



**PUBLICATIONS OF THE  
VOLCANO HAZARDS PROGRAM  
1994 - 1998**

1999

UNITED STATES DEPARTMENT OF THE INTERIOR

UNITED STATES GEOLOGICAL SURVEY

Available at: <http://volcanoes.usgs.gov/Products/sproducts.html>

The Volcano Hazards Program of the U.S. Geological Survey (USGS) is part of the Geologic Hazards Assessments subactivity as funded by Congressional appropriation. Investigations are carried out in the Geologic and Water Resources Divisions of the USGS and with cooperators at the Alaska Division of Geological and Geophysical Surveys, University of Alaska Fairbanks Geophysical Institute, University of Utah, and University of Washington Geophysics Program. This report lists publications from all these institutions.

This report contains only published papers and maps; numerous abstracts produced for presentations at scientific meetings have not been included. Publications are included based on date of publication with no attempt to assign them to Fiscal Year.

- Adami, L. H., Hildreth, Wes, and Donnelly-Nolan, J. M., 1996(1997), Oxygen isotope analyses of 166 rock samples from Medicine Lake Volcano, California: U.S. Geological Survey Open-File Report 96-541, 10 p.
- Alaska Division of Geological & Geophysical Surveys, 1995, Volcanoes of Alaska: State of Alaska, Information Circular 38, 1 plate, scale 1:4,000,000..
- Alaska Division of Geological & Geophysical Surveys, 1998, Volcanoes of Alaska: Alaska Division of Geological & Geophysical Surveys, Information Circular 38, 1 plate, scale 1:4,000,000.
- Árnadóttir, Thóra, Sigmundsson, Freysteinn, and Delaney, P. T., 1998, Sources of crustal deformation associated with the Krafla, Iceland, eruption of September 1984: Geophysical Research Letters, v. 25, p. 1043-1046.
- Arnet, Felix, Kahle, Hans-Gert, Klingelé, Emile, Smith, R. B., Meertens, C. M., and Dzurisin, Dan, 1997, Temporal gravity and height changes of the Yellowstone caldera, 1977-1994: Geophysical Research Letters, v. 24, p. 2741-2744.
- Aspinall, W. P., Miller, A. D., Lynch, L. L., Latchman, J. L., Stewart, R. C., White, R. A., and Power, J. A., 1998, Soufrière Hills eruption, Montserrat, 1995-1997: Volcanic earthquake locations and fault plane solutions: Geophysical Research Letters, v. 25, p. 3397-3400.
- Bacon, C. R., Bruggman, P. E., Christiansen, R. L., Clynne, M. A., Donnelly-Nolan, J. M., and Hildreth, Wes, 1997, Primitive magmas at five Cascade volcanic fields: Melts from hot, heterogeneous sub-arc mantle, *in* Nixon, G. T., Johnston, A. D, and Martin, R. F., eds., *Nature and Origin of Primitive Magmas at Subduction Zones*, Canadian Mineralogist, v. 35, p. 397-423.
- Bacon, C. R., Gunn, S. H., Lanphere, M. A., and Wooden, J. L., 1994, Multiple isotopic components in quaternary volcanic rocks of the Cascade Arc near Crater Lake, Oregon: Journal of Petrology, v. 35, p. 1521-1556.
- Bacon, C. R., Mastin, L. G., Scott, K. M., and Nathenson, Manuel, 1997, Volcano and earthquake hazards in the Crater Lake region, Oregon: U.S. Geological Survey Open-File Report 97-487, 32 p., 1 plate, scale 1:100,000.
- Bacon, C. R., and Nathenson, Manuel, 1996, Geothermal resources in the Crater Lake area, Oregon: U.S. Geological Survey Open-File Report 96-663, 34 p.
- Bailey, R. A., and Carr, R. G., 1994, Physical geology and eruptive history of the Matahina Ignimbrite, Taupo volcanic zone, North Island, New Zealand: New Zealand Journal of Geology and Geophysics. v. 37, p. 319-344.
- Ball, J. W., Nordstrom, D. K., Jenne, E. A., and Vivit, D. V., 1998, Chemical analyses of hot springs, pools, geysers, and surface waters from Yellowstone National Park, Wyoming, and vicinity, 1974-1975: U.S. Geological Survey Open-File Report 98-182, 45 p.
- Banks, N. G., Calvache, M. L., and Williams, S. N., 1997, <sup>14</sup>C ages and activity for the past 50 ka at Volcán Galeras, Columbia: Journal of Volcanology and Geothermal Research, v. 77, p. 39-55.
- Banks, N. G., and Hoblitt, R. P., 1996, Direct temperature measurements of deposits, Mount St. Helens, Washington, 1980—1981: U.S. Geological Survey Professional Paper 1387, 76 p.
- Bargar, K. E., 1994, Hydrothermal alteration in the SUNEDCO 58-28 geothermal drill hole near Breitenbush Hot Springs, Oregon: Oregon Geology, v. 56, no. 4, p. 75-87.
- Bargar, K. E., 1995, Some fluid-inclusion measurements for geothermal drill holes in California, Nevada, El Salvador, and Russia: U.S. Geological Survey Open-File Report 95-826, 14 p.
- Bargar, K. E., and Keith, T. E. C., 1997, Estimated temperatures for geothermal drill holes at Medicine Lake Volcano, northeastern California, based on fluid inclusion and hydrothermal mineralogy studies: U.S. Geological Survey Open-File Report 97-716, 116 p., one VHS video tape.

- Bargar, K. E., Keith, T. E. C., and Trusdell, F. A., 1995, Fluid-inclusion evidence for past temperature fluctuations in the Kilauea east rift zone geothermal area, Hawaii: *Geothermics*, v. 24, p. 639-659.
- Bargar, K. E., Keith, T. E., Trusdell, F. A., Evans, S. R., and Sykes, M. L., 1996, Hydrothermal alteration mineralogy of SOH drill holes, Kilauea East Rift Zone geothermal area, Hawaii: U.S. Geological Survey Open-File Report 96-10, 75 p.
- Bargar, K. E., and Oscarson, R. L., 1997, Zeolites in the Cascade Range of northern Oregon: *Oregon Geology*, v. 59, p. 107-122.
- Bargar, K. E., and Oscarson, R. L., 1997, Zeolites and selected other hydrothermal minerals in the Cascade Mountains of northern Oregon: U.S. Geological Survey Open-File Report 97-100, 64 p.
- Barth, G. A., Kleinrock, M. C., and Helz, R. T., 1994, The magma body at Kilauea Iki lava lake: Potential insights into mid-ocean ridge magma chambers: *Journal of Geophysical Research*, v. 99, p. 7199-7217.
- Barton, C. A., Hickman, S., Morin, R., Zoback, M. D., Finkbeiner, T., Sass, J., and Benoit, D., 1996, Fracture permeability and its relationship to in situ stress in the Dixie Valley, Nevada, geothermal reservoir, *in* Proceedings of the VIII International Symposium on the Observation of the Continental Crust through Drilling, Tsukuba, Japan, p. 210-215.
- Barton, C. A., Hickman, Stephen, Morin, Roger, Zoback, M. D., Finkbeiner, Thomas, Sass, John, and Benoit, Dick, 1997, Fracture permeability and its relationship to in-situ stress in the Dixie Valley, Nevada, geothermal reservoir: Proceedings, Twenty-second Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, p.147-152.
- Barton, C. A., Hickman, Stephen, Morin, Roger, Zoback, M. D., and Benoit, Dick, 1998, Reservoir-scale fracture permeability in the Dixie Valley, Nevada, geothermal field: Proceedings, Twenty-third Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, p. 299-306.
- Barton, C. A., Zoback, M. D., Moos, D., and Sass, J. H., 1995, In-situ stress and fracture permeability in the Long Valley Caldera, *in* Daemen, J. J., and Schultz, R. A., eds., Proceedings - 35th U.S. Symposium on Rock Mechanics, p. 225-229.
- Beeson, M. H., Clague, D. A., and Lockwood, J. P., 1996, Origin and depositional environment of clastic deposits in the Hilo drill hole, Hawaii: *Journal of Geophysical Research*, v. 101, p. 11,617-11,629.
- Begét, J. E., and Motyka, R. J., 1998, New dates on late Pleistocene dacitic tephra from the Mount Edgecumbe volcanic field, southeastern Alaska: *Quaternary Research*, v. 49, p. 123-125.
- Begét, J. E., and Nye, C. J., 1994, Postglacial eruption history of Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 31-54.
- Begét, J. E., Stihler, S. D., and Stone, D. B., 1994, A 500-year-long record of tephra falls from Redoubt Volcano and other volcanoes in upper Cook Inlet, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 55-67.
- Benoit, J. P., and McNutt, S. R., 1996, Global volcanic earthquake swarm database and preliminary analysis of volcanic earthquake swarm duration: *Annali de Geofisica*, v. 39, p. 221-229.
- Benoit, J. P., and McNutt, S. R., 1996, Global volcanic earthquake swarm database 1979-1989: U.S. Geological Survey Open-File Report 96-69, 333p.
- Benoit, J. P., and McNutt, S. R., 1997, New constraints on source processes of volcanic tremor at Arenal Volcano, Costa Rica, using broadband seismic data: *Geophysical Research Letters*, v. 24, p. 449-452.
- Benz, H. M., Chouet, B. A., Dawson, P. B., Lahr, J. C., Page, R. A., and Hole, J. A., 1996, Three-dimensional P and S wave velocity structure of Redoubt Volcano, Alaska: *Journal of Geophysical Research*, v. 101, p. 8111-8128.

