers, P., Sherrod, B., Stickney, M., Wittke, S., and Zachariassen, J., 2021, Earthquake geology inputs for the National Seismic Hazard Model (NSHM) 2023, version 1.0: U.S. Geological Survey data release, <https://doi.org/10.5066/P918XCUU>.
- Dee, S., **Koehler, R.D.**, Elliott, A.J., Hatem, A.E., Pickering, A.J., Pierce, I., Seitz, G.G., Collett, C.M., Dawson, T.E., De Masi, C., dePolo, C.M., Hartshorn, E.J., Madugo, C.M., Trexler, C.C., Verdugo, D.M., Wesnousky, S.G., and Zachariassen, J., 2021, Surface rupture map of the 2020 M6.5 Monte Cristo Range earthquake, Esmeralda and Mineral counties, Nevada: Nevada Bureau of Mines and Geology Map 190, 2 sheets, scale 1:14,000, 26 p.
- Duross, C., and 47 others, 2020, Ridgecrest displacement observations for use in constructing along-strike displacement distributions for the M6.4 and M7.1 ruptures, *Bulletin of the Seismological Society of America*, v. 110, no. 4, p. 1400-1418.
- Hammond, W.C., Blewitt, G., Kreemer, C., **Koehler, R.D.**, and Dee, S., 2020, Geodetic observation of seismic cycles before, during, and after the 2020 Monte Cristo Range earthquake using the MAGNET GPS network, *Seismological Research Letters*, v. 92, 647-662.
- Koehler, R.D.**, 2020, Assessment of potentially active faults in the northwestern Livengood quadrangle, Alaska, State of Alaska, Division of Geological & Geophysical Surveys, Report of Investigation, 2020-4, 35 p.
- Cabas, A., Beyzaei, C., Franke, K., **Koehler, R.D.**, Pierce, I., Stuedlein, A., Yang, Z., and Christie, S., 2020, Turning Disaster into Knowledge: Geotechnical aspects of the 2018 Mw 7.1 Anchorage Alaska earthquake, *Proceedings Geo-Congress 2020*, February 25-28, 2020.
- Koehler, R.D.**, Reger, R.D., Spangler, E.R., and Hubbard, T.D., 2019, Assessment of geomorphology and geologic hazards in the Parks Highway-Minto Flats-Dalton Highway infrastructure corridor: Cook Inlet to Prudhoe Bay, Alaska: Alaska Division of Geological & Geophysical Surveys Report of Investigation 2019-8, 82 p., 4 sheets.
- Pierce, I.*, Williams, A., **Koehler, R.D.**, and Chupik, C., 2020, High resolution structure-from-motion models and orthophotos of the southern sections of the 2019 Mw7.1 and Mw6.4 Ridgecrest, earthquakes surface ruptures, *Seismological Research Letters*, 91, 4, 2124-2126.
- Ponti, D.J., Blair, J.L., Rosa, C.M., Thomas, K., Pickering, A.J., Akciz, S., Angster, S., Avouac, J.P., Bachhuber, J., Bacon, S. et al., 2020, Documentation of surface fault rupture and ground deformation features produced by the Ridgecrest M6.4 and M7.1 earthquake sequence of July 4 and 5, 2019, *Seismological Research Letters*, v. 91, no. 5, 2942-2959.
- Stewart, J.P. (Ed.), Brandenberg, S.J., Want, P., Chukwuebuka, C., Hudson, K., Mazzoni, S., Bozorgnia, Y., Goulet, C.A., Davis, C.A., Ahdi, S.K., Zareian, F., Fayaz, J., **Koehler, R.D.**, Pierce, I., Chupik, C., Williams, A., Akciz, S., Hudson, M.B., Kishida, T., Hudnut, K.W., Brooks, B., Gold, R., Ponti, D.,

- Scharer, K., Hernandez, J., Patton, J., Olson, B., Dawson, T., Blake, K., Donnellan, A., Lyzenga, G., and Conway, E., 2019, Preliminary report on engineering and geological effects of the July 2019 Ridgecrest earthquake sequence, Version 1 and 2, Geotechnical Extreme Events Association (GEER), report number GEER-064.
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INVITED PRESENTATIONS

U.S. Department of State geothermal capacity-building project workshop with the Peruvian Geological Survey: Quaternary hazards and fault trenching in NV/CA, August 22, 2022.

