

Curriculum Vitae

Senior Research Scientist
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Richard Ward Saltus richard.saltus@colorado.edu

Education

Doctor of Philosophy, Geophysics, Stanford University, Stanford, California – 1988 -1991

- 1 • *Gravity and Heat Flow Constraints on Cenozoic Tectonics of the Western United States Cordillera*, supervisor George Thompson and committee members Norm Sleep, Art Lachenbruch, and Amos Nur

Master of Science, Geophysics, Stanford University, Stanford, California – 1985 - 1988

Bachelor of Science, Mathematics, Stanford University, Stanford, California 1975 -1979

- 1 • General mathematics with a concentration in computer science and basic physics

Awards, Distinctions and Fellowships

- 1 • 1985 – Research/Teaching Fellowship, Stanford University
- 2 • 1986 – USGS Long-term Graduate School training fellowship
- 3 • 1987 – Cecil Green scholarship
- 4 • 1988 – 1991 – Research/Teaching Fellowships, Stanford University
- 5 • 1998 – Election as Fellow of the Geological Society of America
- 6 • 2000 – current – Numerous cash awards for high level of project performance at the USGS

Research Interests/Philosophy (brief statement)

- 1 My research concentrates on the application of geophysical data and interpretation to the solution of geologic problems. I work primarily with potential field data (gravity and magnetics) at a range of scales and resolution. My thesis work dealt with a variety of issues (uplift of the Sierra Nevada, formation of the Columbia Plateau, and extension of the Basin and Range) in the western United States. Since then my primary regional focus has been on Alaska and the Arctic in addition to global work. I have also been involved with studies in Antarctica. I concentrate on working collaboratively toward the solution of geologic and tectonic problems related to (1) regional geotectonic/structural framework, (2) energy and mineral potential, and (3) natural hazard (primarily seismic) assessment. A recent research direction involves the quantification and communication of uncertainty (risk) in geophysical (particularly potential field) models and interpretation. My publication philosophy is to reach the greatest possible audience and to produce products that reach across discipline boundaries. I have developed collaborations and close working relationships with NOAA and USGS researchers, academic colleagues, and other Earth Science professionals both in the United States and world-wide.

Publications, Presentations and Abstracts

- 1 I have a 30+ year professional record of publication and public presentation. A full chronological list is available by request. In this section I highlight recent and most significant work.

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4 • **Recent and Most Significant Publications**