- Bergfeld, Deborah, Goff, Fraser, Janik, C. J., and Johnson, S. D., 1998, CO<sub>2</sub> flux measurements across portions of the Dixie Valley system, Nevada: *Geothermal Resources Council Transactions*, v. 22, p. 107-111.
- Bischoff, J. L., and Rosenbauer, R. J., 1996, The alteration of rhyolite in CO<sub>2</sub> charged water at 200 and 350°C: The unreactivity of CO<sub>2</sub> at higher temperature: *Geochimica et Cosmochimica Acta*, v. 60, p. 3859-3867.
- Bischoff, J. L., Rosenbauer, R. J., and Fournier, R. O., 1996, The generation of HCl in the system CaCl<sub>2</sub>-H<sub>2</sub>O: Vapor-liquid relations from 380-500°C: *Geochimica et Cosmochimica Acta*, v. 60, p. 7-16.
- Blakely, R. J., 1994, Extent of partial melting beneath the Cascade Range, Oregon; constraints from gravity anomalies and ideal-body theory: *Journal of Geophysical Research, B, Solid Earth and Planets*, v. 99, p. 2757-2773.
- Blakely, R. J., 1995, *Potential Theory in Gravity and Magnetic Applications*: Cambridge University Press, New York, 441 p.
- Blakely, R. J., Christiansen, R. L., Guffanti, Marianne, Wells, R. E., Donnelly-Nolan, J. M., Muffler, L. J. P., Clynne, M. A., and Smith, J. G., 1997, Gravity anomalies, Quaternary vents, and Quaternary faults in the southern Cascade Range, Oregon and California: implications for arc and backarc evolution: *Journal of Geophysical Research*, v. 102, p. 22,513-22,527.
- Bliss, J. D., 1995, Cerro Prieto geothermal field, Mexico; chemical analyses and other data for 58 samples collected in 1977-1979: U.S. Geological Survey Open-File Report 95-514, 75 p.
- Bohlen, S. R., Halley, R. B., Hickman, S. H., Johnson, S. Y., Lowenstern, J. B., Muhs, D. R., Plumlee, G. S., Thompson, G. A., Trauger, D. L., and Zoback, M. L., 1998, *Geology for a changing world: A science strategy for the Geologic Division of the U.S. Geological Survey, 2000—2010*: U.S. Geological Survey Circular 1172, 59 p.
- Borg, L. E., and Clynne, M. A., 1998, The petrogenesis of felsic calc-alkaline magmas from the southernmost Cascades, California: *Journal of Petrology*, v. 39, p. 1197-1222.
- Borg, L. E., Clynne, M. A., and Bullen, T. D., 1997, The variable role of slab-derived fluids in the generation of a suite of primitive calc-alkaline lavas from the southernmost Cascades, California, *in* Nixon, G. T., Johnston, A. D., and Martin, R. F., eds., *Nature and Origin of Primitive Magmas at Subduction Zones*, *Canadian Mineralogist*, v. 35, p. 425-452.
- Bracken, R. E., Grover, T. P., and Puniwai, Gary, 1998, Development and testing of a tensor magnetic gradiometer system with trial monitoring near Kilauea Volcano, Hawaii: U.S. Geological Survey Open-File Report 98-773, 163 p.
- Brantley, S. R., 1997(1998), *Volcanoes of the United States: The Earth Scientist*, v. 14, no. 4, p. 3-13.
- Brantley, S. R., and Myers, Bobbie, 1997, Mount St. Helens – from the 1980 eruption to 1996: U.S. Geological Survey Fact Sheet 70-97, 2 p.
- Brantley, S. R., and Scott, W. E., 1993 (1995), The danger of collapsing lava domes: lessons for Mount Hood, Oregon: *Earthquakes and Volcanoes*, v. 24, no. 6, p. 244-269.
- Buck, W. R., Delaney, P. T., Karson, J. A., and Lagabrielle, Yves, eds., 1998, *Faulting and Magmatism at Mid-Ocean Ridges: Geophysical Monograph 106*, American Geophysical Union, Washington, D. C., 348 p.
- Buck, W. R., Delaney, P. T., Karson, J. A., and Lagabrielle, Yves, 1998, Preface, *in* Buck, W. R., Delaney, P. T., Karson, J. A., and Lagabrielle, Yves, eds., *Faulting and Magmatism at Mid-Ocean Ridges: Geophysical Monograph 106*, American Geophysical Union, Washington, D. C., p. vii.
- Buckingham, M. J., and Garces, M. A., 1996, Canonical model of volcano acoustics: *Journal of Geophysical Research*, v. 101, p. 8129-8151.
- Campita, N. R., Daag, A. S., Newhall, C. G., Rowe, G. L., and Solidum, R. U., 1996, Evolution of a small caldera lake at Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo*,

- Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 435-442.
- Casadevall, T. J., 1994, The 1989-1990 eruption of Redoubt Volcano, Alaska: impacts on aircraft operations, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 301-316.
- Casadevall, T. J., ed., 1994, Volcanic ash and aviation safety: proceedings of the first international symposium on volcanic ash and aviation safety: U.S. Geological Survey Bulletin 2047, 450 p.
- Casadevall, T. J., Delos Reyes, P. J., and Schneider, D. J., 1996, The 1991 Pinatubo eruptions and their effects on aircraft operations, *in* Newhall, C. G., and Punongbayan, R. S., eds., Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 1071-1088.
- Casadevall, T. J., Doukas, M. P., Neal, C. A., McGimsey, R. G., and Gardner, C. A., 1994, Emission rates of sulfur dioxide and carbon dioxide from Redoubt Volcano, Alaska during the 1989-1990 eruptions, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 519-530.
- Casadevall, T. J., and Krohn, M. D., 1995, Effects of the 1992 Crater Peak eruptions on airports and aviation operations in the United States and Canada, *in* Keith, T. E. C., ed., The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, p. 205-220.
- Casadevall, T. J., and Thompson, T. B., 1995, World map of volcanoes and principal aeronautical features: U.S. Geological Survey Geophysical Investigations Map GP-1011, scale 1:34,268,000.
- Cashman, K. V., and Kauahikaua, J. P., 1997, Reevaluation of vesicle distributions in basaltic lava flows: *Geology*, v. 25, p. 419-422.
- Cashman, K. V., and Mangan, M. T., 1994, Physical aspects of magmatic degassing; II, Constraints on vesiculation processes from textural studies of eruptive products, *in* Carroll, M. R., and Holloway, J. R., eds., Volatiles in magmas, *Reviews in Mineralogy*, v. 30, p. 447-478.
- Cashman, K. V., Mangan, M. T., and Newman, S., 1994, Surface degassing and modifications to vesicle size distributions in active basalt flows: *Journal of Volcanology and Geothermal Research*, v. 61, p. 45-68.
- Chadwick, W. W., Jr., and Dieterich, J. H., 1995, Mechanical modeling of circumferential and radial dike intrusion on Galapagos volcanoes: *Journal of Volcanology and Geothermal Research*, v. 66, p. 37-52.
- Chadwick, W. W., Jr., Moore, J. G., and Fox, C. G., 1994, Bathymetry of the southwest flank of Mauna Loa Volcano, Hawaii: U.S. Geological Survey Miscellaneous Field Studies Map MF-2255, 1 plate, scale 1:150,000.
- Chadwick, W. W., Jr., Moore, J. G., and Fox, C. G., 1994, Bathymetry of the west-central slope of Island of Hawaii: U.S. Geological Survey Miscellaneous Field Studies Map MF-2269, 1 plate, scale 1:150,000.
- Champion, D. E., and Donnelly-Nolan, J. M., 1994, Duration of eruption at the Giant Crater lava field, Medicine Lake Volcano, California, based on paleomagnetic secular variation: *Journal of Geophysical Research*, v. 99, p. 15,595-15,604.
- Champion, D. E., and Lanphere, M. A., 1997, Age and paleomagnetism of basaltic lava flows in corehole ANL-OBS-AQ-014 at Argonne National Laboratory-West, Idaho National Engineering and Environmental Laboratory: U.S. Geological Survey Open-File Report 97-700, 34 p.
- Champion, D. E., and Lockwood, J. P., 1998, Paleomagnetic data from basaltic lava flows of the northeast rift zone of Mauna Loa volcano, Hawaii: U.S. Geological Survey Open-File Report 98-782, 5 p.

- Chiarabba, C., Amato, A., and Delaney, P. T., 1997, Crustal structure, evolution, and volcanic unrest of the Alban Hills, Central Italy: *Bulletin of Volcanology*, v. 59, p. 161-170.
- Chiarabba, C., Amato, A., and Evans, J., 1995, Variations on the NeHT high-resolution tomography method: A test of technique and results for Medicine Lake Volcano, northern California: *Journal of Geophysical Research*, v. 100, p. 4035-4052.
- Child, J. K., Begét, J. E., and Werner, Al, 1998, Three Holocene tephras identified in lacustrine sediment cores from the Wonder Lake area, Denali National Park and Preserve, Alaska, U.S.A.: *Arctic and Alpine Research*, v. 30, p. 89-95.
- Chouet, B. A., 1996, Long-period volcano seismicity: its source and use in eruption forecasting: *Nature*, v. 380, n. 6572, p. 309-316.
- Chouet, B. A., 1996, New methods and future trends in seismological volcano monitoring, *in* Scarpa, R., and Tilling, R. I., eds., *Monitoring and Mitigation of Volcano Hazards*: Springer, Berlin, p. 23-97.
- Chouet, B., Dawson, P., De Luca, G., Martini, M., Milana, G., Saccorotti, G., and Scarpa, R., 1998, Array analyses of seismic sources at Stromboli: *Acta Vulcanologica*, v. 10, p. 367-382.
- Chouet, Bernard, De Luca, Gaetano, Milana, Giuliano, Dawson, Phillip, Martini, Marcello, and Scarpa, Roberto, 1998, Shallow velocity structure of Stromboli Volcano, Italy, derived from small-aperture array measurements of Strombolian tremor: *Bulletin of the Seismological Society of America*, v. 88, p. 653-666.
- Chouet, B. A., Page, R. A., Stephens, C. D., Lahr, J. C., and Power, J. A., 1994, Precursory swarms of long-period events at Redoubt Volcano (1989-1990), Alaska: Their origin and use as a forecasting tool, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska*: *Journal of Volcanology and Geothermal Research*, v. 62, p. 95-135.
- Chouet, Bernard, Saccorotti, G., Martini, M., Dawson, P., De Luca, G., Milana, G., and Scarpa, R., 1997, Source and path effects in the wave fields of tremor and explosions at Stromboli Volcano, Italy: *Journal of Geophysical Research*, v. 102, p. 15,129-15,150.
- Clague, D. A., and Denlinger, R. P., 1994, Role of olivine cumulates in destabilizing the flanks of Hawaiian volcanoes: *Bulletin of Volcanology*, v. 56, p. 425-434.
- Clague, D. A., Hon, K. A., Anderson, J. L., Chadwick, W. W., Jr., and Fox, C. G., 1994, Bathymetry of Puna Ridge, Kilauea Volcano, Hawaii: U.S. Geological Survey Miscellaneous Investigations Series Map MF-2237, 1 plate, scale 1:150,000.
- Clague, D. A., Moore, J. G., Dixon, J. E., and Friesen, W. B., 1995, Petrology of submarine lavas from Kilauea's Puna Ridge, Hawaii: *Journal of Petrology*, v. 36, p. 299-349.
- Clynne, M. A., 1998, Book review of *Volcanoes: Crucibles of Change* by R. V. Fisher, Grant Heiken, and J. B. Hulen, Princeton University, 315 p.: *Earth Sciences History*, v. 17, p. 62-64.
- Clynne, M. A., and Borg, L. E., 1997, Olivine and chromian spinel in primitive calc-alkaline and tholeiitic lavas from the southernmost Cascade Range, California: A reflection of relative fertility of the source, *in* Nixon, G. T., Johnston, A. D, and Martin, R. F., eds., *Nature and Origin of Primitive Magmas at Subduction Zones*, *Canadian Mineralogist*, v. 35, p. 453-472.
- Clynne, M. A., Duffield, W. A., Fournier, R. O., Giorgis, L. W., Janik, C. J., Kahsai, G., Lowenstern, J., Mariam, K. W., Smith, J. G., and Tesfai, T., 1996, Geology and geothermal Potential of Alid volcanic center, Eritrea, Africa: *Geothermal Resources Council Transactions*, v. 20, p. 279-286.
- Cole, P. D., Calder, E. S., Druitt, T. H., Hoblitt, R., Robertson, R., Sparks, R. S. J., and Young, S. R., 1998, Pyroclastic flows generated by gravitational instability of the 1996-97 lava dome of Soufrière Hills Volcano, Montserrat: *Geophysical Research Letters*, v. 25, p. 3425-3428.