114th annual meeting of the American Association of State Geologists (AASG): Characterizing distributed deformation across the northern Walker Lane, California and Nevada, June 13, 2022.

Southern California Earthquake Center (SCEC) workshop on Coordinating Post-Earthquake Field Data Collection: Perspectives on post-earthquake reconnaissance studies: Ridgecrest and Monte Cristo Range earthquakes, January 12, 2022.

Earthquake Engineering Research Institute (EERI) northern California chapter meeting: Clearinghouse operations and surface effects of the 8 July 2021 M6.0 Antelope Valley earthquake, Dec. 9, 2021.

Arctic Seismic Resiliency Workshop, Anchorage, AK: Rapid Earthquake Reconnaissance: Helping to better understand the distribution of hazards and improving resiliency, September, 20-23, 2021.

Basin and Range Earthquake Working Group (BREWG) meeting: Summary of the 15 May 2020, M 6.5 Monte Cristo, Nevada Earthquake, virtually, Feb. 9, 2021.

Basin and Range Earthquake Working Group (BREWG) meeting: The earthquake hazards program at NBMG, an update of recent research, virtually, Feb. 9, 2021.

Geological Society of Nevada speaker series, Reno, NV: Rapid response to the M6.5 Monte Cristo, Nevada earthquake, the largest earthquake in Nevada in 65 years, June 16, 2020.

National Earthquake conference, San Diego, CA: Future research directions in earthquake engineering: Insights from field evaluation of the 2018 Anchorage Alaska earthquake, March 5, 2020.

National Earthquake conference, San Diego, CA: Rapid reconnaissance and geologic effects of the 2019 Ridgecrest earthquake sequence, lightning talk, March 4, 2020.

Basin and Range Province Earthquake Working Group meeting, Salt Lake City, Utah: The Earthquake Hazards Program at NBMG, February 5, 2020

Nevada-Utah Earthquake Summit, Reno, NV: Scientific response to the 2019 Ridgecrest, California earthquake sequence, Oct. 16, 2019

Association for Engineering Geology, Las Vegas meeting: The 2019 M6.4 and M7.1 Ridgecrest, California earthquakes and implications for Nevada, Oct., 11, 2019.

Basin and Range Province Earthquake Working Group meeting, Salt Lake City, Utah: The Earthquake Hazards Program at NBMG, February 6, 2019

Association of Engineering Geology (AEG), Great Basin Chapter dinner, Reno, NV: Characterization of fault slip rates in the North Valleys area of Reno, NV: application of new lidar data and ongoing studies, October 18, 2018.

Utah Quaternary fault parameters working group, Salt Lake City, UT: Progress towards an updated Nevada seismic Hazards Model, February 14, 2018.

Basin and Range Province earthquake working group (BRPEWG) meeting, Salt Lake City, UT: Nevada presentation on technical issues facing the Basin and Range province, February 15, 2018.

Working Group on Nevada Seismic Hazards Workshop, Reno, Nevada: Efforts to better characterize the seismic potential of faults in the North Valleys region, Reno, Nevada, February 5, 2018.

CARIUSA STEM Workgroup, Kingston, Jamaica: A Quaternary fault database for Jamaica: Implications for seismic hazard assessment, March 13, 2017.

University of Nevada, Reno, Geography Department spring colloquium: Assessing geologic hazards along a 900-km-long natural gas pipeline, Alaska: Evolving landscapes in big country, Mar. 8, 2017.

