SEAN PATRICK BEMIS

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| Department of Earth & Environmental Sciences  University of Kentucky  101 Slone Building  Lexington, KY 40506-0053 | | | | | | | | | | | | | | | Phone: (541) 556-2256  Email: [sean.bemis@uky.edu](mailto:sean.bemis@uky.edu) |
| EMPLOYMENT | | | | | | | | | | | | | | | |
| 2011 – present | | | | | | | | **Assistant Professor** of Earth & Environmental Sciences  University of Kentucky, Lexington, KY | | | | | | | |
| 2010-11 | | | | | | | | **Mendenhall Postdoctoral Fellow**  Geology and Geophysics Science Center, U.S. Geological Survey, Menlo Park, CA  Project Title: *Linking the Yakima Fold Belt to its Forearc Analogs through the Cascade Arc: Constraints on Active Fold Belt Deformation between the Puget Lowland and Portland, Oregon*  Research Mentor: Ray Wells | | | | | | | |
| EDUCATION | | | | | | | | | | | | | | | |
| 2010 | | **Ph.D.,** Geological Sciences, University of Oregon  Dissertation: *Moletrack Scarps to Mountains: Quaternary Tectonics of the Central Alaska Range*  Committee: Ray Weldon (Chair), Joshua Roering, David Schmidt, Douglas Kennett | | | | | | | | | | | | | |
| 2004 | | **M.S.,** Geology, University of Alaska Fairbanks | | | | | | | | | | | | | |
| 2001 | | **B.S.,** Geology, University of Alaska Fairbanks (University Honors) | | | | | | | | | | | | | |
| RESEARCH AND TEACHING INTERESTS | | | | | | | | | | | | | | | |
| * Neotectonics and paleoseismology * Structural geology * High-latitude/altitude geomorphology * Quaternary geology and dating methods * Geospatial technology in the classroom and in field studies | | | | | | | | | | | | | | * 3D surface models from photogrammetry (Structure-from-Motion) * Earthquake recurrence behavior * Near-surface expression of active thrust faults * Tectonics of diffuse plate boundaries and complex fault systems * Seismic Hazards | |
| GRANTS | | | | | | | | | | | | | | | |
| Pending Grant Proposals | | | | | | | | | | | | | | | |
| 1. | *Collaborative Research: Timing of foreland propagation relative to exhumation in a high-latitude active orogen constrained by cosmogenic nuclide burial dating,* NSF-Tectonics, Co-PI Brent Goehring (Tulane), 2 years, $412,751, submitted January 12th, 2015. | | | | | | | | | | | | | | |
| Funded Proposals | | | | | | | | | | | | | | | |
| 2014 | | | | | | | | | *Collaborative Research: Completing the past 500 years of paleoearthquakes at the Elizabeth Lake paleoseismic site, Mojave section of the southern San Andreas fault,* Southern California Earthquake Center Research Grant, Co-I’s Kate Scharer (USGS), James Dolan (USC), and Ed Rhodes (UCLA), $45,000. | | | | | | |
| 2014 | | | | | | | | | *Paleoearthquake investigation of the Denali fault at the Nenana River, Alaska: Towards a 3000 year record of prehistoric earthquakes west of the 2002 rupture*, NEHRP/USGS, 1 year, $82,333. | | | | | | |
| 2014 | | | | | | | | | *Testing the viability of isochron burial dating using 3 different isotope pairs to date a full sequence of Quaternary fluvial deposits,* PRIME lab seed analysis grant proposal, $14,265. | | | | | | |
| 2013 | | | | | | | | | *Collaborative Research: A late Cenozoic record of restraining bend initiation and evolution along the Denali fault at Mount McKinley, Alaska*, NSF - Tectonics; Co-PI Jeff Benowitz (UAF), 3 years, $433,889. | | | | | | |
| 2013 | | | | | | | | | *Quaternary geologic map of the northern Healy B4 quadrangle, Alaska – Denali fault tectonic geomorphology and Nenana River incision history,* The Educational Component of the National Cooperative Geologic Mapping Program (EDMAP – USGS), $17,500. | | | | | | |
| 2013 | | | | | | | | | *Expansion of the stratigraphic and paleoearthquake record at the Elizabeth Lake paleoseismic site, central Mojave section of the San Andreas fault*, Southern California Earthquake Center Research Grant, Co-I’s Kate Scharer (USGS) and James Dolan (USC), $58,000. | | | | | | |
| 2013 | | | | | | | | | *Parks Highway MP 237 Riley Creek Bridge Replacement (contract to provide active fault parameters for a fault spanned by this bridge)*: The State of Alaska Department of Transportation and Public Facilities, $19,475 | | | | | | |
| 2012 | | | | | | | | | *Development of a new paleoseismic site at Elizabeth Lake, central Mojave section of the San Andreas fault*: Southern California Earthquake Center Research Grant, Co-PI Kate Scharer (USGS), $34,000. | | | | | | |
| 2012 | | | | | | | | | *Why is Mount McKinley [Denali] where it is?: The relationship between tectonic uplift and the evolution of a major strike-slip fault:* Summer Faculty Research Fellowship, College of Arts & Science, University of Kentucky, $7,000. | | | | | | |
| 2008-09 | | | | | | | | | Age Control for Slip Rate and Paleoearthquakes on Active Thrust Faults in the Northern Foothills Fold-Thrust Belt, Alaska Range (PI Ray Weldon) – NEHRP/USGS, $75,426 | | | | | | |