- Conrey, R. M., Sherrod, D. R., Hooper, P. R., and Swanson, D. A., 1997, Diverse primitive magmas in the Cascade arc, northern Oregon and southern Washington, *in* Nixon, G. T., Johnston, A. D., and Martin, R. F., eds., *Nature and Origin of Primitive Magmas at Subduction Zones*, *Canadian Mineralogist*, v. 35, p. 367-396.
- Conrey, R. M., Sherrod, D. R., Uto, Kozo, and Uchiumi, Shigeru, 1996, Potassium-argon ages from Mount Hood area of Cascade Range, northern Oregon: *Isochron/West*, no. 63, p. 10-20.
- Cornelius, R. R., and Voight, B., 1996, Real-time seismic amplitude measurement (RSAM) and seismic spectral amplitude measurement (SSAM) analyses with the materials failure forecast method (FFM), June 1991 explosive eruption at Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle*, p. 249-267.
- Costa, J. E., 1994, Evolution of sediment yield from Mount St. Helens, Washington, 1980-93: Volcano hazards fact sheet, U.S. Geological Survey Open-File Report 94-313, 2 p.
- Costa, J. E., 1997, Hydraulic modeling for lahar hazards at Cascades volcanoes: *Environmental and Engineering Geoscience*, v. 3, p. 21-30.
- Costa, J. E., and O'Connor, J. E., 1995, Geomorphically effective floods, *in* Costa, J. E., Miller, A. J., Potter, K. W., and Wilcock, P. R., eds., *Natural and Anthropogenic Influences in Fluvial Geomorphology*, *Geophysical Monograph* 89, p. 45-56.
- Cramer, C. H., and McNutt, S. R., 1997, Spectral analysis of earthquakes in the 1989 Mammoth Mountain swarm near Long Valley, California: *Bulletin of the Seismological Society of America*, v. 87, p. 1454-1462.
- Crowley, J. K., and Zimbelman, D. R., 1997, Mapping hydrothermally altered rocks on Mount Rainier, Washington, with Airborne Visible/Infrared Imaging Spectrometer (AVIRIS) data: *Geology*, v. 25, p. 559-562.
- Cruz, F. G., and Chouet, B. A., 1997, Long-period events, the most characteristic seismicity accompanying the emplacement and extrusion of a lava dome in Galeras Volcano, Columbia, *in* 1991: *Journal of Volcanology and Geothermal Research*, v. 77, p. 121-158.
- Daag, A. S., Dolan, M. T., Laguerta, E. P., Meeker, G. P., Newhall, C. G., Pallister, J. S., and Solidum, R. U., 1996, Growth of a postclimactic lava dome at Mount Pinatubo, July–October 1992, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle*, p. 647-664.
- Daag, A. S., Tubianosa, B. S., Newhall, C. G., Tuñgol, N. M., Javier, D., Dolan, M. T., Delos Reyes, P. J., Arboleda, R. A., Martinez, M. M. L., and Regalado, M. T. M., 1996, Monitoring sulfur dioxide emission at Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle*, p. 409-414.
- David, C. P. C., Dulce, R. G., Nolasco-Javier, D. D., Zamoras, L. R., Jumawan, F. T., and Newhall, C. G., 1996, Changing proportions of two pumice types from the June 15, 1991, eruption of Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle*, p. 681-685.
- Dawson, P. B., Chouet, B. A., Lahr, J. C., Page, R. A., VanSchaack, J. R., and Criley, E. E., 1996, Data report for a seismic study of the *P* and *S* wave velocity structure of Redoubt Volcano, Alaska: U.S. Geological Survey Open-File Report 96-703, 43 p.
- Dawson, P. B., Dietel, C., Chouet, B. A., Honma, K., Ohminato, T., and Okubo, P., 1998, A digitally telemetered broadband seismic network at Kilauea Volcano, Hawaii: U.S. Geological Survey Open-File Report 98-108, 121 p.
- Dean, K., Bowling, S. A., Shaw, G., and Tanaka, H., 1994, Satellite analyses of movement and characteristics of the Redoubt Volcano plume, January 8, 1990, *in* Miller, T. P., and



- Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 339-352.
- Dean, K., Servilla, M., Roach, A., Foster, B., and Engle, K., 1998, Satellite monitoring of remote volcanoes improves study efforts in Alaska: *Eos Transactions of the American Geophysical Union*, v. 79, p. 413, 421-423.
- Dean, K. G., Whiting, L., and Jiao, Haitao, 1994, An aircraft encounter with a Redoubt ash cloud (a satellite view), *in* Casadevall, T. J., ed., *Proceedings of the first international symposium on volcanic ash and aviation safety*: U.S. Geological Survey Bulletin 2047, p. 333-339.
- Decker, Robert, and Decker, Barbara, 1997, *Volcanoes: Third Edition*, W. H. Freeman, New York, 321 p., 1 CD-ROM.
- Decker, R. W., Klein, F. W., Okamura, A. T., and Okubo, P. G., 1995, Forecasting eruptions of Mauna Loa Volcano, Hawaii, *in* Rhodes, J. M., and Lockwood, J. P., eds., *Mauna Loa revealed; structure, composition, history, and hazards*: American Geophysical Union, *Geophysical Monograph* 92, p. 337-348.
- Delaney, P. T., Denlinger, R. P., Lisowski, Michael, Miklius, Asta, Okubo, P. G., Okamura, A. T., and Sako, M. K., 1998, Volcanic spreading at Kilauea, 1976-1996: *Journal of Geophysical Research*, v. 103, p. 18,003-18,023.
- Delaney, P. T., and Gartner, A. E., 1995, Physical processes of shallow mafic dike emplacement near the San Rafael Swell, Utah: U.S. Geological Survey Open-File Report 95-491, 47 p.
- Delaney, P. T., and Gartner, A. E., 1997, Physical processes of shallow mafic dike emplacement near the San Rafael Swell, Utah: *Geological Society of America Bulletin*, v. 109, p. 1177-1192.
- Delaney, P. T., and McTigue, D. F., 1994, Volume of magma accumulation or withdrawal estimated from surface uplift or subsidence, with application to the 1960 collapse of Kilauea Volcano: *Bulletin of Volcanology*, v. 56, p. 417-424.
- Delaney, P. T., Miklius, A., Arnadottir, T., Okamura, A. T., and Sako, M. K., 1994, Motion of Kilauea volcano during sustained eruption from the Puu Oo and Kupaianaha vents, 1983-1991; supplemental information: U.S. Geological Survey Open-File Report 94-567, 23 p.
- Delaney, P. T., Sass, J. H., Duffield, W. A., and Kauahikaua, J. P., 1995, Temperature and response time of magma hydrothermal systems, with an example from Kilauea, Hawaii: *Proceedings, World Geothermal Congress, Florence, Italy, 18-31 May, 1995*, v. 2., p. 1239-1244.
- Delfin, F. G., Jr., Newhall, C. G., Martinez, M. L., Salonga, N. D., Bayon, F. E. B., Trimble, D., and Solidum, R., 1997, Geological,  $^{14}\text{C}$ , and historical evidence for a 17th century eruption of Parker Volcano, Mindanao, Philippines: *Journal of the Geological Society of the Philippines*, v. 52, p. 25-42.
- DeNatale, J. S., Fiegel, G. L., Iverson, R. M., Major, J. J., LaHusen, R. G., Duffy, J. D., and Fisher, G. D., 1997, Response of flexible wire rope barriers to debris-flow loading, *in* Chen, Cheng-lung, ed., *Debris-Flow Hazards Mitigation: Mechanics, Prediction, and Assessment, Proceedings of First International Conference, San Francisco, 1997*: New York, American Society of Civil Engineers, p. 616-625.
- Denlinger, R. P., 1997, A dynamic balance between magma supply and eruption rate at Kilauea volcano, Hawaii: *Journal of Geophysical Research*, v. 102, p. 18,091-18,100.
- Denlinger, R. P., and Okubo, P., 1995, Structure of the south flank of Kilauea volcano, Hawaii: *Journal of Geophysical Research*, v. 100, p. 24,499-24,507.
- Dieterich, J. H., and Okubo, P. G., 1996, An unusual pattern of recurring seismic quiescence at Kalapana, Hawaii: *Geophysical Research Letters*, v. 23, p. 447-450.
- Dinehart, R. L., 1997, Sediment transport in the hyperconcentrated phase of the March 19, 1982, lahar, *in* Pierson, T. C., ed., *Hydrologic consequences of hot-rock/snowpack*