- Utah Quaternary fault parameters working group, Salt Lake City, UT: Updating Quaternary fault parameters for the Reno and Las Vegas Areas, Nevada, February 8, 2017.
- Nevada Earthquake Safety Council meeting, Las Vegas, NV: Preparation for earthquake early warning in Alaska: a potential path forward for Nevada, November 2, 2016
- Nevada Bureau of Mines and Geology annual open house: Unravelling the earthquake history along the most exiting road in America, Quaternary Faults and Paleoearthquakes in Central Nevada, Oct. 15, 2016.
- Lions Club luncheon: Nevada's earthquake hazards: Historical and Pre-Historical Earthquakes, Sept 27, 2016.
- Earthquake Economic Resiliency Forum for the greater Reno/Sparks, Carson, Tahoe and Truckee region, Eldorado Resort Casino: Historical Earthquakes in the Nevada-California border region, 2016, April 19, 2016.
- Chico State University geology seminar series: Far-field plate boundary deformation: paleoseismic perspectives from Nevada and Alaska, February 16, 2016
- Informational meeting on tsunamis for emergency managers in the communities of Hoonah and Gastavus, Alaska: Tsunami hazards in southeast Alaska from local and distant sources, December 1, 2014.
- Western State Seismic Policy Council, annual awards luncheon: Seismic hazards field investigations in Alaska, July, 21, 2014.
- Tsunami Operations Workshop, Alaska Division of Homeland Security and Emergency Management, Kodiak, Alaska: Tsunami hazards in Alaska 50 years after the 1964 Great Alaska Earthquake, February 11-12, 2014.
- Informational meeting on tsunamis for emergency managers in the community of Sitka, Alaska: Local and distant tsunami hazards and paleotsunami reconnaissance, November 2, 2013.
- Institute of Electrical and Electronics Engineers lecture series, University of Alaska, Fairbanks: Application of LiDAR to geohazard characterization in Alaska, October 24, 2013.
- Osher Lifelong Learning Institute, University of Alaska, Fairbanks: Subduction zone paleoseismology and tsunami studies in Alaska (50 years after 1964), September 30, 2013.
- University of Alaska Fairbanks geology seminar series: Paleoseismology of the Castle Mountain, Denali, and Pass Creek faults, Alaska, March 22, 2013.
- Tsunami Operations Workshop, Federal Emergency management Agency, Cordova, Alaska: Paleotsunami research in the Aleutians, October 30, 2012.
- Tsunami Operations Workshop, Federal Emergency Management Agency, Sitka, Alaska: The Fairweather fault and recently glaciated terrain: Potential sources for local tsunamis in Southeast Alaska, September 13, 2011.
- Association of Engineering Geology (AEG) student chapter meeting, University of Alaska, Fairbanks: The 2010 Port au Prince, Haiti earthquake: preventable consequences and lasting effects, February 24, 2011.
- University of Alaska, Fairbanks geology seminar series: Neotectonic adventures in Alaska: The moletrack from yo-yo's to pingos, November 12, 2010.
- Alaska Mining Association breakfast meeting, Fairbanks, AK: Seismic hazards in Alaska: Lessons learned from recent destructive earthquakes in Haiti and Chile, March 26, 2010.
- Alaska Geological Society: Field observations of the 12 January 2010 Port Au Prince Haiti earthquake and implications for seismic hazards in Alaska, April 16, 2010.
- 22nd Biennial Fairbanks Alaska Mining conference, Artic International Mining Symposium: The Enriquillo-Plantain garden fault, Haiti: Implications for seismic hazards in Alaska, March 11, 2010.
- Alaska Seismic Safety Commission: The 2010 Port Au Prince, Haiti earthquake: Links between the globally missing earthquake, and seismic hazard assessment in Alaska, March 4, 2010.
- U.S. Geological Survey, GHSC Seminar Series, Golden Colorado: Ten days in Haiti: Reconnaissance evaluation of the Port Au Prince 12 January 2010 earthquake, Feb. 24, 2010.