- Oakey, G.N., and Saltus, R.W., 2016, Geophysical analysis of the Alpha–Mendeleev ridge complex: Characterization of the High Arctic Large Igneous Province: Tectonophysics, DOI 10.1016/j.tecto.2016.08.005.
- Saltus, R.W., Stanley, R.G., Haeussler, P.J., Jones, J.V., Potter, C.J., and Lewis, K.A., 2016, Late Oligocene to present contractional structure in and around the Susitna basin, Alaska—Geophysical evidence and geological implications: *Geosphere*, v. 12, n. 5, p. 1378-1390.
- Saltus, R., 2013, Tackling “boundary faults” across the Alaska-Yukon border – A report from the field: *Earth Magazine*, October 2013, p. 8-9.
- Haeussler, P.J., and Saltus, R.W., 2011, Location and extent of Tertiary structures in Cook Inlet basin, Alaska, and mantle dynamics that focus deformation and subsidence: USGS PP 1776 D, p. 1-30.
- Saltus, R.W., and Blakely, R.J., 2011, Unique Geologic Insights from “Non-Unique” Gravity and Magnetic Interpretation: *GSA Today*, v. 21, n. 12, p. 4-10.
- Gaina, C., Werner, S., Torsvik, T., Saltus, R., Alvey, A., Kuznir, N., and Maus, S., 2011, Circum-Arctic mapping project – new magnetic and gravity anomaly maps of the Arctic, in Spencer et al., eds., *Arctic Petroleum Geology*, Geological Society of London Memoir No. 35, p. 39-48.
- Saltus, R.W., Miller, E.L., and Gaina, Carmen, 2011, Regional magnetic domains of the circum-Arctic – A framework for geodynamic interpretation, in Spencer et al., eds., *Arctic Petroleum Geology*, Geological Society Memoir No. 35, p. 49-60.
- Odleiv, O., and Saltus, R., 2010, Advances in magnetic and gravitational potential field data in the arctic: *EOS*, v. 91, n. 43, p. 396.
- Saltus, R.W., 2010, Matching magnetic trends and patterns across the Tintina fault, Alaska and Canada – evidence for offset of about 510 km, in Gough, L.P. and Day, W.D., eds., *Recent U.S. Geological Survey studies in the Tintina gold province Alaska, U.S.A., and Yukon, Canada—Summary results of a 5-year project*: U.S. Geological Survey Scientific Investigations Report 2007-5289, p. C1-C7.
- Pilkington, M., and Saltus, R.W., 2009, The Mackenzie River magnetic anomaly, Yukon and Northwest Territories, Canada – Evidence for early Proterozoic magmatic crust at the edge of the North American craton: *Tectonophysics*, v. 478, n. 1-2, p. 78-86.
- Sims, P.K., Saltus, R.W., and Anderson, E.D., 2008, Precambrian basement structure map of the continental United States; an interpretation of geologic and aeromagnetic data: USGS Scientific Investigations Map SIM-3012, 1 sheet.
- Saltus, R.W., Phillips, J.D., Stanley, R.G., Till, A., and Morin, R.L., 2007, Geophysical characterization of pre-Cenozoic basement for hydrocarbon assessment, Yukon Flats, Alaska: U.S. Geological Survey Open-File Report 2007-1208.
- Saltus, R.W., and Gaina, Carmen, 2007, Circum-Arctic Map Compilation, *EOS*, v. 88, n. 21, p. 227.
- Saltus, R.W., 2007, Regional magnetic survey compilations – current issues: *Gondwana Research*, v. 11, n. 4, p. 580-581; doi:10.1016/j.gr.2006.11.004.
- Saltus, R.W., and Hudson, T.L., 2007, Regional magnetic anomalies, crustal strength, and the location of the northern Cordilleran fold and thrust belt: *Geology*, v. 35, n. 6, p. 567-570; doi 10.1130/G23470A.1.
- Saltus, R.W., Hudson, T.L., and Wilson, F.H., 2007, The geophysical character of southern Alaska – implications for crustal evolution, in Ridgway, K.D., Trop, J.M., Glen, J.M.G., and O’Neill, J.M., eds., *Tectonic Growth of a Collisional Continental Margin: Crustal Evolution of Southern Alaska*: Geological Society of America Special Paper 431, p. 1-20. doi: 10.1130/2007.2431(01).

- Okuma, Shigeo, and Saltus, R.W., 2005, Preface (to the special edition “Applications and Interpretation of Modern Magnetic Surveys”): *Earth, Planets and Space*, v. 57, n. 8, p. 679.
- Saltus, R.W., Potter, C.J., and Phillips, J.D., 2006, Crustal insights from gravity and aeromagnetic data analysis, central North Slope, Alaska: *AAPG Bulletin*, v. 90, n. 10, p. 1495-1517.
- Saltus, R.W., Blakely, R.J., Haeussler, P.J., and Wells, R.E., 2005, Utility of aeromagnetic studies for mapping of potentially active faults in two forearc basins – Puget Sound, Washington, and Cook Inlet, Alaska: *Earth, Planets and Space*, v. 57, n. 8, p. 781-793.
- Saltus, R.W., Hudson, T.L., Karl, S.M., and Morin, R.L., 2003, Reply (to Comment on Rooted Brooks Range ophiolite: Implications for Cordilleran terranes): *Geology*, v. 31, n. 1, p. 92.
- Haeussler, P.J., and Saltus, R.W., 2005, 26 km of offset on the Lake Clark fault since late Eocene time: U.S. Geological Survey Professional Paper 1709-A (<http://pubs.usgs.gov/pp/pp1709a>).
- Saltus, R.W., Hudson, T.L., Karl, S.M., and Morin, R.L., 2001, Rooted Brooks Range ophiolite: Implications for Cordilleran terranes; *Geology*, v. 29, n. 12, p. 1151-1154 (includes extended Data Repository item 2001131).
- Saltus, R.W., Hudson, T.L., and Connard, G.G., 1999, A new magnetic view of Alaska: *GSA Today*, v. 9, n. 3, p. 1-6.
- Phillips, J.D., Saltus, R.W., and Reynolds, R.L., 1998, Sources of magnetic anomalies over a sedimentary basin - preliminary results from the coastal plain of the Arctic National Wildlife Refuge, Alaska: *American Association of Petroleum Geologists Special Volume - Geologic Applications of Gravity and Magnetics: Case Histories*, Gibson, R.I., and Millegan, P.S. (eds), American Association of Petroleum Geologists, Tulsa, p. 130-134.
- Cuffey, K.M., Clow, G.D., Alley, R.B., Stuvier, M., Waddington, E.D., and Saltus, R.W., 1995, Large arctic temperature change at the Wisconsin-Holocene glacial transition: *Science*, v. 270, p. 455-458.
- Saltus, R.W., and Thompson, G.A., 1995, Why is it downhill from Tonopah to Las Vegas? - A case for deep isostatic support of the high Basin and Range: *Tectonics*, v. 14, n. 6, p. 1235-1244.
- Saltus, R.W., 1993, Upper crustal structure beneath the Columbia River Basalt Group, Washington: Gravity interpretation controlled by borehole and seismic studies: *GSA Bulletin*, v. 105, p. 1247-1259.
- Saltus, R.W., and Lachenbruch, A.H., 1991, Thermal evolution of the Sierra Nevada: Tectonic implications of new heat-flow data, *Tectonics*, vol. 10, p. 325-344.