- interactions at Mount St. Helens Volcano, Washington, 1982-84: U.S. Geological Survey Open-File Report 96-179, p. 37-52.
- Dinehart, R. L., 1998, Sediment transport at gaging stations near Mount St. Helens, Washington, 1980-90. Data collection and analysis: U.S. Geological Survey Professional Paper 1573, 105 p.
- Dixon, T. H., Mao, Ailin, Bursik, Marcus, Heflin, Michael, Langbein, John, Stein, Ross, and Webb, Frank, 1997, Continuous monitoring of surface deformation at Long Valley caldera, California, with GPS: *Journal of Geophysical Research*, v. 102, p. 12,017-12,034.
- Doeblich, J. L., Albino, G. V., Barker, C. E., Duffield, W. A., Dunn, V. C., Hanna, W. F., McFarlan, J. P., McGuire, D. J., Miller, M. S., Peters, S. G., Plouff, D., Raines, G. L., Sawatzky, D. L., and Spanski, G. T., 1994, Resource assessment of the Bureau of Land Management's Winnemucca District and Surprise Resource Area, Northwest Nevada and Northeast California: U.S. Geological Survey Open-File Report 94-712, 101 p.
- Donnelly-Nolan, J. M., 1998, Abrupt shift in  $^{18}\text{O}$  values at Medicine Lake Volcano (California, USA): *Bulletin of Volcanology*, v. 59, p. 529-536.
- Dorava, J. M., and Meyer, D. F., 1994, Hydrologic hazards in the lower Drift River basin associated with the 1989-1990 eruptions of Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska: Journal of Volcanology and Geothermal Research*, v. 62, p. 387-407.
- Dorava, J. M., and Waythomas, C. F., 1994, Hydrologic hazards at Alaska volcanoes: Chakachatna River basin near Crater Peak, Spurr Volcano: U.S. Geological Survey Fact Sheet 94-58, 2 p.
- Doukas, M. P., 1995, A compilation of sulfur dioxide and carbon dioxide emission-rate data from Cook Inlet volcanoes (Redoubt, Spurr, Iliamna, and Augustine), Alaska during the period from 1990 to 1994: U.S. Geological Survey Open-File Report 95-55, 16 p.
- Doukas, M. P., and Gerlach, T. M., 1995, Sulfur dioxide scrubbing during the 1992 eruptions of Crater Peak, Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., *The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin* 2139, p. 47-57.
- Doukas, M. P., McGimsey, R. G., and Dorava, J. M., 1995, 10 years of volcanic activity in Alaska; 1983 to 1992; a video: U.S. Geological Survey Open-File Report 95-61, 23 p., One VHS videotape.
- Driedger, C. L., 1998, Volcanoes--changing forms and attitude, *in* Kirk, Ruth, *Sunrise to Paradise, The Story of Mount Rainier National Park: Northwest Interpretive Association*, p. 9.
- Driedger, C. L., Faust, L., Lane, L., Smith, M., and Smith, R., 1998, Mount Rainier--the volcano in your back yard, poster and activity guide: U.S. Geological Survey Miscellaneous Publication, 2 p.
- Driedger, C. L., Wolfe, E. W., and Scott, K. M., 1998, Living with a volcano in your back yard: Mount Rainier volcanic hazards, A prepared presentation for use by public officials and educators: U.S. Geological Survey Open-File Report 98-519A, 54 p.
- Duchi, Vittorio, Campana, M. E., Minissale, Angelo, and Thompson, J. M., 1994, Geochemistry of thermal fluids on the volcanic Isle of Pantelleria, southern Italy: *Applied Geochemistry*, v. 9, p. 147-160.
- Duffield, Wendell, 1995, 7 articles on volcanoes, *Arizona Daily Sun*.
- Duffield, W. A., 1997, Volcanoes of northern Arizona: Grand Canyon Association, 68 p.
- Duffield, W. A., 1998, One person's story about three decades of his research on igneous rocks: *Journal of Volcanology and Geothermal Research*, v. 87, p. 1-5.
- Duffield, W. A., Bullen, T. D., Clynne, M. A., Fournier, R. O., Janik, C. J., Lanphere, M. A., Lowenstern, Jacob, Smith, J. G., W/Giorgis, Leake, Kahsai, Gabreab, W/Mariam, Kidane, and Tesfai, Theoderos, 1997, Geothermal potential of the Alid volcanic center, Danakil Depression, Eritrea: U.S. Geological Survey Open-File Report 97-291, 66 p.

- Duffield, W. A., Clynne, M. A., Fournier, R. O., Janik, C. J., Lowenstern, J., and Smith, J. G., 1996, A geothermal resource for Eritrea, an energy-poor African nation: Proceedings of the 18th New Zealand Geothermal Workshop, p. 115–120.
- Duffield, W. A., and Ruiz, Joaquin, 1998, A model that helps explain Sr-isotope disequilibrium between feldspar phenocrysts and melt in large-volume silicic magma systems: *Journal of Volcanology and Geothermal Research*, v. 87, p. 7-13.
- Duffield, W. A., Ruiz, Joaquin, and Webster, J. D., 1995, Roof-rock contamination of magma along the top of the reservoir for the Bishop Tuff: *Journal of Volcanology and Geothermal Research*, v. 69, p. 187-195.
- Duffield, W. A., Sass, J. H., and Sorey, M. L., 1994, Tapping the Earth's natural heat: U.S. Geological Survey Circular 1125, 63 p.
- Dvorak, J. J., 1994, An earthquake cycle along the south flank of Kilauea Volcano, Hawaii: *Journal of Geophysical Research*, v. 99, p. 9533-9541.
- Dvorak, J. J., and Dzurisin, Daniel, 1997, Volcano geodesy: The search for magma reservoirs and the formation of eruptive vents: *Reviews of Geophysics*, v. 35, p. 343-384.
- Dvorak, J. J., Klein, F. W., and Swanson, D. A., 1994, Relaxation of the south flank after the 7.2-magnitude Kalapana earthquake, Kilauea Volcano, Hawaii: *Bulletin of the Seismological Society of America*, v. 84, p. 133-141.
- Dvorak, J. J., Okamura, A. T., Lisowski, M., Prescott, W. H., and Svarc, J. L., 1994, Global Positioning System measurements on the Island of Hawaii from 1987 to 1990: *U.S. Geological Survey Bulletin* 2092, 33 p.
- Dzurisin, Daniel, Christiansen, R. L., and Pierce, K. L., 1995, Yellowstone; restless volcanic giant: *Volcano hazards fact sheet*, U.S. Geological Survey Open-File Report 95-59, 2 p.
- Dzurisin, Daniel, Lockwood, J. P., Casadevall, T. J., and Rubin, M., 1995, The Uwekahuna ash member of the Puna Basalt: product of violent phreatomagmatic eruptions at Kilauea volcano, Hawaii, between 2800 and 2100 <sup>14</sup>C years ago: *Journal of Volcanology and Geothermal Research*, v. 66, p. 163-184.
- Dzurisin, Dan, Stauffer, P. H., and Hendley, J. W., II, 1997, Living with volcanic risk in the Cascades: *U.S. Geological Survey Fact Sheet* 165-97, 2 p.
- Dzurisin, D., Yamashita, K. M., and Kleinman, J. W., 1994, Mechanisms of crustal uplift and subsidence at the Yellowstone caldera, Wyoming: *Bulletin of Volcanology*, v. 56, p. 261-270.
- Eichelberger, J. C., 1995, Silicic volcanism; ascent of viscous magmas from crustal reservoirs: *Annual Review of Earth and Planetary Sciences*, v. 25, p. 41-63.
- Eichelberger, J. C., 1997, Drilling volcanoes: *Science*, v. 278, p. 1084-1085.
- Eichelberger, J. C., 1998, *Volcanology: Encyclopedia of Applied Physics*, John Wiley and Sons, New York, v. 23, p. 321-353.
- Eichelberger, J. C., Keith, T. E. C., Miller, T. P., and Nye, C. J., 1995, The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: chronology and summary, *in* Keith, T. E. C., ed., *The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska*: U.S. Geological Survey Bulletin 2139, p. 1-18.
- Eichelberger, J. C., and Nakada, S., 1996, Exploring the interior of an active andesite-arc volcano, *in* Proceedings of the VIIIth International Symposium on the Observation of the Continental Crust Through Drilling, Tsukuba, Japan, p. 67-72.
- Elias, Tamar, Sutton, A. J., Stokes, J. B., and Casadevall, T. J., 1998, Sulfur dioxide emission rates of Kilauea Volcano, Hawaii, 1979-1997: *U.S. Geological Survey Open-File Report* 98-462, 41 p.
- Endo, E. T., Murray, T. L., and Power, J. A., 1996, A comparison of preeruption real-time seismic amplitude measurements for eruptions at Mount St. Helens, Redoubt Volcano, Mount Spurr, and Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 233-247.