RADIO INTERVIEWS, PRESS RELEASES, AND ARTICLES RELATED TO MY WORK

Southern California Earthquake Center (SCEC), newsletter article, Remote teaching collaboration on mapping active faults for probabilistic fault displacement hazard, December 15, 2020. <https://www.scec.org/article/638>

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KSNV-Las Vegas, interviewed for television segment on the 2019 Ridgecrest, CA earthquakes and ongoing aftershock activity, October 30, 2020. <https://news3lv.com/news/local/special-report-could-seismic-shifts-trigger-faults-around-las-vegas>

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ABSTRACTS

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- Elliott, A., Dee, S., **Koehler, R.D.**, Pierce, I., Hatem, A., Ruhl, C., and Xu, X., 2022, Rupture in the Mina Deflection: Activation of the full range of faults during the single 2020 Monte Cristo Range earthquake, Presented at the 2022 Basin and Range Earthquake Summit (BRES), Oct. 17-20, 2022, Salt Lake City, UT.
- Koehler, R.D.**, Lifton, Z., Kleber, E.J., Knudsen, T., Kirby, S., dePolo, C., Faulds, J., and Ayling, B., 2022, Quaternary fault compilation for the INGENIOUS Geothermal Project, Presented at the 2022 Basin and Range Earthquake Summit (BRES), October 17-20, 2022, Salt Lake City, UT.
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- Faulds, J.E., Henry, C.D., **Koehler, R.D.**, and Kreemer, C., 2022, The Walker Lane: An incipient plate boundary dissecting the American west and potential heir to the San Andreas fault, presented at the Association of Engineering Geology (AEG) annual meeting, Las Vegas, NV, September 12-17, 2022.
- Witter, R.C., Briggs, R.W., Dura, T., Engelhart, S.E., Nelson, A.R., **Koehler, R.D.**, and Haeussler, P.J., 2022, Paleoseismological perspectives on megathrust locking, rupture, and tsunami hazard in Alaska, presented at the Seismological Society of America annual meeting, Bellvue, Washington, April 19-23, 2022.
- Koehler, R.D.**, 2022, Characterizing cryptic faults across the northern Walker Lane/Basin and Range transition zone, California and Nevada, Geological Society of America Cordilleran meeting, Las Vegas, NV, March 15-17, 2022.
- Ayling, B. and 33 others, 2022, Innovative Geothermal Exploration through Novel Investigations Of Undiscovered Systems (INGENIOUS) Project Introduction and Activity Update, Geothermal Rising conference, Reno, NV, August 28-31, 2022.
- Elliott, A., Milliner, C., Xu, E., Dee, S., **Koehler, R.D.**, Hatem, A., Pierce, I., and Pickering, A., 2021, Near-field co- and post-seismic deformation from multiple InSAR products constrain field observations of the M6.5 Monte Cristo Range, Nevada, earthquake surface rupture, presented at American Geophysical Union annual meeting, New Orleans, LA, December 13-17, 2021.
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- Koehler, R.D.**, Kelson, K.I., Matthews, G., Kang, K.H., and A.D. Barron, 2002, The Role of Stored Historic Sediment in Short-term Sediment Production, South Fork Noyo River, Jackson State Demonstration Forest, California, Geological Society of America Abstracts with Programs, Cordilleran Section meeting, Vol. 34, No. 5.
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- Witter, R.C., G.A. Carver, J.R. Patton, H.M. Kelsey, C.E. Garrison-Laney, **R.D. Koehler**, and W.D. Page, 2001, Evidence for progressive folding of late Holocene tidal marsh deposits along the western Little Salmon fault, Humboldt Bay, northern California (abs), Seismological Research Letters, 72, 270.
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- Koehler, R.D.**, 1999, Terrace Formation, Drainage Adjustment, And Tectonic Geomorphology Of The Van Duzen/North Fork Eel Rivers Headwater Region, Northern California [abs.]: Geological Society of America Abstracts with Programs, Cordilleran Section meeting, v. 31, p. 71.
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- Koehler, R.D.**, 1997, Quaternary history of the Van Duzen River headwaters along the northern portion of the Lake Mountain fault zone, northern California [abs.]: Geological Society of America Abstracts with Programs, Cordilleran Section meeting, v. 29, p. 42.
- Carver, G.A., Peterson, D.D., Garrison, C.E., and **Koehler, R.D.**, 1996, Paleotsunamic evidence of subduction earthquakes from northern California [abs.]: Geologic Society of America Abstracts with Programs, Annual Meeting Cordilleran Section, v. 28, p. 54.