| 2006-07 | | | | | | | | | Paleoseismic and Structural Characterization of Active Thrust Faults in the Northern Foothills Fold-Thrust Belt, Alaska Range, Alaska (PI Ray Weldon) – NEHRP/USGS, $84,619 | | | | | | |
| 2006 | | | | | | | | | Geological Society of America Research Grant - $2000 | | | | | | |
| 2003 | | | | | | | | | Geophysical Institute Student Travel Grant - $400 | | | | | | |
| 2003 | | | | | | | | | University of Alaska Fairbanks Graduate School Travel Grant - $600 | | | | | | |
| 2003 | | | | | | | | | Alaska Geological Society Student Research Grant - $1200 | | | | | | |
| 2002 | | | | | | | | | Alaska Geological Society Student Research Grant - $500 | | | | | | |
| 2002 | | | | | | | | | Geological Society of America Research Grant - $2000 | | | | | | |
| Unfunded Proposals | | | | | | | | | | | | | | | |
| 2014 | | | | | | | | | *Collaborative Research: Timing of foreland propagation relative to exhumation in a high-latitude active orogen constrained by cosmogenic nuclide burial dating,* NSF-Tectonics, Co-PI Brent Goehring (Purdue), 2 years, $292,778. | | | | | | |
| 2014 | | | | | | | | | *MRI: Acquisition of an Optically Stimulated Luminescence System for Expanded Research and Learning in Earth, Environmental, Geographical and Anthropological Sciences and Engineering,* NSF; PI Kevin Yeager, Co-PIs Michael Kalinski, Daehyun Kim, Christopher Pool (All UK), 3 years, $464,119. | | | | | | |
| 2013 | | | | | | | | | *MRI: Acquisition of an Optically Stimulated Luminescence System for Expanded Research and Learning in Earth, Environmental, Geographical and Anthropological Sciences and Engineering,* NSF; PI Kevin Yeager, Co-PIs Michael Kalinski, Daehyun Kim, Christopher Pool (All UK), 3 years, $410,224. | | | | | | |
| 2013 | | | | | | | | | *Collaborative Research: Development of a terrace chronosequence on the north flank of the Alaska Range through innovative cosmogenic dating methods,* NSF – Geomorphology and Land Use Dynamics; Co-PI Brent Goehring (Purdue), 2 years, $343,149. | | | | | | |
| 2012 | | | | | | | | | *Collaborative Research: Modulation of coulomb wedge thickening vs. propagation by glacial-interglacial load fluctuations*, NSF - Tectonics; Co-PIs Lewis Owen (U. of Cincinnati) and Thomas Brackman (Northern Kentucky U.), 3 years, $541,343. | | | | | | |
| 2011 | | | | | | | | | *Collaborative Research: Determining the relationship between exhumation and structural evolution of a major restraining bend: The Denali fault at Mount McKinley, Alaska*, NSF-Tectonics; Co-PI Jeff Benowitz (U. of Alaska Fairbanks), 2 years, $424,005. | | | | | | |
| 2011 | | | | | | | | | *Unlocking secrets of earthquake recurrence on the southern San Andreas fault system*: NSF – Tectonics; Collaborative proposal with 10 PIs, 4 years, $2,467,600. | | | | | | |
| 2011 | | | | | | | | | *Paleoseismic and structural characterization of the Hines Creek/Park Road fault(?) at Denali National Park, Alaska,* NEHRP/USGS, 1 year, $87,914. | | | | | | |
| Grant Proposals In Preparation | | | | | | | | | | | | | | | |
| 1. | *Collaborative Research: Development of a terrace chronosequence on the north flank of the Alaska Range through innovative cosmogenic dating methods,* NSF – Geomorphology and Land Use Dynamics; Co-PI Brent Goehring (Tulane), 2 years, to be resubmitted mid-2015 or early 2016. | | | | | | | | | | | | | | |
| AWARDS and HONORS | | | | | | | | | | | | | | | |
| 2009 | | | | | | | | American Geophysical Union Fall Meeting Outstanding Student Paper Award | | | | | | | |
| 2005 | | | | | | | | Thayer Scholarship - $750 | | | | | | | |
| 2003-04 | | | | | | | | Arco Alaska Scholarship - $2000 | | | | | | | |
| 2002-03 | | | | | | | | Brian R. Zelenka Memorial Scholarship - $1000 | | | | | | | |
| 2002 | | | | | | | | BP-Amoco Scholarship - $6000 | | | | | | | |
| 1997-98 | | | | | | | | Chancellor’s Scholarship, University of Alaska Fairbanks – Full tuition waiver | | | | | | | |
| PUBLICATIONS | | | | | | | | | | | | | | | |
| Peer-Reviewed Manuscripts | | | | | | | | | | | | | | | |
| 2015 | | | | **Bemis, S.P.**, Weldon, R.J., and Carver, G.A., Slip partitioning along a continuously curved fault: Quaternary geologic controls on Denali fault system slip partitioning, growth of the Alaska Range, and the tectonics of south-central Alaska: Lithosphere, p. L352.1, doi: 10.1130/L352.1. (online but not assigned an issue yet) | | | | | | | | | | | |
| 2014 | | | | **Bemis, S.P.**, Micklethwaite, S., James, M.R., Turner, D., Akciz, S., Thiele, S., and Bangash, H.A., Ground-based and UAV-based photogrammetry: A multi-scale, high-resolution mapping tool for structural geology and paleoseismology, Journal of Structural Geology. doi: 10.1016/j.jsg.2014.10.007. (invited review article) | | | | | | | | | | | |
| 2012 | | | | **Bemis, S.P.**, Carver, G.A., and Koehler, R.D., The Quaternary thrust system of the northern Alaska Range: Geosphere, v. 8, n. 1, p 196-205. | | | | | | | | | | | |
