Megan L. Anderson

Assistant Professor

Curriculum Vitae

CONTACT INFORMATION

Department of Geology
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EDUCATION

2005	Ph. D., concentration in Geophysics, Department of Geosciences, University of Arizona, Tucson, AZ Dissertation title: Seismic anisotropy, intermediate-depth earthquakes, and mantle flow in the Chile-Argentina flat-slab subduction zone
1998	B.A., Geology Department, Carleton College, Northfield, MN Thesis title: The Crandall Conglomerate: a fluvial deposit, northwestern Wyoming

RESEARCH INTERESTS

Through my research experiences I have developed a variety of interests in structure, kinematics, and dynamics of active tectonic regions from the upper mantle through the crust, particularly large-scale transform faults and subduction zones. My activities center around quantitative assessment of structural and kinematic tectonic models using many types of geophysical data.

RESEARCH PROJECTS

2009-present **Collaborative Research: Formation of basement-involved foreland arches: An integrated EarthScope experiment**, NSF EarthScope Research Project, Bighorn Mountain region, Wyoming.

* I am in charge of implementing a portion of the work proposed: installing and maintaining an array of 27 broadband seismic stations across the Bighorn Mountain Range, in closest collaboration with Anne Sheehan of the University of Colorado. I will take an assisting role in the implementation of other portions of the seismic work for this project.
* This work is focused on building a high resolution structural picture of the Bighorn Mountain Range, one of the largest of a series of

~Eocene age uplifts in the Utah-Wyoming-Colorado region of the western U.S. This picture will be constructed by integrating a series of seismic analyses designed to image, at high resolution, many levels of the crust and mantle with structural studies of the upper crust. This study has implications for our understanding of how basement-involved arches are formed both in the Western U.S. and other places in the world, such as Argentina, and for our fundamental understanding of the rheology of the Earth's lithosphere.

* Students I advise on this project will be investigating such topics as seismic anisotropy with shear wave splitting analysis, improving local structure definition by applying gravity and/or geomagnetic data analysis and modeling, and potentially range-scale isostatic/flexural modeling of gravity anomalies constrained by seismic data.

2008-present **Collaborative Research: Structure of the Nazca slab and Sierras Pampeanas**, NSF Geophysics Research Project, Cordoba, Argentina.

* Implementing an array of 12 broadband seismic stations across the Sierras de Cordoba, in collaboration with Hersh Gilbert of Purdue University. The field work associated with deploying and maintaining the seismometers is split nearly equally between both PI's.
* This project is focused on identifying the mechanisms through which forces could be transferred from the descending Nazca plate up into the overriding South American lithosphere as well as the dynamics of the sinking plate and its interaction with the surrounding mantle.
* My students will be conducting shear-wave splitting analysis to better understand mantle flow with respect to the subducting plate.

2007-present **Rift Geometry of the Sunshine Basin**, Student-supported research project, Colorado College, CO.

* Supporting students in class-based and small-scale independent study geophysical experiments designed to image the structure of a small part of the Rio Grande Rift.
* Collaborating with USGS scientists to contribute collected gravity data to other projects and investigations.
* Applying models developed with geophysical data to constrain fault ages and offsets; comparing fault geometries revealed through geophysics to surface fault locations and ages from active mapping studies by USGS scientists.

May-Sept., 2007 **Technology Assistance with Implementation and Operation of Transportable Array Element of USArray and EarthScope**, Student-supported siting of USArray seismic stations in Colorado.

* Supervised 6 students from Colorado College and other universities in Colorado and Utah in scouting and documenting sites for 53

seismic stations to be located in the state of Colorado for the USArray project.
* Participated in a week-long workshop designed to teach the students about seismology, EarthScope, USArray, scientific goals of USArray, and seismic station siting parameters.
* Organized a learning-enrichment field trip for participating students to visit the National Earthquake Information Center in Golden, CO.