SENIOR TECHNICAL REVIEW

- Pacific Gas & Electric Co. (PG&E). Expert review panel for revised Seismic Source Characterization report for PG&E's hydro distribution system (2021).
- Nevada Office of Nuclear Projects. Technical review of paleoseismic studies related the proposed Yucca Mountain nuclear waste repository (2020).
- BGC Engineering, Inc. (BGC). Senior technical review of seismic hazard investigation of the Tailing Storage Facility for the Donlin Gold Project, Nova Gold and Barrack (2019).
- US Bureau of Reclamation. Field review of four paleoseismic trenches along the Gales Creek fault, Oregon (2018).
- Pacific Gas & Electric Co. (PG&E). Field review of potential fault lineaments in the vicinity of Scott Dam, California. With Rockwell Consulting (2018).
- California Department of Water Resources (DWR). Office review of fault lineament mapping north of Frenchman Reservoir. With Infra-Terra, Inc. (2018).
- Michael Baker International. Evaluation and review of FERC comments related to natural gas pipeline route pipeline, Alaska. Report # AK LNG RFI-465 Resource Report 06 (September, 2017).
- Pacific Gas & Electric Co. (PG&E). Review of seismic source model related to PG&E's hydro distribution system and earthquake hazards program (October, 2017).
- Lettis Consultants International, Inc. Review of probabilistic seismic hazards assessment source model for Jamaica LNG project (July, 2017).
- Golder & Associates. Provided senior technical review for seismic source characterization prepared for the Clear Air Force base north of Healy Alaska (2015).
- Susitna-Watana Hydroelectric Project, Crustal Seismic Source Evaluation, AEA11-022, for Alaska Energy Authority (Feb. 2015).
- Alaska LNG, FERC documents, Draft Resource report No. 1 (Project Description) and No. 6 (Geologic Resources), Docket No. PF14-21-000 (2015)
- Susitna-Watana Hydroelectric Project (FERC No. 14241) Initial Study Report, Geomorphology section, Geology and Soils section, and Site-specific seismic hazard study section (October, 2014).
- Copper River Basin Best Interest Finding report, for State of Alaska Division of Oil & Gas (July, 2014).
- Preliminary Geohazard Assessment for Potential Power Plant Sites Mount Spurr, Alaska, for Hattenburg Dilley & Linnell, LLC and ORMAT Nevada, Inc. (Feb 2014).