- Evans, J. R., Foulger, G. R., Julian, B. R., and Miller, A. D., 1996, Shear-wave splitting from local earthquakes in the Hengill triple junction, southwest Iceland: *Geophysical Research Letters*, v. 23, p. 455-458.
- Evans, J. R., and Julian, B. R., 1995, Shear-wave splitting from local earthquakes at The Geysers geothermal field, California: *Geophysical Research Letters*, v. 22, p. 501-504.
- Evans, J. R., and Pitt, A. M., 1995, Reliable automatic detection of long-period volcanic earthquakes at Long Valley Caldera, California: *Bulletin of the Seismological Society of America*, v. 85, p. 1518-1522.
- Evans, W. C., 1996, Lake Nyos; knowledge of the fount and the cause of disaster: *Nature*, v. 379, no. 6560, p. 21-22.
- Evans, W. C., Sorey, M. L., Michel, R. L., Kennedy, B. M., and Hainsworth, L. J., 1998, Gas-water interaction at Mammoth Mountain volcano, California, USA, *in* Arehart, G. B., and Hulston, J. R., eds., *Water-Rock Interaction, Proceedings of the 9th International Symposium on Water-Rock Interaction*, Taupo, New Zealand, Balkema, Rotterdam, p. 443-446.
- Evans, W. C., White, L. D., Tuttle, M. L., Kling, G. W., Tanyileke, G., and Michel, R. L., 1994, Six years of change at Lake Nyos, Cameroon, yield clues to the past and cautions for the future: *Geochemical Journal*, v. 28, no. 3, p. 139-162.
- Ewert, J. W., Lockhart, A. B., Marcial, S., and Ambubuyog, G., 1996, Ground deformation prior to the 1991 eruptions of Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 329-338.
- Ewert, J. W., and Miller, C. D., 1995, The USGS/OFDA Volcano Disaster Assistance Program: Volcano hazards fact sheet, U.S. Geological Survey Open-File Report 95-553, 2 p.
- Ewert, J. W., Miller, C. D., Hendley, J. W., II, and Stauffer, P. H., 1997, Mobile response team saves lives in volcano crises: U.S. Geological Survey Fact Sheet 64-97, 2 p.
- Ewert, J. W., Murray, T. L., Lockhart, A. B., and Miller, C. D., 1993 (1995), Preventing volcanic catastrophe: the U.S. international volcano disaster assistance program: *Earthquakes and Volcanoes*, v. 24, no. 6, p. 270-291.
- Ewert, J. W., Myers, B. M., and Brantley, S. R., 1994, Preparing for the next eruption in the Cascades: Volcano hazards fact sheet, U.S. Geological Survey Open-File Report 94-585, 4 p.
- Farrar, C. D., Sorey, M. L., Evans, W. C., Howle, J. F., Kerr, B. D., Kennedy, B. M., King, C.-Y., and Southon, J. R., 1995, Forest-killing diffuse CO<sub>2</sub> emission at Mammoth Mountain as a sign of magmatic unrest: *Nature*, v. 376, no. 6542, p. 675-678.
- Fierstein, Judy, Hildreth, Wes, Hendley, J. W., II, and Stauffer, P. H., 1998, Can another great volcanic eruption happen in Alaska?: U.S. Geological Survey Fact Sheet 75-98, 2 p.
- Fierstein, J., Houghton, B. F., Wilson, C. J. N., and Hildreth, W., 1997, Complexities of plinian fall deposition at vent: an example from the 1912 Novarupta eruption (Alaska): *Journal of Volcanology and Geothermal Research*, v. 76, p. 215-227.
- Finn, Carol, 1994, Aeromagnetic evidence for a buried Early Cretaceous magmatic arc, northeast Japan: *Journal of Geophysical Research*, v. 99, p. 22,165-22185.
- Fleck, R. J., Turrin, B. D., Sawyer, D. A., Warren, R. G., Champion, D. E., Hudson, M. R., and Minor, S. A., 1996, Age and character of basaltic rocks of the Yucca mountain region, southern Nevada: *Journal of Geophysical Research*, v. 101, p. 8205-8227.
- Flowers, Chris, 1997, Observations of geothermal activity near Pavlof Volcano on the Alaska Peninsula during March and April of 1996: U.S. Geological Survey Open-File Report 97-146, 13 p.
- Fodor, R. V., and Moore, R. B., 1994, Petrology of the gabbroic xenoliths in 1960 Kilauea basalt; crystalline remnants of prior (1955) magmatism: *Bulletin of Volcanology*, v. 56, p. 62-74.

- Foulger, G. R., Grant, C. C., Ross, A., and Julian, B. R., 1997, Industrially induced changes in Earth structure at The Geysers geothermal area, California: *Geophysical Research Letters*, v. 24, p. 135-137.
- Foulger, G. R., Malin, P. E., Shalev, E., Julian, B. R., and Hill, D. P., 1998, Seismic monitoring and activity increase in California caldera: *Eos Transactions of the American Geophysical Union*, v. 79, p. 357, 363.
- Fountain, A. G., and Walder, J. S., 1998, Water flow through temperate glaciers: *Reviews of Geophysics*, v. 36, p. 299-328.
- Fournier, R. O., 1996, Compressive and tensile failure at high fluid pressure where preexisting fractures have cohesive strength, with application to the San Andreas Fault: *Journal of Geophysical Research*, v. 101, p. 25,499-25,509.
- Fournier, R. O., Christiansen, R. L., Hutchinson, R. A., and Pierce, K. L., 1994, A field-trip guide to Yellowstone National Park, Wyoming, Montana, Idaho; volcanic, hydrothermal, and glacial activity in the region: *U.S. Geological Survey Bulletin* 2099, 46 p.
- Fournier, R. O., Kennedy, B. M., Aoki, M., and Thompson, J. M., 1994, Correlation of gold in siliceous sinters with  $^3\text{He}/^4\text{He}$  in hot spring waters of Yellowstone National Park: *Geochimica et Cosmochimica Acta*, v. 58, p. 5401-5419.
- Fournier, R. O., and Moore, J. N., 1995, Trace metals and major and rare earth elements in cuttings from five high-temperature wells in the northwest region of The Geysers, California, vapor-dominated geothermal system: *U.S. Geological Survey Open-File Report* 95-30, 11 p.
- Fournier, R. O., Thompson, J. M., and Hutchinson, R. A., 1994, The geochemistry of hot spring waters at Norris Geysers Basin, Yellowstone National Park: *Geothermal Resources Council, Transactions*, v. 18, p. 177-179.
- Friedman, I., 1994, Effect of potential geothermal development on the thermal features of Yellowstone National Park; Part 1, Perspective 3; Possible effect of nearby geothermal development on Yellowstone National Park: *GSA Today*, v. 4, no. 12, p. 297-299.
- Fries, Carl, Jr., Segerstrom, K., Tilling, R. I., White, D. E., and Wilcox, R. E.; translated by Susan Garcia, 1995, *Cinemetraje de las actividades del volcán Parícutin, Michoacán, México, 1945-1952* [Movie footage of the activity of Parícutin Volcano, State of Michoacan, Mexico, 1945-1952]: *U.S. Geological Survey Open-File Report* 95-664 (Spanish version of Open-File 93-197), 17 p., One VHS videotape.
- Garcés, M. A., 1997, On the volcanic waveguide: *Journal of Geophysical Research*, v. 102, p. 22,547-22,564.
- Garcés, M. A., and McNutt, S. R., 1997, Theory of the airborne sound field generated in a resonant magma conduit: *Journal of Volcanology and Geothermal Research*, v. 78, p. 155-178.
- Gardner, C. A., 1994, Temporal, spatial and petrologic variations of lava flows from the Mount Bachelor volcanic chain, central Oregon High Cascades: *U.S. Geological Survey Open-File Report* 94-261, 100p., 1 plate, scale 1:24,000.
- Gardner, C. A., Cashman, K. V., and Neal, C. A., 1998, Tephra-fall deposits from the 1992 eruption of Crater Peak, Alaska: implications of clast features for eruptive processes: *Bulletin of Volcanology*, v. 59, p. 537-555.
- Gardner, C. A., Neal, C. A., Waitt, R. B., and Janda, R. J., 1994, Proximal pyroclastic deposits from the 1989-1990 eruption of Redoubt Volcano, Alaska - Stratigraphy, distribution, and physical characteristics, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska*: *Journal of Volcanology and Geothermal Research*, v. 62, p. 213-250.
- Gardner, C. A., Scott, K. M., Miller, C. D., Myers, B., Hildreth, W., and Pringle, P. T., 1995, Potential volcanic hazards from future activity of Mount Baker, Washington: *U.S. Geological Survey Open-File Report* 95-498, 16p., 1 plate, scale 1:100,000.
- Gerlach, T. M., Delgado, H., McGee, K. A., Doukas, M. P., Venegas, J. J., and Cárdenas, L., 1997, Application of the LI-COR CO<sub>2</sub> analyzer to volcanic plumes: A case study,

- volcán Popocatepetl, Mexico, June 7 and 10, 1995: *Journal of Geophysical Research*, v. 102, p. 8,005-8,019.
- Gerlach, T. M., Doukas, M. P., McGee, K. A., and Kessler, Richard, 1998, Three-year decline in magmatic CO<sub>2</sub> emissions from soils of a Mammoth Mountain tree kill: Horseshoe Lake, CA, 1995-1997: *Geophysical Research Letters*, v. 25, p. 1947-1950.
- Gerlach, T. M., and McGee, K. A., 1994, Total sulfur dioxide emissions and pre-eruption vapor-saturated magma at Mount St. Helens, 1980-88: *Geophysical Research Letters*, v. 21, p. 2833-2836.
- Gerlach, T. M., McGee, K. A., Sutton, A. J., and Elias, Tamar, 1998, Rates of volcanic CO<sub>2</sub> degassing from airborne determinations of SO<sub>2</sub> emission rates and plume CO<sub>2</sub>/SO<sub>2</sub>: Test study at Pu`u`O`o cone, Kilauea volcano, Hawaii: *Geophysical Research Letters*, v. 25, p. 2675-2678.
- Gerlach, T. M., Westrich, H. R., Casadevall, T. J., and Finnegan, D. L., 1994, Vapor saturation and accumulation in magmas of the 1989-1990 eruption of Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska: Journal of Volcanology and Geothermal Research*, v. 62, p. 317-337.
- Gerlach, T. M., Westrich, H. R., and Symonds, R. B., 1996, Preeruption vapor in magma of the climactic Mount Pinatubo eruption: source of the giant stratospheric sulfur dioxide cloud, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle*, p. 415-433.
- Getahun, Aberra, Reed, M. H., and Symonds, R., 1996, Mount St. Augustine volcano fumarole wall rock alteration: mineralogy, zoning, composition and numerical models of its formation process: *Journal of Volcanology and Geothermal Research*, v. 71, p. 73-107.
- Gillard, Dominique, Rubin, A. M., and Okubo, P. G., 1996, Highly concentrated seismicity caused by deformation of Kilauea's deep magma system: *Nature*, v. 384, no. 6607, p. 343-346.
- Gillard, Dominique, Wyss, Max, and Okubo, Paul, 1996, Types of faulting and orientation of stress and strain as a function of space and time in Kilauea's south flank, Hawaii: *Journal of Geophysical Research*, v. 101, p. 16,025-16,042.
- Glicken, Harry, 1996, Rockslide-debris avalanche of May 18, 1980, Mount St. Helens Volcano, Washington: U.S. Geological Survey Open-File Report 96-677, 90 p., 5 plates scale 1:12,000 and 1:24,000.
- Goff, Fraser, Evans, W. C., Gardner, J. N., Adams, A., Janik, C. J., Kennedy, B. M., Trujillo, P. E., and Counce, D., 1994, Interpretation of *in-situ* fluid samples from geothermal wells: example from hole VC-2B, Valles caldera, New Mexico: *Geothermal Science and Technology*, v. 4, p. 97-128.
- Goff, Fraser, Janik, C. J., Bergfeld, Deborah, Counce, Dale, Bruton, C. J., and Nimz, Gregory, 1998, Geothermal chemistry/exploration investigations at Dixie Valley, Nevada, *in*, *Proceedings Geothermal Program Review XVI*, April 1-2, 1998, Berkeley, Calif., U.S. Department of Energy, DOE/EE-0188, p. 2-9-2-15.
- Goff, Fraser, Janik, C. J., Delgado, Hugo, Werner, Cindy, Counce, Dale, Stimac, J. A., Siebe, Claus, Love, S. P., Williams, S. N., Fischer, Tobias, and Johnson, L., 1998, Geochemical surveillance of magmatic volatiles at Popocatepetl volcano, Mexico: *Geological Society of America Bulletin*, v. 110, p. 695-710.
- Goff, F., Janik, C. J., and Stimac, J. A., 1995, Sulphur Bank Mine, California: an example of a magmatic rather than metamorphic hydrothermal system?: *Proceedings, World Geothermal Congress, Florence, Italy, 18-31 May, 1995*, v. 2., p. 1105-1110.
- Goff, Sue, Duffield, W., Goff, F., Heiken, G., and Janik, C. J., 1994, Application of scientific core drilling to geothermal exploration: Platanares, Honduras, and Tecuamburro Volcano, Guatemala, Central America: *Proceedings of the VIIth International Symposium on the Observation of the Continental Crust Through Drilling, Santa Fe*, p. 78-81.