2005-present **Seismic Hazards of the Puget Lowland**, Postdoctoral research project, U. S. Geological Survey, Menlo Park, CA.
* Collecting new gravity data to fill in gaps data coverage in the Puget lowland; supporting student research projects designed to collect and apply new gravity data to better understand the structure.
* Assisting scientists from the Washington State Department of Natural Resources in quadrangle mapping projects in the eastern portion of the Puget Sound area. My role in producing the geologic maps from this effort is to interpret aeromagnetic and isostatic gravity maps for the quadrangle as well as quantitatively model both datasets along cross-section lines. The purpose of this work is to inform the geological mapping with geophysical constraints and in particular, the development of the geological cross-sections. I write the potential field geophysical interpretations for the report accompanying each map.
* Quantitatively assessed the kinematics of existing 2-D models of the Seattle fault zone based on all available geophysical datasets.
* Creating a structurally consistent 2-D model (3-D planned) of the crustal thrust fault system in the Puget Lowland, based on reflection seismic, tomographic, seismicity, gravity, magnetic, geologic, and geomorphic data.
* Working towards a regional structural interpretation of the fault system including potential changes to known seismic hazard.

2004-2008 **Southern California GPS Network Development**, collaborative project with Rick Bennett at the University of Arizona
* Assisting development of new projects that will attempt to constrain the temporal development of faults associated with the San Andreas fault zone. We are specifically attempting to better resolve the kinematics of the trajectory of the Eastern California Shear Zone through the western part of the park.
* Installed new campaign-style GPS network in Joshua Tree National Park (Joshua Tree Integrative Geodetic Network) that integrates with Plate Boundary Observatory stations within the park. My students and I have participated in roughly half the field work efforts that have gone into installing and measuring the network.

2000- **Graduate Research Project**, University of Arizona, Tucson, AZ.

2005 * Assisted and lead field work in Chile and Argentina, maintaining PASSCAL broadband seismic network (2001)-- http://www.geo.arizona.edu/CHARGE/.
* Created local Passcal seismic database at UA.
* Located earthquakes and calculated focal mechanisms with first motions.
* Analyzed local and teleseismic earthquakes for evidence of anisotropy in the lithosphere and asthenosphere and applied this to the broader problem of mantle flow in subduction zones.

2003 **Seismology Summer Intern**, Lawrence Livermore National Laboratory, Livermore, CA.
* Utilized scripting languages and MatLab to develop a set of location accuracy statistics for clusters of test events in the Nevada Test Site using GMEL relocation code.
* Interpreted empirical quantification of location error in terms of the utility of multiple event location algorithms for accurate event locations.

1998-2000 **Geophysics Intern,** U. S. Geological Survey, Menlo Park, CA.
* Lead and assisted field work collecting gravity data in Southern California and Nevada.
* Processed data into isostatic gravity maps.
* Analyzed isostatic gravity and aeromagnetic maps in conjunction with geologic data to estimate fault locations and produce 2-D and 3-D models related to pull-apart basin development along the San Jacinto fault, CA.

1997-1998 **Senior Thesis Research Project,** Greater Yellowstone Area, Wyoming.
* Proposed and implemented a research project plan to study a sedimentary conglomerate deposit.
* Characterized stratigraphy of the Crandall conglomerate, interpreted the paleotectonic setting.

1996-1997 **Keck Consortium Sophomore Research Project,** Williams College, Massachusetts.
* Mapped surficial geology and made cross sections of an area of the Berkshire Mountains.
* Presented paper at the Keck Student Symposium, Spring 1997.

RESEARCH STUDENTS ADVISED (Geo = Geology major; Phys = Physics major)

Felicity Wood (Geo) 2008-10 Independent Project: Seismic Anisotropy of the South American subduction zone

Dan Woodell (Geo)	2007-09	Thesis: Analog Modeling of the Juan Fernández Ridge, Central Chile, and Implications for Flat-Slab Subduction Dynamics
Jeff Lyon (Phys)	2007-08	Senior Project: Gravity physical theory and application to study of the Rio Grande Rift
Melinda Solomon (Geo)	2007-08	Independent Research: Anisotropy of central South America: A shear wave splitting analysis of a tectonically stable region and its implications for lithosphere-asthenosphere interaction on the continental scale
Wiley Skewes (Geo)	2007-08	Independent Project: The Seattle Fault
Jon Rotzein (Geo)	2007	Thesis: Magnetic Exploration and Modeling of the Thumb, Navajo Volcanic Field Research Project: New Constraints on Rift-Associated Faulting in Sunshine Valley, Northern new Mexico