| 2010 | | | | Carver, G.A., **Bemis, S.P.**, Solie, D.N., Castonguay, S., and Obermiller, K.E., Active and potentially active faults in or near the Alaska Highway corridor, Dot Lake to Tetlin Junction, Alaska: Alaska Division of Geological & Geophysical Surveys Preliminary Interpretive Report 2010-1, 42 p. | | | | | | | | | | | |
| 2010 | | | | Personius, S.F., Crone, A.J., Burns, P.A., Beget, J.E., Seitz, G.G., and **Bemis, S.P.**, Logs and geologic data from a paleoseismic investigation of the Susitna Glacier fault, central Alaska Range, Alaska: U.S. Geological Survey Scientific Investigations Map 3114, 2 sheets. <http://pubs.usgs.gov/sim/3114/>. | | | | | | | | | | | |
| 2009 | | | | Philibosian, B., Fumal, T.E., Weldon, R.J., Kendrick, K.J., Scharer, K.M., **Bemis, S.P.**, Burgette, R.J., and Wisely, B.A., Photomosaics and Logs of Trenches on the San Andreas Fault near Coachella, California: U.S. Geological Survey, 2 sheets. | | | | | | | | | | | |
| 2008 | | | | Carver, G.A., **Bemis, S.P**., Solie, D.N., and Obermiller, K.E., Active and potentially active faults in or near the Alaska Highway corridor, Delta Junction to Dot Lake, Alaska: Alaska Division of Geological & Geophysical Surveys Preliminary Interpretive Report 2008-3D, 32 p. | | | | | | | | | | | |
| 2007 | | | | **Bemis, S.P.,** and Wallace, W.K., Neotectonic framework of the north-central Alaska Range foothills, *in* Ridgway, K., Trop, J., Glen, J., and Fisher, M. eds., Tectonic Growth of a Collisional Continental Margin: Crustal Evolution of Southern Alaska, Geological Society of America Special Paper 431, p. 549-572. | | | | | | | | | | | |
| Manuscripts submitted and in review/revision (\*\*indicates student advisees) | | | | | | | | | | | | | | | |
| In revision | | | | Walker, L.A.\*\*, **Bemis, S.P.,** Mahan, S., Gray, H., and DeVore, J.,Effects of depositional history and provenance on quartz luminescence dating: a case study in the Nenana River valley, central Alaska, Quaternary International. | | | | | | | | | | | |
| Submitted | | | | Bell, S.E. and **Bemis, S.P.**, Cognitive Liberation and Hidden Destruction in Central Appalachia: Chapter 7 in S.E. Bell, *Fighting King Coal: The Barriers to Grassroots Environmental Justice Movement Participation in Central Appalachia* [Book manuscript], Cambridge University Press. | | | | | | | | | | | |
| Unpublished Reports | | | | | | | | | | | | | | | |
| 2008 | | | | Carver, G.A., and **Bemis, S.P.**, Reconnaissance of active and potentially active faults in the Parks Highway corridor between Cantwell and Rex, Alaska: Technical report for Michael Baker Jr., Inc., 40 p. | | | | | | | | | | | |
| 2013 | | | | **Bemis, S.P.,** and Federschmidt, S.\*\*, Parks Highway MP 237 Riley Creek Bridge Replacement: Investigation targeting the active fault characteristics of the Hines Creek fault: Final report prepared for the State of Alaska Department of Transportation and Public Facilities, 26 p. | | | | | | | | | | | |
| Manuscripts In Progress (\*\*indicates student advisees) | | | | | | | | | | | | | | | |
| Burkett, C.A.\*\*, **Bemis, S.P.,** and Benowitz, Jeff A., Along-fault migration of a low-angle restraining bend migration illustrated by active fault patterns and seismicity, Denali fault, Alaska. To be submitted to Tectonophysics by mid-February 2015*.* | | | | | | | | | | | | | | | |
| Wells, R.E., Blakely, R., and **Bemis, S.P.**, Dextral slip along the Gales Creek fault and northward motion of the Oregon forearc. To be submitted in February 2015 to GSA Bulletin. | | | | | | | | | | | | | | | |
| Walker, L.A.\*\*, **Bemis, S.P.,** Mahan, S., Gray, H., and DeVore, J.\*\*,Effects of depositional history and provenance on quartz luminescence dating: a case study in the Nenana River valley, central Alaska. Declined by Quaternary International for a special issue. Will be resubmitted to Quaternary Research by March 2015 | | | | | | | | | | | | | | | |
| Federschmidt, S.\*\*, and **Bemis, S.P.**, Reawakening the Hines Creek fault: Localized late Quaternary deformation associated with a fault that was declared dead, Denali National Park & Preserve, Alaska: to be submitted to the Bulletin of the Seismological Society of America in March 2015. | | | | | | | | | | | | | | | |
| **Bemis, S.P.**, Benowitz, J.A., Cooke, M., Hatem, A., and Burkett, C.A.\*\*, Migration, asymmetry, and evolution of low-angle restraining bends from analogue modeling and the Mount McKinley restraining bend, Alaska: to be submitted to Geology in April 2015. | | | | | | | | | | | | | | | |
| **Bemis, S.P.,** and Bell, S.E., Displacement in the Appalachian Coalfields: A geospatial analysis of mountaintop removal mining and the depopulation of southern West Virginia: to be submitted to Population and Environment in Summer 2015. | | | | | | | | | | | | | | | |
| **Bemis, S.P**., Scharer, K., Dolan, J., and others, The past 500 years of paleoearthquakes at Elizabeth Lake, California: Controls on recent rupture patterns for the southern San Andreas fault, submission planned for GSA Bulletin or similar journal by August 2015. | | | | | | | | | | | | | | | |