- Goldstein, P., and Chouet, B. A., 1994, Array measurements and modeling sources of shallow volcanic tremors at Kilauea Volcano, Hawaii: *Journal of Geophysical Research*, v. 99, p. 2637-2652.
- Grove, T. L., Donnelly-Nolan, J. M., and Housh, Todd, 1997, Magmatic processes that generated the rhyolite of Glass Mountain, Medicine Lake volcano, N. California: *Contributions to Mineralogy and Petrology*, v. 127, p. 205-223.
- Guffanti, M., Clynne, M. A., and Muffler, L. J. P., 1996, Thermal and mass implications of magmatic evolution in the Lassen volcanic region, California, and minimum constraints on basalt influx to the lower crust: *Journal of Geophysical Research*, v. 101, p. 3003-3013.
- Guffanti, M., and Muffler, L. J. P., 1995, Geothermal potential of diverse volcanotectonic settings of the Cascade Range, USA: *Proceedings, World Geothermal Congress, Florence, Italy, 18-31 May, 1995*, v. 2., p. 719-724.
- Hagstrum, J. T., and Champion, D. E., 1994, Paleomagnetic correlation of Late Quaternary lava flows in the lower east rift zone of Kilauea Volcano, Hawaii: *Journal of Geophysical Research*, v. 99, p. 21,679-21,690.
- Hagstrum, J. T., and Champion, D. E., 1995, Late quaternary geomagnetic secular variation from historical and 14 C-dated lava flows on Hawaii: *Journal of Geophysical Research*, v. 100, p. 24,393-24,403.
- Harbin, M. L., Swanson, S. E., Nye, C. J., and Miller, T. P., 1995, Preliminary petrology and chemistry of proximal eruptive products: 1992 eruptions of Crater Peak, Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., *The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska*: U.S. Geological Survey Bulletin 2139, p. 139-148.
- Harlow, D. H., Power, J. A., Laguerta, E. P., Ambubuyog, G., White, R. A., and Hoblitt, R. P., 1996, Precursory seismicity and forecasting of the June 15, 1991, eruption of Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 285-305.
- Harris, A. J. L., Keszthelyi, Laszlo, Flynn, L. P., Mougins-Mark, P. J., Thornber, Carl, Kauahikaua, James, Sherrod, David, Trusdell, Frank, Sawyer, M. W., and Flament, Pierre, 1997, Chronology of the episode 54 eruption at Kilauea Volcano, Hawaii, from GOES-9 satellite data: *Geophysical Research Letters*, v. 24, p. 3281-3284.
- Hawaiian Volcano Observatory Library, 1997, Computerized bibliographic database of publications relating to diversion of lava flows, *in*, Williams, R. S., Jr., ed., *Lava-cooling operations during the 1973 eruption of Eldfell Volcano, Heimaey, Vestmannaeyjar, Iceland*: U.S. Geological Survey Open-File Report 97-724, p. 67-73.
- Hayba, D. O., and Ingebritsen, S. E., 1994, The computer model HYDROTHERM, a three-dimensional finite-difference model to simulate ground-water flow and heat transport in the temperature range of 0 to 1,200°C: U.S. Geological Survey Water Resources Investigations Report 94-4045, 85 p.
- Hayba, D. O., and Ingebritsen, S. E., 1994, Flow near the critical point: Examination of some pressure-enthalpy paths: *Proceedings of the Nineteenth Workshop on Geothermal Reservoir Engineering, Stanford University*, p. 83-89.
- Hayba, D. O., and Ingebritsen, S. E., 1997, Multiphase groundwater flow near cooling plutons: *Journal of Geophysical Research*, v. 102, p. 12,235-12,252.
- Hearn, B. C., Jr., Donnelly-Nolan, J. M., and Goff, F. E., 1995, Geologic map and structure sections of the Clear Lake Volcanics, Northern California: U.S. Geological Survey Miscellaneous Investigations Map I-2362, 3 plates, scale 1:24,000.
- Hedenquist, J. W., and Lowenstern, J. B., 1994, The role of magmas in the formation of hydrothermal ore deposits: *Nature*, v. 370, no. 6490, p. 519-527.
- Heiken, G., Murphy, M., Hackett, W., and Scott, W., 1995, Volcanic hazards to energy infrastructure - ash fallout hazards and their mitigation: *Proceedings, World Geothermal Congress, Florence, Italy, 18-31 May, 1995*, v. 4, p. 2795-2798.

- Hein, J. R., Gibbs, A. E., Clague, D. A., and Torresan, Michael, 1996, Hydrothermal mineralization along submarine rift zones, Hawaii: *Marine Georesources and Geotechnology*, v. 14, p. 177-203.
- Heliker, C., 1995, Inclusions in Mount St. Helens dacite erupted from 1980 through 1983: *Journal of Volcanology and Geothermal Research*, v. 66, p. 115-135.
- Heliker, C. C., Mangan, M. T., Mattox, T. N., and Kauahikaua, J. P., 1998, The Pu`u `Ō`ō - Kūpaianaha eruption of Kīlauea, November 1991–February 1994: Field data and flow maps: U.S. Geological Survey Open-File Report 98-103, 10 p., 2 plates, scale 1:50,000.
- Heliker, C. C., Mangan, M. T., Mattox, T. N., Kauahikaua, J. P., and Helz, R. T., 1998, The character of long-term eruptions: inferences from episodes 50–53 of the Pu`u `Ō`ō - Kūpaianaha eruption of Kīlauea volcano: *Bulletin of Volcanology*, v. 59, p. 381-393.
- Heliker, Christina, Stauffer, P. H., and Hendley, J. W., II, 1997, Living on active volcanoes—the Island of Hawaii: U.S. Geological Survey Fact Sheet 74-97, 2 p.
- Helz, R. T., Banks, N. G., Heliker, C., Neal, C. A., and Wolfe, E. W., 1995, Comparative geothermometry of recent Hawaiian eruptions: *Journal of Geophysical Research*, v. 100, p. 17,637-17,657.
- Helz, R. T., and Hearn, B. C., Jr., 1998, Compositions of glasses from the Pu'u O'o--Kūpaianaha eruption of Kīlauea Volcano, Hawaii January 1983 through December 1994: U.S. Geological Survey Open-File Report 98-511, 75 p.
- Helz, R. T., Kirschenbaum, H. K., Marinenko, J. W. and Qian, R., 1994, Whole-rock analyses of core samples from the 1967, 1975, 1979 and 1981 drillings of Kīlauea Iki lava lake, Hawaii: U.S. Geological Survey Open-File Report 94-684, 65 p.
- Herrero-Bervera, E., Helsley, C. E., Sarna-Wojcicki, A. M., Lajoie, K. R., Meyer, C. E., McWilliams, M. O., Negrini, R. M., Turrin, B. D., Donnelly-Nolan, J. M., and Liddicoat, J. C., 1994, Age and correlation of a paleomagnetic episode in the western United States by  $^{40}\text{Ar}/^{39}\text{Ar}$  dating and tephrochronology: The Jamaica, Blake, or a new polarity episode?: *Journal of Geophysical Research*, v. 99, p. 24,091-24,103
- Hickman, Stephen, Barton, Colleen, Zoback, Mark, Morin, Roger, Sass, John, and Benoit, Richard, 1997, In-situ stress and fracture permeability in a fault-hosted geothermal reservoir at Dixie Valley, Nevada: *Geothermal Resources Council Transactions*, v. 21, p. 181-189.
- Hickman, Stephen, Barton, Colleen, Zoback, Mark, Morin, Roger, Benoit, Dick, and Sass, John, 1998, Fracture permeability and in situ stress in the Dixie Valley, Nevada, geothermal reservoir *in*, *Proceedings Geothermal Program Review XVI*, April 1-2, 1998, Berkeley, Calif., U.S. Department of Energy, DOE/EE-0188, p. 3-31-3-38.
- Hickman, S., and Zoback, M., 1996, In-situ stress in a fault-hosted geothermal reservoir at Dixie Valley, Nevada, *in* *Proceedings of the VIIIth International Symposium on the Observation of the Continental Crust through Drilling*, Tsukuba, Japan, p. 216-221.
- Hickman, Stephen, and Zoback, Mark, 1997, In-situ stress in a fault-hosted geothermal reservoir at Dixie Valley, Nevada: *Proceedings, Twenty-second Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford, California, p.141-146.
- Hickman, Stephen, Zoback, Mark, and Benoit, Richard, 1998, Tectonic controls on reservoir permeability in the Dixie Valley, Nevada, geothermal field: *Proceedings, Twenty-third Workshop on Geothermal Reservoir Engineering*, Stanford University, Stanford, California, p. 291-298.
- Hildenbrand, T. G., Blakely, R. J., Bracken, R. E., Edwards, Lynn, Hardwick, Doug, Hinze, W. J., Labson, Vic, Malliot, Hal, Nabighian, Misac, Nilsson, Bruno, Phillips, Jeff, Quinn, J. M., and Roest, Walter, 1996, Rationale and preliminary operational plan for a high-altitude magnetic survey over the United States: U.S. Geological Survey Open-File Report 96-276, 55 p.
- Hildenbrand, T. G., Blakely, R. J., Hinze, W. J., Keller, G. R., Langel, R. A., Nabighian, M., and Roest, W., 1996, Aeromagnetic survey over U. S. to advance geomagnetic