AWARDS AND HONORS

2009	**Exceptional Merit**, annual Colorado College employment review
2005	ChevronTexaco Geology Summer **Fellowship**
2005	Honorable mention **AGU MARGINS** Prize
2004	**UA College of Science** Outstanding TA
2004	**Outstanding TA** in Geosciences
2003, 2004	**Best Talk** in Geophysics, Geodaze Student Colloquium
2003-2004	**WAIIME** Geosciences Scholarship
2001-2005	**NSF** Graduate Fellow
2000	**Geosciences Dept. Fellowship**, University of Arizona
1998	Graduated **magna cum laude**
Spring, 1998	Departmental **distinction** on undergraduate thesis
February 1998	**Sigma Xi** guest lecturer in geology
1997-1998	**Duncan Stewart Fellowship** in Geology, Carleton College

PROFESSIONAL AFFILIATIONS

American Geophysical Union (1999-present)
Geological Society of America (1998-present)
Sigma Xi (1998-present)
Phi Beta Kappa (1998-present)

TEACHING EXPERIENCE

2007-present **Assistant Professor**, Colorado College
* Teaching Geology Department classes in applied geophysics, regional geology, tectonics, geologic hazards and introductory geology; Teaching cross disciplinary classes in Math/Geo and planned classes in Literature/Geo
* Advising students with thesis and independent research projects.

2004 **Organized Departmental Seminar**, University of Arizona.
* Instituted a departmental seminar on the topic of subduction.
* Helped professors with organization and scouted recent literature.

2003-2004 **Teaching Assistant,** University of Arizona.
* Assisted classes in Natural Sciences 101 (student performance review rating 4.16/5.00) and Introductory Geophysics (student performance review rating 4.53/5.00).
* Taught discussion/lab sessions, conducted review sessions.
* Developed new lab materials.
* Graded assignments.
* Discussed questions and concepts one-on one with students through office hours and student appointments.

1996-1998 **Lab Assistant and Tutor,** Carleton College.
* Assisted classes in Sedimentary Geology, Tectonics, and Calculus.
* Discussed questions and concepts with students, graded assignments, prepared labs, conducted review sessions.

CLASSES TAUGHT

GY101: Catastrophic Geology
Description: An examination of the nature and causes of earthquakes, volcanoes, and floods through in-depth study of several seminal hazardous events and regions. Unique and occasionally conflicting perspectives from historic/pre-historic records, modern science and present/future economics and politics underscore the slow progress in our understanding of these catastrophes. The events will also be examined within the global framework of plate tectonic theory to enhance understanding of dynamic earth processes.

GY130 Introduction to Geology
Spring, 2007-08
Description: Extended 2-block course with topics similar to GY140, Physical Geology.

GY140 Physical Geology
Spring, 2006-07; Fall, 2007-08; Spring 2008-09
Description: The fundamentals of physical geology: igneous, metamorphic, and sedimentary rocks; basic mineralogy; structural geology; mapping; and examination of local stratigraphic units.

NS160 FYE: Mathematics and Geology of the Great American Desert

Fall, 2008-09

Description: A two block First-Year-Experience (freshman) course where the central goal is to educate students about the role of mathematics and geology in understanding the development of the Western United States, both naturally and via human intervention, including what this means for our future in the West. Covers calculus principles applied to geology and mathematical modeling of geologic problems utilizing real data.

GY210: Geologic Methods and Rocky Mountain Evolution

Description: Foundational methods in geology, taught through field studies that examine the regional geology and tectonic evolution of the Rocky Mountain Region.

GY240 Tectonics

Fall, 2008-09

Description: History of Plate Tectonics and its formulation, paleomagnetic record of ocean crust, geodynamics and tectonic theory, active tectonics, current frontiers.

GY250 Geologic Evolution of South America

Spring 2006-07

Description: An examination of the tectonic geology of South America from the assembly of its interior cratons to present day volcanism and subduction processes along its Pacific coast. Seminal scientific literature serves as a basis for discussion of key concepts in the tectonic evolution of the continent. Students also read selections that follow Darwin's exploration of the continent as a naturalist aboard the British vessel the "Beagle" as they explore the continent from the perspective of modern science.

GY370 Introductory Geophysics

Fall, 2007-08; Spring 2008-09

Description: Applications of physics to the study of Earth structure from crust to core. Seismology, magnetics, gravity, and geodesy. Explores history of Earth's formation, current geologic and tectonic problems, and uniqueness of interpretation issues.

GY370 Applied Potential Field Geophysics

Spring, 2006-07

Description: Students investigate a specific tectonic problem through the use of geomagnetism and gravity to define buried Earth structure. The course covers in-depth theory, data gathering and analysis, and structural model creation for potential field data. Problems focus on active or recently active areas such as the San Luis basin (Rio Grande Rift) and the Spanish Peaks volcanic complex.