|  | | | | | | | | | | | | | | | |
| ABSTRACTS AND CONFERENCE PROCEEDINGS *(\*\*indicates student advisees)* | | | | | | | | | | | | | | | |
| 2014 | | | | | **Bemis, S.P.**, Capps, D., Cole, R.B., Benowitz, J.A., and Fitzgerald, P.G., Dinos to Denali: The record of Mesozoic through Cenozoic tectonics, sedimentation, volcanism, and geomorphology in Denali National Park and Preserve, Alaska: Geological Society of America Annual Meeting Abstracts with Programs, v. 46, n. 6, p. 242. (*invited*) | | | | | | | | | | |
| 2014 | | | | | **Bemis, S.P.**, Carlson, J.K.\*\*, and Priddy, M.S.\*\*, Rapid, high-resolution topographic data collection for neotectonic studies from photo-based 3D reconstruction techniques: Geological Society of America Annual Meeting Abstracts with Programs, v. 46, n. 6, p. 779. | | | | | | | | | | |
| 2014 | | | | | Terhune, P., Benowitz, J., **Bemis, S.P.**, Cooke, M., O’Sullivan, P.B., Burkett, C.\*\*, and Hatem, A., Extreme topographic development along the Denali fault strike-slip system, Alaska: Why is Mount McKinley so big?, Geological Society of America Annual Meeting Abstracts with Programs, v. 46, n. 6, p. 364. | | | | | | | | | | |
| 2014 | | | | | Priddy, M.S.\*\*, **Bemis, S.P.**, Carlson, J.K.\*\*, and Benowitz, J., Shortening at the western end of the Mount McKinley restraining bend: Preliminary slip rate and along strike changes associated with the Chedotlothna fault, Denali National Park & Preserve, Alaska, Geological Society of America Annual Meeting Abstracts with Programs, v. 46, n. 6, p. 778. | | | | | | | | | | |
| 2014 | | | | | **Bemis, S.P.**, Scharer, K., Dolan, J., Wespestad, C., Hatem, A., Lucas, J.\*\*, Milliner, C., and Grenader, J., The past 1600 years of paleoearthquakes at the Elizabeth Lake paleoseismic site, San Andreas fault, and tentative along-fault event correlations, 2014 Southern California Earthquake Center Annual Meeting, poster #286. | | | | | | | | | | |
| 2014 | | | | | **Bemis, S.P.**, Walker, L.A.\*\*, Federschmidt, S.\*\*, DeVore, J.R.\*\*, and Taylor, T.P.\*\*, Synthesis of results from a transect of paleoseismic investigations across the Alaska Range, Seismological Society of America Annual Meeting, Seismological Research Letters, v. 85, n. 2, p. 474. | | | | | | | | | | |
| 2014 | | | | | Benowitz, J.A., **Bemis, S.P.,** Burkett, C.A.\*\*, and O’Sullivan, P.B., Insight into the evolution of the Mount McKinley restraining bend through thermochronology: Long-term controls on slip distribution, Seismological Society of America Annual Meeting, Seismological Research Letters, v. 85, n. 2, p. 456. | | | | | | | | | | |
| 2014 | | | | | Burkett, C.A.\*\*, **Bemis, S.P.,** Benowitz, J.A., and Walker, L.A.\*\*, Quaternary crustal deformation at the apex of the Mount McKinley restraining bend of the Denali fault, Alaska, Seismological Society of America Annual Meeting, Seismological Research Letters, v. 85, n. 2, p. 456. | | | | | | | | | | |
| 2013 | | | | | **Bemis, S.P.**, Walker, L.A.\*\*, Burkett, C.A.\*\*, and DeVore, J.R.\*\*, Use of 3D models derived from handheld photography in paleoseismology, Geological Society of America Annual Meeting Abstracts with Programs, v. 45, n. 7. | | | | | | | | | | |
| 2013 | | | | | Walker, L.A.\*\*, **Bemis, S.P.**, and DeVore, J.R., The effects of global climate change on landscape evolution in the boreal forest of the central Alaska Range, Geological Society of America Annual Meeting Abstracts with Programs, v. 45, n. 7. | | | | | | | | | | |
| 2013 | | | | | **Bemis, S.P.**, Scharer, K., Dolan, J., Hatem, A., Milliner, C., Hislop, A.\*\*, Burkett, C.\*\*, Barr, M., Witkosky, R., Paleoearthquake evidence at the Elizabeth Lake paleoseismic site, Mojave section of the San Andreas fault, California, 2013 Southern California Earthquake Center Annual Meeting, poster #028. | | | | | | | | | | |
| 2013 | | | | | Federschmidt, S\*\*. and **Bemis, S.P.**, [Paleoseismic and Structural Characterization of the Hines Creek Fault at Denali National Park and Preserve, Alaska](http://www2.seismosoc.org/FMPro?-db=Abstract_Submission_13&-sortfield=PresDay&-sortorder=ascending&-sortfield=Special+Session+Name+Calc&-sortorder=ascending&-sortfield=PresTimeSort&-sortorder=ascending&-op=cn&Abstract+Title=&-op=cn&Abstract+Authors+%7C+Affiliations=federschmidt&-op=gt&PresStatus=0&-lop=and&-token.1=ShowSession&-recid=979&-format=%2Fmeetings%2F2013%2Fabstracts%2Fsessionabstractdetail.html&-lay=MtgList&-find), Seismological Society of America Annual Meeting | | | | | | | | | | |
| 2012 | | | | | **Bemis, S.P.**, and Benowitz, J.A., Reconnaissance observations of newly identified active faults and their relationship to evolution of the Mount McKinley restraining bend, Denali National Park, Alaska: Eos (Transactions of the American Geophysical Union), Abstract T11A-2550. | | | | | | | | | | |