1 • Recent and Most Significant Abstracts and Presentations

- Oakey, G.N., and Saltus, R.W., 2014, New Potential Field Cross Sections of the Amerasian Basin: NGF Abstracts and Proceedings, No. 2, 2014, p. 34. http://www.geologi.no/images/Konferanser/Arctic_Days_2014/Abstract2_2014_Scr.pdf (PRESENTED)
- Saltus, R.W., Stanley, R., Lewis, K., and Haeussler, P.J., 2014, A tilted bed for the sleeping lady? Gravity and magnetic evidence for a thrust-fault interpretation of the Mt Susitna/Beluga Mtn front – Alaska Geological Society Technical Conference, Anchorage, May 15, 2014. <http://www.alaskageology.org/documents/14/2014%20AGS%20Tech%20Conf%20Program%20and%20Abstracts.pdf> (PRESENTED)
- Oakey, G.N., Saltus, R.W., and 6 others, 2013, Crustal structure and tectonic framework of the Canadian Arctic margin – New insights on the development of the Amerasia Basin: AGU Fall Meeting, OS13B-1702 (PRESENTED).
- Saltus, R.W., and Blakely, R.J., 2013, Exploring uncertainty in the Earth Sciences – the potential field perspective: AGU Fall Meeting, PA21B-1874 (PRESENTED).
- Roeske, S.M., Saltus, R.W., and Till, A.B., 2013, The past as a key to the present – Role of inherited crustal strength in the diffuse Alaskan plate boundary zone: GSA Annual Meeting 2013, paper 63-4.
- Phillips, J.D., Saltus, R.W., and Moulton, C.W., 2013, Density structure of the National Petroleum Reserve Alaska from gravity profile inversions: GSA Annual Meeting 2013, Paper 23-10.
- Saltus, R.W., Hayward, N., Jones, J.V., and Murphy, D.C., 2013, Reconciling geology between Alaska and the Yukon – Potential role of regional magnetic anomaly data: GSA Annual Meeting 2013, Paper 23-9, https://gsa.confex.com/gsa/2013AM/finalprogram/abstract_228922.htm. (PRESENTED)
- Saltus, R.W., Freymueller, J., Haeussler, P.J., Roeske, S.M., and Bedrosian, P.A., 2013, AKLM-Alpha – A pre-Earthscope lithospheric model for Alaska: GSA Annual Meeting 2013, Paper 15-2, https://gsa.confex.com/gsa/2013AM/finalprogram/abstract_231462.htm. (INVITED, PRESENTED)