GY345 Regional Geology (Geology of the Baja, California Region)

Spring, 2007-08

Description: An in-depth study of an area of the earth with students preparing papers on various aspects of the region. Investigation of geologic exposures representing the tectonic development of the Western U.S. from a subduction zone to transform boundary traversing a segment of the continental margin from Death Valley, NV to Baja, Mexico. Culminates in a final project requiring students to synthesize Western U.S. tectonics.

GY405 Research Topics
Fall, 2007-2008; Spring 2008-09
Description: Student participation in original research. The particular topic, chosen in conjunction with a faculty member, to be included in the course title whenever offered.

PROFESSIONAL SERVICE

Colorado College

2009	College Committee: Natural Sciences Division Executive Committee, Committee on Instruction NS Representative
2007, 2008	College Committee: Design Review Board
2007, 2008, 2009	Geology Department: Seminar Series Organizer
September, 2007	Panelist, Fall College Open House
September, 2008	Panelist, FYE Retreat

Professional Societies

AGU Session Convener 2006
AGU Session Chair 2003
Reviews:
- Geophysical Research Letters (3)
- Geophysical Journal International (1)
- Lithosphere (1)
- Nature (1)
- NSF Grants (1: Geophysics; 1: International Programs)

University of Arizona

Search Committee Graduate Representative 2004
Arizona Geophysical Society Treasurer
Geodaze Student Symposium Committee (3 years)
Seismic Site Building (UA/ASU Local Seismic Network)

U.S. Geological Survey

USGS Internal Review (3) Ask-A-Geologist Volunteer

GEOPHYSICAL FIELD EXPERIENCE

2009-2010	PI for field deployment and site servicing of 27 broadband seismic stations in the Bighorn Mountain region, WY.
2008-2010	PI for field deployment and site servicing of 12 broadband seismic stations in the Cordoba, Argentina region.
Ongoing	Advised small student field projects in refraction seismology, gravity, and ground magnetics for the Introduction to Geophysics class.
Summer, 2007	PI for the portion of the USArray site identification in Colorado.
Spring, 2007	Relative gravity measurement (~100 sites), reduction and mapping for the Sunshine Valley, NM.

2006-present	Relative gravity measurement (>100 sites), reduction, and mapping for portions of the Seattle Fault in the Puget Lowland region, WA.
2005-2008	Campaign GPS site installation and field deployment of instruments in Joshua Tree National Park (JOIGN network).
2000-2002	Field deployment and site servicing/data retrieval and archiving for CHARGE Passcal broadband array in Chile and Argentina.
1998-2000	Relative gravity measurement (~300 sites), reduction, and mapping for portions of the San Jacinto Fault, in San Bernardino, California.

PROPOSALS

2008 Collaborative Research: Formation of basement-involved foreland arches: An integrated EarthScope experiment
NSF EarthScope Proposal
Collaborators: Eric Erslev (Co State U.), Anne Sheehan (CU), Kate Miller (UTEP), Christine Siddoway (CC), Megan Anderson (CC)
Awarded: May, 2009

2007 Collaborative Research: Structure of the Nazca slab and Sierras Pampeanas
NSF EAR-Geophysics Proposal
Collaborators: Hersh Gilbert (Purdue), Megan L. Anderson (CC)
Awarded: January, 2008

2005 Quantitative Structural Analysis of the Seattle Fault: Three-Dimensional Constraints on Thrust Fault Structure, Kinematics, and Seismic Hazard
USGS Mendenhall Postdoctoral Program Proposal
Advisors: Tom Brocher, Rick Blakely, Ralph Haugerud, Tom Pratt, and Ray Wells
Proposal Accepted, January 2005

2004 Monitoring evolution of the Pacific-North America plate boundary through continuous GPS observations in Joshua Tree National Park
Site permitting proposal to the National Park Service
Collaborators: Megan L. Anderson, Richard A. Bennett, Jonathan C. Matti
Permitted, April, 2005 (presently active permit)

2004 Proposed PBO site relocations targeting lithospheric dynamics in southern California
Proposal to the PBO Working Group
Collaborators: Rick Bennett, Megan Anderson, Jonathan Matti
Several site locations accepted

2000 Assessing seismic hazard related to the San Andreas fault zone in San Bernardino, California
NSF Graduate Research Fellowship Proposal
Awarded