| 2012 | | | | | Taylor, T.P.\*\*, and **Bemis, S.P.**, Paleoseismology of the Denali fault at the Nenana River, Eos (Transactions of the American Geophysical Union), Abstract T11A-2551. | | | | | | | | | | |
| 2012 | | | | | DeVore, J.R.\*\*, **Bemis, S.P.,** and Walker, L.A.\*\*,Evidence for post-26 ka displacement of the Northern Foothills thrust at the Nenana River, Alaska: Eos (Transactions of the American Geophysical Union), Abstract T11A-2552. | | | | | | | | | | |
| 2012 | | | | | Benowitz, J.A., **Bemis, S.P.**, O’Sullivan, P.B., Layer, P.W., Fitzgerald, P.G., and Perry, S., The Mount McKinley restraining bend: Denali fault, Alaska: Geological Society of America Annual Meeting Abstracts with Programs, v. 44, n. 7, p. 597 | | | | | | | | | | |
| 2012 | | | | | **Bemis, S.P.**, Scharer, K., Walker, L.\*\*, and Taylor, T.P.\*\*, New observations from the Elizabeth Lake paleoseismic site: Current results and future directions: 2012 Southern California Earthquake Center Annual Meeting, poster #145. | | | | | | | | | | |
| 2012 | | | | | **Bemis, S.P.,** and Wells, R.E., Evidence for Quaternary faulting along the Gales Creek fault zone, northwest Oregon, Seismological Society of America Annual Meeting, April 17th-19th, San Diego, CA. | | | | | | | | | | |
| 2011 | | | | | Bell, S.E. and **Bemis, S.P.**, Hidden Destruction in the Appalachian Coalfields: G.I.S. Viewshed Analysis of Mountaintop Removal Coal Mining in Boone County, West Virginia: Presentation at the 2011 American Sociological Association Annual Conference, Environment & Technology Section. Las Vegas, Nevada. August 20-23. | | | | | | | | | | |
| 2011 | | | | | **Bemis, S.P.**, Carver, G.A., and Weldon, R.J., Quaternary geologic constraints on Denali fault strain-partitioning and implications for interior Alaska tectonics: 2011 EarthScope National Meeting, Austin, TX. | | | | | | | | | | |
| 2011 | | | | | Benowitz, J.A., Layer, P., **Bemis, S.P.**, Roeske, S., University of Alaska Geochronology Facility: Ongoing collaborations on the rock record of Neogene deformation in southern Alaska: 2011 EarthScope National Meeting, Austin, TX. | | | | | | | | | | |
| 2010 | | | | | **Bemis, S.P.**, Seeing the wind through the trees: Aeolian landforms in northwest Oregon: Geological Society of America Abstracts with Programs, v. 42, n. 5, p. 282. | | | | | | | | | | |
| 2010 | | | | | Weldon, E.M., Djumabaeva, A., Abdrakhmatov, K., Weldon, R.J., and **Bemis, S.P.**, Timing and Magnitude of Late Quaternary Paleoearthquakes on the South Kochkor Thrust fault, central Tien Shan, Kyrgyz Republic, *in* Seismological Research Letters, p. 346. | | | | | | | | | | |
| 2009 | | | | | **Bemis, S.P.**, and Weldon, R.J., Progressively deformed geomorphic surfaces constrain the balance between thrust wedge thickening and foreland propagation: Geological Society of America Abstracts with Programs, v. 41, n. 7, p. 184. | | | | | | | | | | |
| 2009 | | | | | **Bemis, S.P.**, and Weldon, R.J., Transpressive deformation along a continuous curve: Slip-partitioning on the Denali Fault and Quaternary growth of the Alaska Range: Eos (Transactions of the American Geophysical Union), v. 90, n. 52, Abstract T12C-06. | | | | | | | | | | |
| 2008 | | | | | Carver, G.A., **Bemis, S.P.**, Solie, D.N., Obermiller, K.E., and Weldon, R.J., Active faults in or near the proposed Trans-Alaska gas pipeline corridor, east-central Alaska (poster): Seismological Research Letters, v. 79, n. 2. | | | | | | | | | | |
| 2006 | | | | | **Bemis, S.P.**, Weldon, R.J., and Benowitz, J.A., Does hinterland height affect thrust belt width?: Eos Transactions American Geophysical Union v. 87, n. 52, Fall Meeting Supplement, Abstract T44A-03. | | | | | | | | | | |
| 2006 | | | | | Carver, G.A., Plafker, G., Metz, M., Cluff, L., **Bemis, S.P**., Roddick, J., Redington, J., and Sorenson, S., Late Quaternary growth of thrust faults and associated folds in the eastern part of the Northern Foothills Fold and Thrust Belt, central Alaska Range, Alaska, AGU Chapman Conference on Active Tectonics and Seismic Potential of Alaska, Girdwood, Alaska. | | | | | | | | | | |
| 2005 | | | | | **Bemis, S.P.**, Weldon, R., and Burns, P., Progress in characterizing faults along the northern flank of the central Alaska Range: Geological Society of America Abstracts with Programs, v. 37, no. 7, p. 78. | | | | | | | | | | |
| 2005 | | | | | Schwartz, D.P., Haeussler, P.J., Matmon, A., Dawson, T.E., Seitz, G., Stenner, H., **Bemis, S.**, Molhoek, E., Sherrod, B., Crone, A.J., Personius, S., Craw, P., and Beget, J., Earthquake geology of the Denali Fault System, Alaska: Proceedings of the 5th U.S.-Japan Natural Resources Meeting and Parkfield, California Fieldtrip, USGS Open-File Report 2005-1131, 82 p. | | | | | | | | | | |
| 2003 | | | | | **Bemis, S.P**., and Wallace, W.K., Active structures in the foothills of the north-central Alaska Range: Eos Transactions American Geophysical Union, Fall Meeting Supplement, v. 84, n. 46, Abstract S12A-0380. | | | | | | | | | | |