- Saltus, Richard, Oakey, Gordon, Miller, Elizabeth, and Jackson, Ruth, 2013, The High Arctic Magnetic High – The Geophysical Manifestation of a Large ($1.36 \times 10^6 \text{ km}^2$) and Voluminous ($5\text{-}10 \times 10^6 \text{ km}^3$) Igneous Province, EGU General Assembly, Geophysical Research Abstracts, v. 15, EGU2013-6187.
- Saltus, R.W., Oakey, G., Miller, E.L., and Jackson, R., 2012, Characterization of Arctic highly magnetic domains -- the geophysical expression of inferred Large Igneous Province(s): AGU Fall Meeting 2012, Abstract T31A-2580 (Poster).
- Saltus, R.W., Jones, J.V., and Stanley, R.G., 2012, Gravity and magnetic investigations of Susitna basin structure, Cook Inlet, Alaska: GSA Abstracts with Programs, v. 44, n. 7, p. 76. PRESENTED
- Saltus, R.W., Desczc-Pan, M., Day, W., and O'Neill, J.M., 2012, Geological implications of geophysical surveys in the Fortymile mining district, Yukon-Tanana upland, east-central Alaska: Geological Association of Canada, Abstracts Volume 35, p. 122. (St John's, Newfoundland) PRESENTED
- Saltus, R.W., Houseknecht, D.W., Hutchinson, D.R., and Shimeld, J., 2012, Nature and Tectonic Significance of Arctic Margin Free-Air Gravity Highs: IPY 2012 Conference Montreal "From Knowledge to Action". PRESENTED
- Saltus, R.W., Haeussler, P.J., Bird, K.J., and Hudson, T., 2011, The 3 coastal margins of Alaska – Stepping offshore geophysically: presented at 2011 Fall Meeting, AGU, San Francisco, Calif., 5-9 Dec. PRESENTED
- Saltus, R., Miller, E., and Gaina, C., 2011, Deep magnetic high domains of the circum-Arctic – What are the structural implications of these features?: AAPG Search and Discovery Article #90130, 3P Arctic, The Polar Petroleum Potential Conference and Exhibition, Halifax, N.S., Canada, 30 August – 2 September, 2011. PRESENTED
- Saltus, Richard, and Haeussler, Peter J., 2011, Why Cook Inlet is so special (geophysically): 2011 Pacific Section, AAPG, Arctic to the Cordillera – Unlocking the Potential, Program with Abstracts, p. 83-84. PRESENTED
- Saltus, R., and Phillips, J.D., 2011, Short-wavelength gravity and magnetic anomalies related to shallow sedimentary structures, North Slope, Alaska (Examples from USGS work under the overall direction of Ken Bird): 2011 Pacific Section, AAPG, Arctic to the Cordillera – Unlocking the Potential, Program with Abstracts, p. 83. PRESENTED
- Saltus, R.W., Miller, E.L., and Gaina, C., 2010, Gravity and magnetic anomalies of the western Arctic ocean and its margins provide an imperfect window to a complex, multi-stage tectonic history: Abstract T31A-2124 presented at 2010 Fall Meeting, AGU, San Francisco, Calif., 13-17 Dec. INVITED, PRESENTED
- Saltus, R.W., 2010, Whole crust geophysical transect models across the south-central margin of Alaska: GSA abstracts with programs, v. 42, n. 5, p. 675. PRESENTED
- Saltus, R.W., Miller, E.L., and Gaina, Carmen, 2010, Crustal-scale potential field framework of the circum-Arctic with implications for tectonic understanding: NGF Abstracts and Proceedings of the Geological Survey of Norway, n. 2, 2010, p. 45. INVITED, PRESENTED

(I have given approximately 100 presentations at professional meetings – full list available on request)

5 • Recent Lectures and Seminars

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- 7 2012 – Invited presentation: United States Arctic Extended Continental Shelf Program, June 2012, Norwegian Geological Survey (NGU), Trondheim, Norway
- 8 2011 – Invited keynote speaker, Earthscope Alaska Workshop, May 16th, 2011, Austin, TX, "Alaska Tectonic History and Current Knowledge of the Crust" (created and presented with Sarah Roeske, U.C. Davis)
- 9 2010 – Invited speaker, University of Colorado Tectonics Seminar, Boulder, CO, "Tectonic studies in the Sierra Nevada and Western Cordillera, U.S.A."
- 10 2010 – Invited speaker, Colorado School of Mines Geophysics Seminar, Golden, CO "Geophysical journeys in Alaska"
- 11 2010 – Invited speaker, NOAA National Geophysical Data Center, Boulder, CO, "USGS Alaska and Circum-Arctic studies"
- 12 2010 – Invited speaker, USGS Cook Inlet Geology review, Anchorage, AK, "Review of USGS geophysical interpretation in Cook Inlet"

- 13 2010 – Invited speaker, USGS/Geological Survey of Canada Arctic workshop, Halifax, N.S., “Regional gravity and magnetic features of the Canada Basin”
- 14 2009 – Poster presentation at Arctic Penrose meeting, Banff, Canada, “Circum-Arctic geophysical maps and domains”
- 15 2009 – Invited speaker, Colorado School of Mines Geophysics Seminar, Golden, CO, “USGS geophysical studies in Alaska”
- 16 2008 – Invited speaker, Heiland Lecture Series, Colorado School of Mines, Golden, CO, “Regional magnetic anomalies, crustal strength, and the location of the northern Cordilleran fold-and-thrust belt”
- 17 2008 – Invited speaker, USGS World Energy meeting, Lakewood, Colorado, “Regional geophysical interpretation of the Circum-Arctic”
- 18 2007 – Invited speaker, International Polar Year Geophysical Data workshop, Trondheim, Norway, “Deep magnetic highs in Alaska as significant zones of crustal strength”
- 19 2006 – Invited presentations at International Circum-Polar workshop, St Petersburg, Russia, “USGS Arctic geophysical data”, and “Crustal insights from gravity and aeromagnetic data analysis, central North Slope, Alaska”
- 20 2006 – Invited presentation, International Symposium on Airborne Geophysics (ISAG2006), Tsukuba, Japan, “Application of magnetic methods to geohazard mapping, mitigation, and monitoring”