MENTORS AND COLLABORATORS

Hersh Gilbert	Purdue University	Collaborator
Lara Wagner	Univ. North Carolina	Collaborator
Ben Dreneth	USGS	Collaborator
Cal Ruleman	USGS	Collaborator
Joe Dragovich	Wash. DNR	Collaborator
Tien Grauch	USGS	Collaborator
Rick Blakely	USGS	Postdoc Research Advisor
Tom Pratt	USGS	Postdoc Research Advisor
Ray Wells	USGS	Postdoc Research Advisor
Tom Brocher	USGS	Postdoc Research Advisor
Ralph Haugerud	USGS	Postdoc Research Advisor
George Zandt	University of Arizona	Ph.D. Thesis advisor
Sue Beck	University of Arizona	P.I. on the CHARGE project
Patricia Alvarado	University of Arizona	Collaborator-Subd. Zone Seismicity
Steve Myers	LLNL	Mentor
Matt Fouch	Arizona State University	Mentor-shear wave splitting
Rick Bennett	University of Arizona	Collaborator-S. Calif. tectonics
Jonathan Matti	USGS	Collaborator-S. Calif. tectonics
Bob Jachens	USGS	Mentor
Victoria Langenheim	USGS	Mentor
Clinton Cowan	Carleton College	Undergraduate thesis advisor

PUBLIC TALKS

2008 Colorado College Faculty Lunch Series: Earthquakes and Tsunamis, Why Seattle is the New San Francisco

2008 Sigma Xi Science Lecture: Earthquakes and Tsunamis, Why Seattle is the New San Francisco

2006 USGS Earthquake Hazards Team Seminar Series, Menlo Park, CA: New subducting slab geometry in central Chile and Argentina: Implications for the buoyancy of flat slabs

2006 USGS Volcano Hazards Team Seminar Series, Menlo Park, CA: Seismic anisotropy: What can it tell us about subduction zone mantle wedge flow?

PUBLICATIONS

In Preparation

Anderson, M. L., Zandt, G., Wagner, L., in prep., Along-strike mantle flow variations in a segment of the South American subduction zone, Chile and Argentina: submitted to Earth and Planetary Science Letters.

In Review **(* = student advisee coauthor)**

* Ruleman, C. A., Thompson, R. A., Shroba, R. S., **Anderson, M. L.**, Dreneth, B., Rotzien, J., and Lyon, J., in review, Structural, volcanogenic, and geomorphic evolution of Sunshine Valley, Taos County, North-central New Mexico, for a Special Paper published by the Geological Society of America.

Published

Anderson, M. L., Myers, S. C., in press, Assessment of regional-distance location calibration using a multiple event location algorithm: Bulletin of the Seismological Society of America.

Dragovich, J. D., Littke, H. A., MacDonald, J. H. Jr., DuFrance, A., **Anderson**, **M. L.**, Wessel, G. R., Hartog, R., 2009, Geologic map of the Snoqualmie 7.5-minute quadrangle, King County, Washington, Washington Division of Geology and Earth Resources Geologic Map.

Dragovich, J. D., Littke, H. A., MacDonald, J. H. Jr., DuFrance, A., **Anderson**, **M. L.**, Wessel, G. R., Hartog, R., Cornelius, D. J., Conrey, R. M., Knaack, C. M., 2009, Data supplement to the geologic map of the Snoqualmie 7.5-minute quadrangle, King County, Washington: Geochemistry, geochronology, sand point count data with additional information on the volcanic rocks of Snoqualmie Falls and suspected active faults, Washington Division of Geology and Earth Resources Open File Report.

Alvarado, P., Pardo, M., Gilbert, H., Miranda, S., **Anderson, M. L.**, Saez, M., and Beck, S., 2009, Flat-slab and crustal models for the seismically active Sierras Pampeanas region of Argentina: *in* Kay, S. M., Ramos, V. A., and Dickinson, W. R., Backbone of the Americas: Shallow Subduction, Plateau Uplift, and Ridge Terrane Collision, GSA Memoir 204, p. 261-278, doi: 10.1130/2009.1204(12).

Blakely, R. J., Sherrod, B. L., Hughes, J. F., **Anderson, M. L.**, Wells, R. E., Weaver, C. S., 2009, The Saddle Mountain fault, Olympic Peninsula, Washington: Western boundary of the Seattle uplift: Geosphere, v. 5, no. 2, p. 105-125.