- West Susitna Access Reconnaissance Study, West Susitna Access to resource Development, Transportation Analysis Report, for the Alaska Department of Transportation and Public Facilities and Shannon & Wilson, Inc., Sisyphus Consulting (December 2013).
- Senior Seismic Hazard Analysis Committee (SSHAC) member, Arizona Public Service's (APS) workshop #2 for the Palo Verde Nuclear Generating Station Sept 24 & 25, 2013.
- Susitna-Watana hydroelectric project, NTP 16, technical Memorandum No. 13, v0.0 (2013), for Alaska Energy Authority, Fugro Consultants, Inc, and MWH Americas.
- Susitna-Watana hydroelectric project, NTP 11 Seismic Studies, Technical Memorandum No. 8, v0, Lineament Mapping and Analyses for the Susitna-Watana Dam site Area (2012) and field review of fault lineament mapping (2013).
- Alaska Energy Authority, alternative energy grants, 30-40 grants per year (2010-2014).
- Point Thompson Project Final Environmental Impact Statement related to draft permit application from Exxon Mobil Corporation to develop a pipeline to the Point Thompson oil field (2012).
- Environmental Protection Agency report "An assessment of potential mining impacts on salmon ecosystems of Bristol Bay, Alaska, Volume 1. Performed for State of Alaska Office of Project Management and Permitting (2012).
- Pebble Partnership, LLC.'s seismic study related to the Pebble mine, Environmental Baseline Document, and assessment of data (lidar, orthophotographs) pertinent to the western extent of the Lake Clark fault (2012).
- Alaska Pipeline Project, Draft Resource report 6-Rev0, Geologic Resources, FERC Docket No. PF09-11-000, USAG-UR-SGREG-000009, Prepared by TransCanada and Exxon Mobil (2011).
- Donlin Gold Project, Natural Gas Pipeline, Plan of Development (2011).
- Shell oil's Chukchi Sea Exploration Plan for the Bureau of Ocean and Energy Management BOEM and Alaska DNR (2011).
- Lake and Peninsula Borough, Alaska, coastal management program (2011).
- Seismic hazards characterization (PSHA) for the Susitna-Watana Hydroelectric dam project southcentral Alaska including technical advisement to Fugro Consultants, Inc. (2011).
- Seismic hazards issues related to proposed natural gas storage facility in Kenai, Alaska, DNR, DGGS (2010)
- Seismic hazards issues related to proposed Hydroelectric power facilities in Alaska, 35 proposals in all regions of the state, DNR, DGGS (2009-2011)
- Field review of paleoseismic trenches excavated by TransCanada Alaska Company, LLC, Foothills Pipe Lines (North B.C.) Ltd., and Foothills Pipe Lines (South Yukon) Ltd. Trenches located along the Bear Creek lineament and Dot "T" Johnson faults within proposed natural gas pipeline corridor, DNR, DGGS (2010).
- Field review of paleoseismic trench excavated across a suspected tectonic lineament near Lake Iliamna, southwest Alaska in the vicinity of the proposed Pebble Mine project. Represented State of Alaska mining, land, and water, large projects permitting department (2010).
- Preliminary fault investigation for residential housing development along the Mount Rose fault, Reno, NV. Client: Marvin Davis & Associates (2008).
- Assisted with the technical review of the Baja LNG terminal seismic hazards report. Evaluated paleoseismic techniques used to evaluate fault activity. AT WLA, Client: Shell Global Solutions (2004).
- Technical review of multiple Environmental Impact Reports (Geology, Soils, and Seismicity sections) prepared for housing sub-divisions in Pittsburg, Ca. At WLA, Client: Adams, Broadwell, Joseph, & Cardozo Attorneys at Law (2002).
- Technical review of field drilling and grading operations for the City of Vallejo, at the Sky Valley housing development. Confirmed the existence of landslide planes and approved keyway depths for landslide hazard mitigation. At WLA, Client: City of Vallejo (2001-2002).