| 2003 | | | | | **Bemis, S.P**., Implications for the active tectonics of the north-central Alaska Range foothills from bedrock structure and river terraces: Alaska Geological Society Geology Symposium, Fairbanks, Alaska. | | | | | | | | | | |
| PROFESSIONAL MEETING ORGANIZING | | | | | | | | | | | | | | | |
| 2014 | | | | | Session Co-Organizer with Jeff Benowitz and Michele Cooke, “Geometric Complexities Along Strike-Slip Systems: New Insights on Seismic Hazards, Earthquake Behavior, and Fault System Evolution”, Seismological Society of America Annual Meeting, April 30th – May 2nd, 2014. | | | | | | | | | | |
| 2012 | | | | | Session Co-Organizer with Sarah Roeske, Ken Ridgway, and Jeff Benowitz, “Before and after Subduction: Downgoing Plate to Inboard Strike-slip Faulting” American Geophysical Union Fall Meeting, San Francisco, CA, December 3-7, 2012. | | | | | | | | | | |
| INVITED PRESENTATIONS/SEMINARS/COLLOQUIA | | | | | | | | | | | | | | | |
| 2014 | | | | | | “Quaternary tectonics of the Denali fault/Alaska Range system and the uplift of Mount McKinley”, Tulane University | | | | | | | | | |
| 2014 | | | | | | “Quaternary geologic controls on Denali fault slip-partitioning and the uplift of Mount McKinley”, West Virginia University | | | | | | | | | |
| 2014 | | | | | | “Quaternary geologic controls on Denali fault strain-partitioning and the uplift of Mount McKinley”, Indiana University | | | | | | | | | |
| 2013 | | | | | | “A broadly curved fault with bends: Quaternary geologic constraints on Denali fault strain-paritioning and the rise of the Alaska Range”, University of Cincinnati | | | | | | | | | |
| 2012 | | | | | | “Active faults of the Alaska Range: Geologic constraints on Denali fault strain-partitioning and the growth of Mount McKinley”, Ohio University | | | | | | | | | |
| 2012 | | | | | | “Strain-partitioning across the Denali fault constrained by Quaternary growth of the Alaska Range: Transpressive deformation along a curved fault”, Virginia Polytechnic Institute and State University | | | | | | | | | |
| 2012 | | | | | | “Strain-partitioning across the Denali fault constrained by Quaternary growth of the Alaska Range: Transpressive deformation along a curved fault”, Purdue University. | | | | | | | | | |
| 2011 | | | | | | “Informing earthquake geology through seismology – and the other way around”, Mini-talk presented at the Opportunities for EarthScope Science in Alaska in Anticipation of USArray workshop, Austin, TX, May 2011. | | | | | | | | | |
| 2011 | | | | | | “Quaternary Geologic Constraints on Denali Fault Strain-Partitioning and Implications for Interior Alaska Tectonics” - University of California – Davis, May 2011 | | | | | | | | | |
| 2007 | | | | | | “Recent and upcoming work on the neotectonics of the central Alaska Range, southern San Andreas fault, and the Tien Shan of Kyrgyzstan” presented at the Alaska Division of Geological and Geophysical Surveys, Fairbanks, Alaska, April 2007. | | | | | | | | | |
| 2006 | | | | | | **Bemis, S.P**., Wallace, W.K., and Weldon, R.J., Overview of the Quaternary structure and deformation of the Northern Foothills Fold and Thrust Belt, central Alaska Range, Alaska: AGU Chapman Conference: Active Tectonics and Seismic Potential of Alaska, Girdwood, Alaska, May 2006. | | | | | | | | | |
| 2005 | | | | | | “Looking for active faults in the northern Alaska Range” presented at the USGS Seismic Hazard Assessment for Alaska workshop, Fairbanks, Alaska, May 2005. | | | | | | | | | |
| TEACHING EXPERIENCE | | | | | | | | | | | | | | | |
| Graduate Courses | | | | | | | | | | | | | | | |
| Spring 2014  Fall 2013 | | | | | | | | | | | | | Assisted with EES 480/730 – Basin and Range Field Geology  Tectonics | | |
| Fall 2011 | | | | | | | | | | | | | Advanced Topics in Geology: Earthquake Geology; Current Topics in Geology | | |
| Undergraduate Courses | | | | | | | | | | | | | | | |
| Spring 2014 and 2015 | | | | | | | | | | | | | Fundamentals of Geology II (co-taught with Dr. Kent Ratajeski) | | |
| Spring 2012 - 2015 | | | | | | | | | | | | | Structural Geology | | |
| Spring 2013 | | | | | | | | | | | | | Earthquakes and Volcanoes | | |
| Fall 2011 | | | | | | | | | | | | | Tectonics (cross-listed as Earthquake Geology) | | |
| Labs taught during graduate school | | | | | | | | | | | | | | | |
| 2004–09 | | | | | | | | | | **Graduate Teaching Fellow, Department of Geological Sciences, University of Oregon** | | | | | |
|  | | | | | | | | | | | | Neotectonics and Quaternary Geology (twice) | | | |
|  | | | | | | | | | | | | Field Methods | | | |
|  | | | | | | | | | | | | Field Geology (six-week Summer Field Camp, Central Oregon and Montana) | | | |
|  | | | | | | | | | | | | Earth Resources and the Environment | | | |
|  | | | | | | | | | | | | Environmental Geology and Landscape Development | | | |