- research: *Eos Transactions of the American Geophysical Union*, v. 77, n. 28, p. 265 & 268.
- Hildreth, Wes, 1996, Kulshan caldera: A Quaternary subglacial caldera in the North Cascades, Washington: *Geological Society of America Bulletin*, v. 108, p. 786-793.
- Hildreth, W., and Fierstein, J., 1995, Geologic map of the Mount Adams volcanic field, Cascade Range of southern Washington: U.S. Geological Survey, I-2460, scale 1:50,000.
- Hildreth, W., and Fierstein, J., 1997, Recent eruptions of Mount Adams, Washington Cascades, USA: *Bulletin of Volcanology*, v. 58, p. 472-490.
- Hildreth, W., and Lanphere, M. A., 1994, Potassium-argon geochronology of a basalt-andesite-dacite arc system: The Mount Adams volcanic field, Cascade Range of southern Washington: *Geological Society of America Bulletin*, v. 106, p. 1413-1429.
- Hildreth, W., Singer, B., Godoy, E., and Munizaga, F., 1998, The age and constitution of Cerro Campanario, a mafic stratovolcano in the Andes of Central Chile: *Revista Geológica de Chile*, v. 25, p. 3-14.
- Hill, D. P., 1996, Earthquakes and carbon dioxide beneath Mammoth Mountain, CA: *Seismological Research Letters*, v. 67, no. 1, p. 8-15.
- Hill, D. P., 1998, 1998 SSA Meeting—Presidential Address: Science, geologic hazards, and the public in a large, restless caldera: *Seismological Research Letters*, v. 69, p. 400-404.
- Hill, D. P., Bailey, R. A., Miller, C. D., Hendley, J. W., II, and Stauffer, P. H., 1997, Future eruptions in California's Long Valley area—What's likely?: U.S. Geological Survey Fact Sheet 73-97, 2 p.
- Hill, D. P., Bailey, R. A., Sorey, M. L., Hendley, J. W., II, and Stauffer, P. H., 1996, Living with a restless caldera — Long Valley, California: U.S. Geological Survey Fact Sheet 108-96, 2 p.
- Hill, D. P., Gasparini, P., McNutt, S. R., and Rymer, H., eds., 1994, Internal structure of volcanoes and geophysical precursors of eruptions: *Journal of Volcanology and Geothermal Research*, v. 61, p. 121-328.
- Hill, D. P., Johnston, M. J., Langbein, J. O., and Behr, J., 1994, The role of crustal fluids in the triggered seismicity of Long Valley Caldera to the  $M = 7.3$  Landers, California, earthquake, *in* Hickman, S. H., Sibson, R. H., Bruhn, R. L., and Jacobson, M. L., eds., *Proceedings of Workshop LXIII; USGS Red-Book conference on the mechanical involvement of fluids in faulting*, U.S. Geological Survey Open-File Report, 94-228, p. 87-91.
- Hill, D. P., Johnston, M. J. S., Langbein, J. O., and Bilham, R., 1995, Response of Long Valley caldera to the  $M_w = 7.3$  Landers, California, earthquake: *Journal of Geophysical Research*, v. 100, p. 12,985-13,005.
- Hill, D. P., Sorey, M. L., Ellsworth, W. L., and Sass, John, 1998, Scientific drilling continues in Long Valley, California: *Eos Transactions of the American Geophysical Union*, v. 79, p. 429, 432.
- Hinkley, T. K., Le Cloarec, M. F., and Lambert, G., 1994, Fractionation of families of major, minor, and trace metals across the melt-vapor interface in volcanic exhalations: *Geochimica et Cosmochimica Acta*, v. 58, p. 3255-3263.
- Hinkley, T. K., Quick, J. E., Gregory, R. T., and Gerlach, T. M., 1995, Hydrogen and oxygen isotopic compositions of waters from fumaroles at Kilauea summit, Hawaii: *Bulletin of Volcanology*, v. 57, p. 44-51.
- Hobden, B. J., Houghton, B. F., Lanphere, M. A., and Nairn, I. A., 1996, Growth of Tongariro volcanic complex; new evidence from K-Ar age determinations. *New Zealand Journal of Geology and Geophysics*, v. 39, p. 151-154.
- Hoblitt, R. P., 1994, An experiment to detect and locate lightning associated with eruptions of Redoubt Volcano, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska*: *Journal of Volcanology and Geothermal Research*, v. 62, p. 499-517.

- Hoblitt, R. P., Mori, J., and Power, J. A., 1996, Computer visualization of earthquake hypocenters, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 383-385 and 1 computer diskette.
- Hoblitt, R. P., Walder, J. S., Driedger, C. L., Scott, K. M., Pringle, P. T., and Vallance, J. W., 1995, *Volcano Hazards from Mount Rainier*, Washington: U.S. Geological Survey Open-File Report 95-273, 10 p., 1 plate, scale 1:100,000, 1:400,000.
- Hoblitt, R. P., Walder, J. S., Driedger, C. L., Scott, K. M., Pringle, P. T., and Vallance, J. W., 1998, *Volcano hazards from Mount Rainier*, Washington, Revised 1998: U.S. Geological Survey Open-File Report 98-428, 11 p., 2 plates, scale 1:100,000, 1:400,000.
- Hoblitt, R. P., Wolfe, E. W., Scott, W. E., Couchman, M. R., Pallister, J. S., and Javier, D., 1996, The preclimactic eruptions of Mount Pinatubo, June 1991, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 457-511.
- Holcomb, R. T., and Colony, W. E., 1995, Maps showing growth of the lava dome at Mount St. Helens, Washington: U.S. Geological Survey Miscellaneous Investigations Map 2359, scale 1:5,000, 12 p. text.
- Hon, Ken, Kauahikaua, J. P., Denlinger, R. P., and Mackay, K., 1994, Emplacement and inflation of pahoehoe sheet flows; observations and measurements of active lava flows on Kilauea Volcano, Hawaii: *Geological Society of America Bulletin*, v. 106, p. 351-370.
- Hon, Ken, and Pallister, J. S., 1995, Volcanism; wrestling with restless calderas and fighting floods of lava: *Nature*, v. 376, no. 6541, p. 554-555.
- Houghton, B. F., Wilson, C. J., McWilliams, M. O., Lanphere, M. A., Weaver, S. D., Briggs, R. M., and Pringle, M. S., 1995, Chronology and dynamics of a large silicic magmatic system; central Taupo volcanic zone, New Zealand: *Geology*, v. 23, p. 13-16.
- Howle, J. F., and Farrar, C. D., 1996, Hydrologic data for Long Valley caldera, Mono County, California, 1987-93: U.S. Geological Survey Open-File Report 96-382, 286 p.
- Howle, J. F., and Farrar, C. D., 1997, Deformation in the Casa Diablo geothermal well field, Long Valley caldera, eastern California, *in* Prince, K. R., and Leake, S. A., eds., *Proceedings U.S. Geological Survey Subsidence Interest Group Conference*, U.S. Geological Survey Open-File Report 97-47, p. 31-35.
- Ingebritsen, S. E., and Hayba, D. O., 1994, Fluid flow and heat transport near the critical point of H<sub>2</sub>O: *Geophysical Research Letters*, v. 21, p. 2199-2202.
- Ingebritsen, S. E., Mariner, R. H., and Sherrod, D. R., 1994, Hydrothermal systems of the Cascade Range, north-central Oregon: U.S. Geological Survey Professional Paper 1044-L, 86 p., 2 plates.
- Ingebritsen, S. E., and Rojstaczer, S. A., 1996, Geyser periodicity and the response of geysers to deformation: *Journal of Geophysical Research*, v. 101, p. 21,891-21,905.
- Ingebritsen, S. E., and Sanford, W. E., 1998, *Groundwater in Geologic Processes*: Cambridge University Press, Cambridge, 341 p.
- Ingebritsen, S. E., Scholl, M. A., and Sherrod, D. A., 1996, Reply to the comment by D. D. Blackwell and G. R. Priest on "Heat flow from four new research drill holes in the Western Cascades, Oregon, U.S.A.": *Geothermics*, v. 25, p. 715-724.
- Ingebritsen, S. E., Sherrod, D. R., and Mariner, R. H., 1996, Reply to Comment on "Rates and patterns of groundwater flow in the Cascade Range volcanic arc and the effect on subsurface temperatures": *Journal of Geophysical Research*, v. 101, p. 17,569-17,576.
- International Association of Volcanology and Chemistry of the Earth's Interior, 1997, *Reducing Volcanic Risk*: International Association of Volcanology and Chemistry of the Earth's Interior, VHS video, 24 min.