1 • Thesis Committee Service

- 2012 – Laura Marello, Technical University of Trondheim, First Opponent for Thesis Defense (Trondheim, Norway, June 2012)
- 2011 – Casey Huff, U.C. San Diego (M.S. student)
- 2011 – Adrian Weaver, Colorado School of Mines (M.S. Engineering Systems, “Geophysics for water-supply issues, Honduras”)
- 2004 – Alisa Green, Colorado School of Mines (M.S. Geophysics, “Magnetotelluric crustal studies in Kenai, Alaska”)

1 • International Scientific Service

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- 3 2010 - Served on the technical committee, presented a keynote talk, and wrote the meeting report for the first meeting on Integrated Magnetic and Gravity Interpretation in Northern Exploration (iMAGINE).
- 4 2010 - Invited member of committee for the development of a new Tectonic Map of the Arctic (TeMar). Pending funding from the USGS, I plan to participate in this effort beginning with an international workshop in April, 2011.
- 5 2008 - Hosted Dr. Odleiv Olesen from the Geological Survey of Norway during a 3 month sabbatical visit to the USGS.
- 6 2006 - USGS technical representative for the International Polar Year program to assemble and publish circum-Arctic geophysical maps. I gave two invited presentations and offered technical input at an international planning meeting in late January 2006 in St. Petersburg, Russia for this project.
- 7 2003 - Co-chaired (with Shigeo Okuma of Japan and Massimo Chiappini of Italy) a session entitled “Modern magnetic surveys for regional tectonics, geohazards and environmental investigations” at the IUGG meeting in Sapporo, Japan

Research Experience

- 1 *I have a range of research experience from the different stages of my career at the USGS. I started as a Computer Programmer and Field Assistant after receiving my Bachelor's degree in 1979. I took leave from my USGS position to attend graduate school from 1985 to 1991. After receiving my Ph.D. I advanced through the USGS research track to my current rank of GS-15, received in 2007. Here is a brief summary of my research responsibilities and experience. For a more detailed account, see my USGS Research Scientist Record (attached).*

1980 – 1982 – Operational Geophysicist (GS-9): Develop computer software (Fortran) for geophysical data analysis, assist in field operations, and manage computer resources.

1982 – 1986 – Operational Geophysicist (GS-11): Continue software development, conduct basic geophysical surveys (gravity and magnetic) and carry out interpretation with guidance from senior geophysicists.

1986 – 1991 – Graduate Studies (M.S. and Ph.D.) at Stanford University

1991 – 1995 – Operational Geophysicist (GS-12): Field program (airborne magnetics) in Antarctica (with the German Geological Survey); USGS Project Work (Mineral Resource Program) in the Western United States and Alaska.

1995 – 1998 – Research Geophysicist (GS-13): Conversion from operational to research position. Continued software development for geophysical interpretation; application of gravity and magnetic anomaly interpretation to tectonic framework, mineral resource appraisal, and energy resource appraisal for USGS projects.

1998 – 2007 – Research Geophysicist (GS-14): Project Chief for new geophysical surveys and studies in Alaska; Conduct fieldwork and regional data analysis for Mineral and Energy appraisal projects in Alaska.

2007 – Present – Research Geophysicist (GS-15): Project Chief and Task Chief for research projects supported by the USGS Mineral Resource, Energy Resource, and Coastal Marine Programs. Here is a summary of my current research directions:

Alaska Mineral Resource Studies: **(1)** Western Alaska Range Project – I am working with a team of geologists and geophysicists to investigate the regional tectonics and mineral resource potential for a swath of the Alaska Range west of Anchorage, Alaska. I use regional potential field (gravity and magnetic) modeling and interpretation to test and develop geologic and tectonic concepts for this complex and poorly understood region. Of key interest are issues including the overall geodynamics (the study area is at the complicated tectonic transition between “normal” Pacific/North America subduction to the southwest and the collision of the buoyant Yakutat block that is “clogging” the subduction to the northeast; mapping the complex Moho in this region; defining the crustal basement terrains (we are at the intersection of the Peninsular, Wrangellia, and Kahlitna blocks); and unraveling the complex igneous history of the region. **(2)** Alaska/Yukon Geophysical/Geological Reconciliation Project – Along with co-chief Jamey Jones (Anchorage USGS) I proposed and created this international cooperative project (with scientists from the Canadian Geological Survey and the Yukon Geological Survey) to develop a seamless modern tectonic and geologic understanding of the Yukon/Tanana terrain that crosses the Alaska/Yukon boundary. This complex epicratonic assemblage is currently mapped with a “boundary fault” along the U.S./Canada International border. This artificial fault represents a discontinuity in the tectonic theories on the two sides of the border. The goal of this new project is to work together across the border to identify the key tectonic issues and to produce a new common understanding of this important terrain. **(3)** Alaska Geophysical Data Enhancement Project - Along with co-chief Bruce Smith (Denver USGS), I proposed and created this new project to enhance existing high resolution geophysical data surveys in Alaska (through advanced reprocessing and imaging) to make them more accessible and useful for geologic and tectonic interpretation. We are working cooperatively with scientists from the Alaska State Division of Geological and Geophysical Surveys.

Alaska/Arctic Energy Resource Studies: **(1)** Interior Alaska Basins Project – I am using new gravity and aeromagnetic data to model the structure of the Susitna Basin. My recent work has completely redefined the structural thinking for the Susitna Basin (located just across Cook Inlet from Anchorage, Alaska). Current and previous maps depicts this basin as an extensional graben, but my new gravity and magnetic data and modeling demonstrate a compressional (collapse) geometry instead. **(2)** Arctic Alaska and offshore petroleum potential – I am continuing work with Dave Houseknecht (USGS) to constrain onshore/offshore seismic crustal models extending from the Alaskan margin into the high Arctic.

Coastal Marine Program Studies: **(1)** United Nations' Law of the Sea Extended Continental Shelf Project – I am working with colleagues from NOAA, the U.S. State Department, and the Canadian Geological Survey on development of crustal models in the high Arctic to support eventual territorial claims by the United States under the United Nations Law of the Sea Convention. This work involves cooperative interpretation of new seismic data collected by joint effort between the U.S. and Canada. The new data and interpretations will absolutely revolutionize our understanding of Arctic tectonics (and resource potential). **(2)** Data documentation and archival for the Extended Continental Shelf Project – I work with colleagues from the NOAA National Geophysical Data Center to fulfill their mandate to document and archive all geospatial data used in development of the United Nations Extended Continental Shelf territorial claims. This work also involves close collaboration and interaction with Stefan Maus' GEOMAG group consisting of CIRES employees located at the NOAA NGDC office in Boulder.

Research Assistant, Stanford University, Stanford, CA, 1989 - 1991

- 1 • *Research and Teaching Assistant to George Thompson (thesis advisor) – research on geophysical characterization of Cenozoic tectonics in the western United States.*
- 2

Administrative and Leadership Activity

I have led small and medium sized (up to about a dozen scientists) research teams at the USGS for projects lasting from one to five years.

I serve currently as official supervisor to 7 mid and junior level scientists.

I served for a period of about 2 months (during the development of a new fiscal year budget) as the Science Center Director for the Crustal Geophysics and Geochemistry Science Center at the USGS in Denver.

I have completed three 40-hour leadership and supervisory training courses at the USGS, Leadership 101, Leadership 201, and Department of Interior Supervisory Training.

I served (volunteer elected position) as the President of the Golden Gate Fire Protection District (Golden, Colorado) from 2000 to 2006 (total service on the District Board from 1998 to 2006). I gained valuable real world management experience while dealing with significant changes to the fire codes, with questions and issues from the general public, and with high-tension personnel issues and situations within the volunteer Fire Department.

References

1. Dr. Richard J. Blakely, Senior Research Geophysicist, United States Geological Survey, Menlo Park, California, blakely@usgs.gov.
2. Dr. Sarah M. Roeske, Researcher, University of California, Davis, California, smroeske@usdavis.edu
3. Dr. Carol Finn, Senior Research Geophysicist, USGS, (Current President of the American Geophysical Union), Denver, CO, cfinn@usgs.gov.
4. Susan McLean, Director, Marine Geology and Geophysics, National Geophysical Data Center, NOAA, Boulder, susan.mclean@noaa.gov