|  | | | | | | | | | | | | Earth Materials | | | |
| 2001-04 | | | | | | | | | | **Teaching Assistant, Department of Geology, University of Alaska Fairbanks** | | | | | |
|  | | | | | | | | | | | | Dynamic Earth (5 sections) | | | |
|  | | | | | | | | | | | | Paleobiology and Paleontology | | | |
|  | | | | | | | | | | | | Structural Geology | | | |
|  | | | | | | | | | | | | Field and Computer Methods in the Geosciences | | | |
|  | | | | | | | | | | | | Photogeology | | | |
|  | | | | | | | | | | | | Field Methods in Geology (six-week Summer Field Camp, Denali National Park and Talkeetna Mountains, Alaska) | | | |
| STUDENT MENTORING | | | | | | | | | | | | | | | |
| Graduate Student Advising | | | | | | | | | | | | | | | |
|  | | | Anne Fendick, M.S. student *(expected completion Spring 2016)*  Kade Carlson, M.S. student *(expected completion Spring 2016)*  Corey Burkett, M.S. student – graduated December 2014  Ann Hislop, Ph.D. student *(co-advised; expected completion 2017)*  Laurel Walker, M.S. student - graduated May 2014 | | | | | | | | | | | | |
|  | | | Sara Federschmidt, M.S. student - finished May 2014 | | | | | | | | | | | | |
| Graduate Student Committees | | | | | | | | | | | | | | | |
|  | | | Wei Ji, M.S. student  James McCulla, M.S. student  Leah Newman, M.S. student  Emma Larkin, M.S. student  Clayton Brengman, M.S. student – graduated Summer 2014  Lucas Rohrer, M.S. student  Dan Spaulding, M.S. student – graduated Spring 2014  Stephen Prosser, M.S. student | | | | | | | | | | | | |
|  | | | Phillip Wolfe, M.S. student – graduated Spring 2014 | | | | | | | | | | | | |
|  | | | Gabriel RiCharde, M.S. student – graduated Fall 2012 | | | | | | | | | | | | |
|  | | | Susan Lieb, M.S. student – graduated Fall 2012 | | | | | | | | | | | | |
| External Graduate Student Committees | | | | | | | | | | | | | | | |
| |  |  | | --- | --- | |  | Michael Hopkins, Ph.D. student at Tulane University *(expected completion Fall 2015)* | | | | | | | | | | | | | | | | |
| Undergraduate Student Research Mentorship | | | | | | | | | | | | | | | |
|  | | | Sean Rohrer, B.S. student *(10/2014 to present; cosmogenic nuclides; measuring tectonic strain accumulation from historical air photos using photo-based 3D reconstructions)*  Michael Priddy, B.S. student *(05/2014 to present; active deformation* *in Denali NP&P)*  Joseph Lucas, B.S. student *(01/2014 to 7/2014; GIS; paleoseismology on SAF)*  Joshua DeVore, B.S. student *(paleoseismology and Quaternary mapping in Alaska Range; graduated Dec. 2013)*  Jennifer Whitney, B.S. student *(cosmogenic dating in Alaska; left school for personal reasons Dec. 2013)*  Patrick Taylor, B.S. student *(paleoseismology of the Denali fault; graduated May 2013)* | | | | | | | | | | | | |
| OTHER WORK EXPERIENCE | | | | | | | | | | | | | | | |
| 2007-09 | | | | | | | **Engineering Geology Intern, Alaska Division of Geological and Geophysical Surveys,** Fairbanks, Alaska  Active faulting investigations crew, Alaska Highway proposed natural gas pipeline corridor project. Duties entailed the identification and characterization of possible active faults through standard paleoseismic and neotectonic techniques, subsequent analysis/interpretation, and report preparation. | | | | | | | | |
| 2008-09 | | | | | | | **Student Support Technician, Michael Baker Jr., Inc.,** Anchorage, Alaska  Geotechnical reconnaissance for potential earthquake hazards through the Alaska Range for a proposed natural gas pipeline route. | | | | | | | | |
| 2004 | | | | | | | **Engineering Geology Intern, Alaska Division of Geological and Geophysical Surveys**, Fairbanks, Alaska  Denali, Totschunda, and Susitna Glacier Thrust fault paleoseismic and slip rate investigations field crew. Collaboration with the USGS to investigate the recent paleoseismic history of the faults that ruptured in the 2002 Denali Fault earthquake. The work involved hand-excavating, preparing, logging, and radiocarbon sampling of paleoseismic trenches in remote locations throughout the east-central Alaska Range. | | | | | | | | |
| WORKSHOPS AND SHORT COURSES ATTENDED | | | | | | | | | | | | | | | |
| Sept. 2012 | | | | | | 2012 Southern California Earthquake Center Southern San Andreas Fault Evaluation (SoSAFE) Fieldshop – exploration of mapping techniques, maps, quality rankings that affect geomorphic fault offset measurements, Palm Springs and Littlerock, CA. | | | | | | | | | |
| Sept. 2011 | | | | | | GeoPRISMS – EarthScope Planning Workshop for the Alaska Primary Site, Portland, OR. | | | | | | | | | |
| June 2011 | | | | | | Workshop for Early Career Geoscience Faculty: Teaching, Research, and Managing Your Career, sponsored by National Association of Geoscience Teachers, Williamsburg, VA. | | | | | | | | | |
| May 2011 | | | | | | Opportunities for EarthScope Science in Alaska in Anticipation of USArray Workshop, held in conjunction with the EarthScope National Meeting, Austin, TX. | | | | | | | | | |