Wagner, L., **Anderson, M.**, Beck, S., Zandt, G., 2008, Seismic evidence for orthopyroxene enrichment in the continental lithosphere: Geology, v. 36, no. 12, p. 935-938.

Dragovich, J.D., Walsh, T.J., **Anderson, M.L**., Hartog, R., DuFrane, S.A., Vervoot, J., Williams, S.A., Cakir, R., Stanton, K.D., Wolff, F.E., and Norman, D.K., 2008, Geologic map of the North Bend 7.5-minute quadrangle, King County, Washington, Washington Division of Geology and Earth Resources Geologic Map GM-73, 42 x 36 in. color sheet, scale 1:24,000, with 39 p. text, Washington State Department of Natural Resources.

Dragovich, J. D., **Anderson, M. L.,** Walsh, T. J., Johnson, B. L., Adams, T. L., 2007, Geologic map of the Fall City 7.5-minute quadrangle, King County, Washington, with a discussion of deformation features in the area, Washington Division of Geology and Earth Resources Geologic Map GM-67, 42 x 36 in. color sheet, scale 1:24,000, with 16 p. text, Washington State Department of Natural Resources.

Anderson, M. L., Alvarado, P., Zandt, G., Beck, S., 2007, Geometry and brittle deformation of the subducting Nazca plate, central Chile and Argentina: Geophysical Journal International, v. 171, p. 419-434.

Langenheim, V. E., Biehler, S., McPhee, D. K., McCabe, C. A., Watt, J. T., **Anderson, M. L.**, Chuchel, B. A., Stoffer, P., 2007, Preliminary isostatic gravity map of Joshua Tree National Park, southern California: U.S. Geological Survey Open-File Report 2007-1218 (URL http://pubs.usgs.gov/of/2007/1218/).

Anderson, M. L., Zandt, G., Triep, E., Fouch, M., Beck, S., 2004, Anisotropy and mantle flow in the Chile-Argentina subduction zone from shear wave splitting analysis: Geophysical Research Letters, 31, L23608, doi:10.1029/2004GL020906.

Anderson, M., Matti, J., Jachens, R., 2004, Structural model of the San Bernardino Basin, California from analysis of gravity, aeromagnetic, and seismicity data: Journal of Geophysical Research, v. 109, B04404.

Stephenson, W. J., Odum, J. K., Williams, R. A., **Anderson, M. L.**, 2002, Delineation of faulting and basin geometry beneath urbanized San Bernardino Valley, California, from seismic reflection and gravity data: Bulletin of the Seismological Society of America, v. 96, no. 6, p. 2504-2520.

Anderson, M. L., Roberts, C. W., Jachens, R. C., 2000, Principal facts for gravity stations in the vicinity of San Bernardino, southern California: U.S. Geological Survey Open-File Report 00-193 (URL http://geopubs.wr.usgs.gov/open-file/of00-193/).

McKee, E. H., Hildenbrand, T. G., **Anderson, M. L.**, Rowley, P. D., and Sawyer, D. A., 1999, The Silent Canyon caldera complex--a three-dimensional model based on drill-hole stratigraphy and gravity inversion: U.S. Geological Survey Open-File Report 99-555 (URL http://geopubs.wr.usgs.gov/open-file/of99-555/).

Langenheim, V. E., Davidson, J. G., **Anderson, M. L.**, and Blank, H. R., Jr., 1999, Principal facts for gravity stations and physical property measurements in the Lake Mead 30' by 60' quadrangle, Nevada and Arizona: U.S. Geological Survey Open-File Report 99-435 (URL http://geopubs.wr.usgs.gov/open-file/of99-435/).

ABSTRACTS (* = student advisee lead author) Last 5 years

* Dewey-Wood, F. D., **Anderson, M. L.**, Gilbert, H. J., Alvarado, P. M., and Martino, R., 2009, Anisotropy and mantle flow in the eastern Sierras Pampeanas from shear wave splitting: *Eos*, v. 90, n. 52, Fall Meet. Suppl., Abstract DI41B-1813.

* Richardson, T., Ridgway, K. D., Martino, R., Gilbert, H. J., **Anderson, M. L.**, Alvarado, P. M., Carignano, C., Enkelmann, E., 2009, Flat-slab subduction and continental deformation: and integrated geophysical and geological investigation of basement uplifts within the eastern Sierras Pampeanas, Argentina: *Eos*, v. 90, n. 52, Fall Meet. Suppl., Abstract T42B-06.