SELECTED GEOLOGIC, SEISMIC, AND FAULT HAZARD INVESTIGATIONS

- California Department of Water Resources. Oroville Dam Spillway Repair (LCI-8) project. Geologic mapping of rock and soil exposures, geotechnical data collection within construction excavations, and paleoseismic trenching. Collaborative work with Infra-Terra, Inc., and Lettis Consultants International (2017).
- Alyeska Pipeline Services Corporation. Provided geological services including advising, field reconnaissance, peer review, and oversight for geotechnical and geohazard assessments for Alyeska's aboveground Integrity Management Program associated with the Trans-Alaska Pipeline System (TAPS) (2014-2015).
- Worley Parsons, ExxonMobil Alaska LNG LCC and Partners – AK LNG Project. The AKLNG Project is a FERC Section 3 LNG export facility that includes project segments for treatment, delivery, and transportation of natural gas from the Alaska North Slope along an 800 mile route to the LNG plant and marine terminal. Duties include field evaluation of active faults and disseminating results of the field program to project engineers. Collaborative work between Koehler Geohazards, LLC, PaleoEarthquake International, LLC., and Carver Geologic LLC (2013-2016).
- Fault crossing evaluation for the Donlin Gold natural gas pipeline. Focus on the western Denali fault. With Michael Baker, Inc and Interface Geohazard consulting, LLC. (2014).
- Seismic hazards assessment along the Trans Alaska Pipeline System (TAPS) at the Salcha River seismic zone. With Carver Geologic, LLC and Alyeska Pipeline Services Company (2013).
- Alaska Gasline Development Corporation - Alaska Stand Alone Pipeline and Bullet Line natural gas pipeline projects. Fault crossing and geologic hazard assessment, Anchorage to Prudhoe Bay, Alaska. Coordinated project from conception, lidar and data review, helicopter field reconnaissance. Collaborative work between DGGS and Alaska Gasline Development Corp. (2011-2015).
- TransCanada/Exxon Mobil – Alaska Pipeline Project (APP). Seismic hazards studies along natural gas pipeline corridor, Prudoe Bay to the Canadian border, geologic mapping and paleoseismic trenching along active faults, verification and delineation of geologic hazards at fault crossings, Collaborative work with DGGS, TransCanada Alaska company LLC (TC Alaska) and ExxonMobil Alaska (2009-11).
- Seismotectonics of Liberia, West Africa, contribution to probabilistic seismic hazard assessment (PSHA) for rail transport route for the Rio Tinto Simandou Iron Ore Project, Liberia (2009) Subconsultant to Lahontan GeoSciences and Scott Wilson Associates.
- Geologic hazard evaluation for hydroelectric canals associated with PG&E's Manton system near Redding, CA including the Armstrong, Al Smith, Keswick, Lake Grace, Shingle Creek, Baldwin, Mill Seat Bypass, Digger feeder, Cross Country, Eagle Canyon, Coleman, Instep, South Battle and Loomis Mills canals. Client: PG&E. Work in conjunction with Piedmont Geosciences. (2008).
- Seismotectonics of Guinea, Developed seismotectonic model for probabilistic seismic hazard assessment (PSHA) for rail transport route and port facility associated with the Rio Tinto Simandou Iron Ore Project, Guinea, West Africa. (2008). Subconsultant to Lahontan GeoSciences and Scott Wilson Associates.
- Fault investigation including setback recommendations for proposed remodel of the Barber Residence, 3372 Nambe Dr., Arrow Creek subdivision, Reno, NV. (2008) Client: Wood Rodgers & Associates.
- Fault investigation of 180 acre parcel near Lemmon Drive/Highway 395, Reno, NV for proposed Walmart development. Client: Wood Rodgers Consultants, Inc. (2008).
- Geologic hazard evaluation for hydroelectric canals in the vicinity of Auburn, CA including Drum, Chalk Bluff, Upper Wise, Lower Wise, Fiddler Green, and South canals. Client: PG&E. Work in conjunction with Piedmont Geosciences. (2007-2008).
- Fault investigation for Spring Creek development, Elko, Nevada. Client: Wood Rodgers Consultants, Inc. (2006)