| Oct. 2010 | | | | | | TLS: Terrestrial Laser Scanning (Ground-Based LiDAR) Methods and Applications in Geologic Research and Education, Geological Society of America Annual Meeting Short Course, Boulder, CO. | | | | | | | | | |
| Oct. 2005 | | | | | | Thermochronology, short course sponsored by the Mineralogical Society of America at the Geological Society of America Annual Meeting, Snowbird, UT. | | | | | | | | | |
| PRIMARY FIELD RESEARCH EXPERIENCE | | | | | | | | | | | | | | | |
| * Extensive studies of the structural geology, geomorphology, Quaternary geology, and Cenozoic tectonics of the Alaska Range orogen and the greater central Alaska region. * Geomorphology and Quaternary fault potential of northwest Oregon and southwest Washington * Paleoseismic investigations on the San Andreas fault in southern California * Detailed mapping of late Cenozoic deformation associated with thrust faults in the Tien Shan of Kyrgyzstan * Paleoseismic investigations on normal faults in central Oregon | | | | | | | | | | | | | | | |
| TECHNICAL EXPERIENCE | | | | | | | | | | | | | | | |
| * Collection and pretreatment of organic samples for radiocarbon analysis * Collection and preparation of samples for a variety of terrestrial cosmogenic nuclide surface exposure and burial methods. * Photo-based 3D reconstruction techniques (often referred to as ‘structure-from-motion’ or SfM) using Agisoft Photoscan Pro * ArcGIS 10, Trimble Pathfinder Office, Adobe Creative Suite, CloudCompare * Collection of digital field mapping data * Trimble survey and mapping GPS equipment | | | | | | | | | | | | | | | |
| PROFESSIONAL AFFILIATIONS | | | | | | | | | | | | | | | |
| 2003-present | | | | | | | | | | | American Geophysical Union | | | | |
| 2003-present | | | | | | | | | | | Alaska Geological Society | | | | |
| 2004-present | | | | | | | | | | | Geological Society of America | | | | |
| 2006-present | | | | | | | | | | | Seismological Society of America | | | | |
| SERVICE | | | | | | | | | | | | | | | |
| Departmental | | | | | | | | | | | | | | | |
| 2012-present | | | | | | | | | | | Organizing efforts to incorporate geospatial methods instruction and implementation in the Earth & Environmental Sciences curriculum | | | | |
| 2012-2014 | | | | | | | | | | | Personnel and Budget Committee | | | | |
| 2011-present | | | | | | | | | | | Graduate Admissions Committee | | | | |
| 2011-present | | | | | | | | | | | Undergraduate Scholarships and Awards Committee | | | | |
| 2011-present | | | | | | | | | | | Recruitment Committee *(chair since Fall 2013, hiatus during Fall 2014)* | | | | |
| Fall 2011 | | | | | | | | | | | Rast-Holbrook Seminar Series coordinator | | | | |
| 2007-09 | | | | | | | | | | | Department of Geological Sciences Steward, Graduate Teaching Fellows Federation, University of Oregon. | | | | |
| 2006-07 | | | | | | | | | | | Graduate Student Representative, Department of Geological Sciences, University of Oregon. | | | | |
| University | | | | | | | | | | | | | | | |
| 2013-2014 | | | | | | | | | | | Faculty advisor to the UK student branch of the Kentuckians for the Commonwealth | | | | |
| 2011-2013 | | | | | | | | | | | University of Kentucky Campus Sustainability Initiative, Dept. of Earth & Environmental Sciences Ambassador | | | | |
| Nov. 2011 | | | | | | | | | | | Invited lecture on preparing posters for scientific presentations, Dept. of Sociology | | | | |
| 2007 | | | | | | | | | | | Graduate Teaching Fellows Federation Delegate, American Federation of Teachers-Oregon Convention, Sunriver, Oregon. | | | | |
| Professional | | | | | | | | | | | | | | | |
| 2014 | | | | | | | National Council on Undergraduate Research – conference abstract reviewer (Geography/Earth Sciences/Environmental Sciences) | | | | | | | | |
| 2013 | | | | | | | NSF – Tectonics Review Panel member | | | | | | | | |
| 2011 | | | | | | | Field Trip Leader, *Denali Field Trip: Denali National Park and the central Alaska Range: Cenozoic geology, neotectonics, and geomorphology*, 3 day field trip for the Association of Environmental and Engineering Geologists Meeting, Sept. 18-20, Anchorage, Alaska. | | | | | | | | |
| 2010 | | | | | | | USGS/NEHRP Review Panel member | | | | | | | | |
| 2005 | | | | | | | Co-Trip Leader, *Neotectonics of the Central Alaska Range*, Friends of the Pleistocene-Alaska Cell, September 3-5. | | | | | | | | |
| Manuscript Reviews | | | | | | | Bulletin of the Seismological Society of America, Tectonics, Earth Surface Processes and Landforms, USGS publications, Alaska Division of Geological and Geophysical Surveys reports | | | | | | | | |
| Grant Reviews | | | | | | | USGS/NEHRP, NSF - Tectonics, NSF – Sedimentary Geology & Paleobiology, NSF – OISES-IRES | | | | | | | | |
| Community | | | | | | | | | | | | | | | |
| 2011 | | | | | | | Membership Recruitment and Fundraising, Kentuckians for the Commonwealth (state-wide social justice organization) | | | | | | | | |