* Spinler, J. C., Bennett, R. A., **Anderson, M. L.**, Hreinsdottir, S., 2009, Present-day loading rate of southern San Andreas and eastern California shear zone faults from GPS: *Eos*, v. 90, n. 52, Fall Meet. Suppl., Abstract G23B-0691.

* Woodell, D., **Anderson, M. L.**, 2009, Analog Modeling of the Juan Fernández ridge, central Chile, and implications for flat-slab subduction dynamics: *Eos*, v. 90, n. 52, Fall Meet. Suppl., Abstract DI21A-1652.

* Yeck, W. L., Sheehan, A. F., **Anderson, M. L.**, Siddoway, C. S., Erslev, E., Harder, S. H., Miller, K. C., 2009, BASE Flexible Array preliminary lithospheric structure analysis: *Eos*, v. 90, n. 52, Fall Meet. Suppl., Abstract U53A-0055.

Littke, H. A., Dragovich, J. D., **Anderson, M. L.**, Hartog, R., Wessel, G. R., DuFrane, S. A., Walsh, T. J., MacDonald, J. H. Jr., Cakir, R., 2009, Geologic map of the Snoqualmie 7.5-minute quadrangle, King County, Washington—Active faulting, basin inversion and Miocene volcanic extrusion of the Snoqualmie batholith along the Rattlesnake Mountain fault zone: Geological Society of America Abstracts with Programs, Paper # 173-9.

* Richardson, T., Gilbert, H., **Anderson, M.**, 2009, Flat-slab subduction and surface deformation: an integrated geophysical and geological investigation of basement uplifts within the Eastern Sierras Pampeanas, Argentina: EarthScope National Meeting, Boise, ID, May 12-15.

Erslev, E. A., Sheehan, A., Miller, K., **Anderson, M.**, Siddoway, C., 2009, The Bighorn Project: An Integrated EarthScope Investigation of Basement-Involved Foreland Arches: EarthScope National Meeting, Boise, ID, May 12-15.

Dragovich, J. D., Walsh, T. J., **Anderson, M. L.**, Hartog, R., DuFrane, S. A., Vervoot, J., Williams, S. A., Cakir, R., Davis, K. M., Wolff, F. E., Norman, D. K., 2009, Geologic Map of

the North Bend 7.5-minute Quadrangle, King County, Washington, with a discussion of the major Cenozoic faults, folds and basins in the map area: 81st Annual Meeting of the Northwest Scientific Association, Seattle, WA, March 25-28.

* Solomon, M., **Anderson, M. L.**, 2008, A shear-wave splitting analysis of intracontinental anisotropy in South America: determining lithospheric structure and dynamics for a tectonically stable region: *Eos Trans. AGU*, Fall Meeting Suppl., Abstract DI13A-1674.

Anderson, M. L., Dragovich, J. D., Blakely, R. J., Wells, R. E., Brocher, T. M., 2008, Where does the Seattle fault end? Structural links and kinematic implications: *Eos Trans. AGU*, Fall Meeting Suppl., Abstract T23B-2022.

Blakely, R. J., Sherrod, B. L., Hughes, J. F., **Anderson, M. L.**, Wells, R. E., Weaver, C. S., 2008, Western boundary of the Seattle uplift, Washington: *Eos Trans. AGU*, Fall Meeting Suppl., T12A-07.

* Rotzien, J., **Anderson, M.**, Parker, E., Lynn, H., Ruleman, C., 2007, New constraints on rift-associated faulting in Sunshine Valley, northern New Mexico: Geological Society of America Abstracts with Programs, Abst. 130-715, Paper # 182-1.

* Rotzien, J., **Anderson, M.**, Parker, E., Lynn, H., 2007, New constraints on rift-associated faulting in Sunshine Valley, northern New Mexico: AAPG Rocky Mountain Rendezvous, Laramie, WY, Sept. 28-Oct. 1.

Anderson, M. L., Blakely, R. J., Brocher, T. M., Pratt, T. L., Wells, R. E., Haugerud, R., Bush, M., 2006, Structure of the Seattle uplift from seismic, gravity, magnetic, geologic, and geomorphic data: *Eos Trans. AGU*, 87 (52), Fall Meeting Suppl., Abstract T41A-1554.

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