- Fault trenching investigation for the Baku-Tbilisi-Ceyhan (BTC) crude oil pipeline project, Turkey. Investigation conducted to verify fault locations, width of zone of deformation, style of deformation, earthquake magnitude, and amount and direction of displacement, and to provide fault crossing design validation. Faults evaluated included North Anatolian fault, Ezurum East fault, Ezurum West fault, and Deliler fault. At WLA, client: Botas (2004).
- Office-based analyses for the Congo River natural gas pipeline crossing project, Angola including literature search and review, bathimetric interpretation of canyon landforms, and longitudinal profiles. At WLA, client: Shell Global Solutions (2004).
- Geologic hazards assessment in support of an Environmental Impact Report for the Lawson's Landing development, Dillon Beach, Marin County, CA. At WLA, client: EDAW, Inc. (2003).
- Fault rupture hazard investigation for the proposed Telacu senior housing project along the San Jacinto fault in San Bernadino, California. At WLA, client: Geotechnologies, Inc. (2003).
- Geologic, seismic, and geotechnical studies for Entergy Potomac's Grand Gulf nuclear power plant expansion, Mississippi. Performed detailed geologic mapping within the 1-km, 5-mile, and 25-mile radius study areas. Compiled a seismic source model for the Central United States to update Electric Power Research Institute (EPRI) seismic source and ground motion models to be used in early site permitting. At WLA (2002-2003).
- Fault location assessment for the proposed development of the Portola Valley Town Center Project (PVTCP), Portola Valley, California. The assessment included exploratory trenching (10 trenches) to investigate the location and geometry of the Woodside trace of the San Andreas fault, 14 borings with continuous core sampling, and surveying. At WLA (2001, 2002, and 2003).
- Surface fault rupture hazard study for the Sandy Creek detention basin along the Antioch fault, Antioch, California. At WLA (2002)
- Liquefaction hazard assessment for the El Portal school, San Pablo, California. Study included logging of 4 boreholes. At WLA (2002).
- Rock fracture and fault location study for the Altamont Landfill, Livermore, California. Study assessed fault control of groundwater flow. At WLA, client: Waste Management (2002)
- Seismic hazard evaluation for the Haifa LPG facility, Haifa, Isreal. Work included air photo mapping of fault lineaments and fault strip map compilation. At WLA (2002).
- Fault rupture hazard investigation for the General Mills Yoplait Colombo plant involving trenching the Avalon-Compton segment of the Newport-Inglewood fault. At WLA (2002).
- Geologic and geotechnical hazard evaluation of the Ralston Penstock, a component of Placer County Water Agency's Middle Fork Project. This project consisted of a field reconnaissance of the penstock, and preparation of a rock fall hazard strip map along the penstock alignment. At WLA (2001).
- Fault rupture hazard investigation for the proposed new development at the Eden Church, Hayward, California. Trenches were documented for the presence or absence of active faults capable of producing surface rupture. At WLA (2001).
- Fault rupture hazard investigation for the new pro shop and locker room expansion for the Mira Vista Country Club, El Cerritto, California. Trenches were documented for the presence or absence of active faults capable of producing surface rupture. At WLA (2001).
- Fault rupture hazard investigation for a proposed development at 10025 Foothill Road, Sunol, California. Aerial Photography interpretation and field reconnaissance were used to construct a Quaternary geology site map. Exploratory trenching was used to document the absence of active fault traces in the vicinity of the building footprint. At WLA (2000).
- Fault rupture hazard investigation for the new Alameda County Sheriffs facility, San Leandro, California. Trenches were documented for the presence or absence of active faults capable of producing surface rupture. At WLA (2000-2002).
- Site Geotechnical Characterization (SGC) for the PG&E Diablo Canyon Nuclear Power Plant, San Luis Obispo, California. This work included geologic mapping, trenching, rock fracture analysis,

continuous core drilling, downhole geophysical data acquisition, and report preparation. This information will be used to assess the feasibility of licensing and constructing an interim dry cask storage facility for spent fuel rod assemblies. At WLA (2000-2001).

- Fault rupture hazard investigation for the Juvenile Hall facility, San Leandro, California. Seventeen exploratory trenches were documented for the presence or absence of active faults capable of producing surface rupture. At WLA (2000).
- Geotechnical investigation including drilling, test pit description, and construction monitoring for the Turtle Bay Pedestrian Bridge, Redding, California. At WLA (2000).
- Geotechnical investigation including trenching and drilling to identify the margin of the Blakemont landslide at the proposed development on 7952 Terrace Drive, El Cerritto, California. At WLA (2001).
- Seismic source study for the California Department of Water Resources. This study evaluated the earthquake hazard for potential dam sites in the northern Sacramento Valley, California. At WLA (1999).