- Iverson, R. M., 1995, Can magma-injection and groundwater forces cause massive landslides on Hawaiian volcanoes?: *Journal of Volcanology and Geothermal Research*, v. 66, p. 295-308.
- Iverson, R. M., 1997, Hydraulic modeling of unsteady debris-flow surges with solid-fluid interactions, *in* Chen, Cheng-lung, ed., *Debris-Flow Hazards Mitigation: Mechanics, Prediction, and Assessment*, Proceedings of First International Conference, San Francisco, 1997: New York, American Society of Civil Engineers, p. 550-560.
- Iverson, R. M., 1997, The physics of debris flows: *Reviews of Geophysics*, v. 35, p. 245-296.
- Iverson, R. M., 1997, Discussion of slope instability from ground-water seepage: *Journal of Hydraulic Engineering*, v. 123, p. 929-930.
- Iverson, R. M., Reid, M. E., and LaHusen, R. G., 1997, Debris-flow mobilization from landslides: *Annual Review of Earth and Planetary Sciences*, v. 25, p. 85-138.
- Iverson, R. M., Schilling, S. P., and Vallance, J. W., 1998, Objective delineation of lahar-inundation hazard zones: *Geological Society of America Bulletin*, v. 110, p. 972-984.
- Iwatsubo, E. Y., 1996, Field test of two single-frequency GPS receivers: U.S. Geological Survey Open-File Report 96-43, 21 p.
- Iyer, H. M., 1994, Modeling structure related to volcanism using seismic tomography, *in* Subbarao, K. V., ed., *Volcanism; Radhakrishna volume*, Wiley Eastern, New Delhi, p. 77-105.
- Jaffe, D. A., Cerundolo, B., and Kelley, J., 1994, The influence of Redoubt Volcano emissions on snow chemistry, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska*: *Journal of Volcanology and Geothermal Research*, v. 62, p. 359-367.
- Janda, R. J., Daag, A. S., Delos Reyes, P. J., Newhall, C. G., Pierson, T. C., Punongbayan, R. S., Rodolfo, K. S., Solidum, R. U., and Umbal, J. V., 1996, Assessment and response to lahar hazard around Mount Pinatubo, 1991 to 1993, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 107-139.
- Janik, C. J. and Goff, Fraser, 1996, Reservoir geochemistry from flow tests of scientific core holes, Sulphur Springs, Valles Caldera: *in* Goff, Fraser, Kues, B. S., Rogers, M. A., McFadden, L. D., and Gardner, J. N., eds., *The Jemez Mountains Region, New Mexico* Geological Society, 47th Annual Field Conference, p. 52-53.
- Janik, C. J., Nathenson, M., and Scholl, M. A., 1994, Chemistry of spring and well waters on Kilauea volcano, Hawaii, and vicinity: U.S. Geological Survey Open-File Report 94-586, 166 p.
- Johnson, D. J., 1995, Gravity changes on Mauna Loa Volcano, *in* Rhodes, J. M., and Lockwood, J. P., eds., *Mauna Loa revealed; structure, composition, history, and hazards*: American Geophysical Union, Geophysical Monograph 92, p. 127-143.
- Johnston, M. J. S., Hill, D. P., Linde, A. T., Langbein, J., and Bilham, R., 1995, Transient deformation from triggered seismicity from the June 28, 1992,  $M_w = 7.3$  Landers earthquake at Long Valley volcanic caldera, California: *Bulletin of the Seismological Society of America*, v. 85, p. 787-795.
- Johnston, M. J. S., and Parrot, M., eds., 1998, Electromagnetic effects of earthquakes and volcanoes: *Physics of the Earth and Planetary Interiors*, v. 105, p. 109-295.
- Johnston, M. J. S., and Parrot, M., 1998, Foreword, *Electromagnetic effects of earthquakes and volcanoes*, IASPEI IUGG XXI General Assembly, Boulder, Colorado, USA. July 2-14, 1995: *Physics of the Earth and Planetary Interiors*, v. 105, p. v.
- Johnson, R. W., and Casadevall, T. J., 1994, Aviation safety and volcanic ash clouds in the Indonesia-Australia region, *in* Casadevall, T. J., ed., *Proceedings of the first international symposium on volcanic ash and aviation safety*: U.S. Geological Survey Bulletin 2047, p. 191-197.

- Jolly, A. D., Page, R. A., and Power, J. A., 1994, Seismicity and stress in the vicinity of Mount Spurr Volcano, south central Alaska: *Journal of Geophysical Research*, v. 99, p. 15,305-15,318.
- Jolly, A. D., Power, J. A., Stihler, S. D., Rao, L. N., Davidson, G., Paskievitch, J., Estes, S., and Lahr, J. C., 1996, Catalog of earthquake hypocenters for Augustine, Redoubt, Iliamna, and Mount Spurr volcanoes, Alaska: January 1, 1991 - December 31, 1993: U.S. Geological Survey Open-File Report 96-70, 90 p. plus computer disk.
- Jones, J. W., and Newhall, C. G., 1996, Preeruption and posteruption digital-terrain models of Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 571-582.
- Jonientz-Trisler, C., Myers, B., and Power, J. A., 1994, Seismic identification of gas-and-ash explosions at Mount St. Helens, *in* Casadevall, T. J., ed., *Proceedings of the first international symposium on volcanic ash and aviation safety*: U.S. Geological Survey Bulletin 2047, p. 351-356.
- Julian, B. R., 1994, Volcanic tremor: nonlinear excitation by fluid flow: *Journal of Geophysical Research*, v. 99, p. 11,859-11,877.
- Julian, B. R., 1998, Eruption dynamics; rumbling geysers (and volcanoes): *Nature*, v. 396, p. 311, 313.
- Julian, B. R., Miller, A. D., and Foulger, G. R., 1998, Non-double-couple earthquakes 1. Theory: *Reviews of Geophysics*, v. 36, p. 525-549.
- Julian, B. R., Pitt, A. M., and Foulger, G. R., 1998, Seismic image of a CO<sub>2</sub> reservoir beneath a seismically active volcano: *Geophysical Journal International*, v. 133, no. 1, p. F7-F10.
- Julian, B. R., Ross, A., Foulger, G. R., and Evans, J. R., 1996, Three-dimensional seismic image of a geothermal reservoir: The Geysers, California: *Geophysical Research Letters*, v. 23, p. 685-688.
- Kauahikaua, Jim, and Camara, Bobby, 1996, The most recent eruptions of Hualalai Volcano, Hawaii: An annotated bibliography: U.S. Geological Survey Open-File Report 96-671, 72 P.
- Kauahikaua, Jim, Cashman, K. V., Mattox, T. N., Heliker, C. C., Hon, K. A., Mangan, M. T., and Thornber, C. R., 1998, Observations of basaltic lava streams in tubes from Kilauea Volcano, island of Hawai'i: *Journal of Geophysical Research*, v. 103, p. 27,303-27,323.
- Kauahikaua, Jim, Duarte, Ka'eo, and Foster, James, 1998, A preliminary gravity survey of the Kailua-Kona area, Hawai'i, for delineation of a hydrologic boundary: U.S. Geological Survey Open-File Report 98-110, 21 p.
- Kauahikaua, J., Mangan, M., Heliker, C. and Mattox, T., 1996, A quantitative look at the demise of a basaltic vent: the death of Kupaianaha, Kilauea Volcano, Hawaii: *Bulletin of Volcanology*, v. 57, p. 641-648.
- Kauahikaua, Jim, Margriter, S., Lockwood, J. and Trusdell, F., 1995, Applications of GIS to the estimation of lava flow hazards on Mauna Loa Volcano, Hawaii, *in* Rhodes, J. M., and Lockwood, J. P., eds., *Mauna Loa revealed; structure, composition, history, and hazards*: American Geophysical Union, *Geophysical Monograph* 92, p. 315-325.
- Kauahikaua, Jim, Margriter, S., and Moore, R. B., 1995, GIS-aided volcanic activity hazard analysis for the Hawaii Geothermal Project Environmental Impact Statement, *in* Carrara, A., and Guzzetti, F., eds., *Geographical Information Systems in Assessing Natural Hazards*, Kluwer, p. 235-257.
- Kauahikaua, J. P., Moore, R. B., and Delaney, P., 1994, Volcanic activity and ground deformation hazard analysis for the Hawaii geothermal project environmental impact statement: U.S. Geological Survey Open-File Report 94-553, 44 p.
- Kauahikaua, J., Trusdell, F., and Heliker, C., 1998, The probability of lava inundation at the proposed and existing Kulani Prison sites: U.S. Geological Survey Open-File Report 98-794, 21 p.

- Keith, T. E. C., 1995, Geochemical data of fumarolically altered rocks, Valley of Ten Thousand Smokes, Alaska: U.S. Geological Survey Open-File Report 95-47, 20 p.
- Keith, T. E. C., ed., 1995, The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, 220 p.
- Keith, T. E. C., Thompson, J. M., and McGimsey, R. G., 1995, Chemistry of Crater Lake waters prior to the 1992 eruptions of Crater Peak, Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, p. 59-63.
- Kennedy, B. M., Kharaka, Y. K., Evans, W. C., Ellwood, A., DePaolo, D. J., Thordsen, J., Ambats, G., and Mariner, R. H., 1997, Mantle fluids in the San Andreas Fault system, California: *Science*, v. 278, p. 1278-1281.
- Keszthelyi, L. P., 1995, Measurements of the cooling at the base of pahoehoe flows: *Geophysical Research Letters*, v. 22, p. 2195-2198.
- Keszthelyi, L., 1995, A preliminary thermal budget for lava tubes on the Earth and planets: *Journal of Geophysical Research*, v. 100, p. 20,411-20,420.
- Keszthelyi, L., and Denlinger, R., 1996, The initial cooling of pahoehoe lava flows: *Bulletin of Volcanology*, v. 58, p. 5-18,
- Keszthelyi, L., and Self, S., 1998, Some physical requirements for the emplacement of long basaltic lava flows: *Journal of Geophysical Research*, v. 103, p. 27,447-27,464.
- Kienle, J., 1994, Volcanic ash-aircraft incidents in Alaska prior to the Redoubt eruption on 15 December 1989, *in* Casadevall, T. J., ed., Proceedings of the first international symposium on volcanic ash and aviation safety: U.S. Geological Survey Bulletin 2047, p. 119-123.
- Kious, W. J., and Tilling, R. I., 1996, This dynamic Earth; the story of plate tectonics: U.S. Geological Survey General Interest Publication, 77 p.
- Kirby, Stephen, Engdahl, E. R., and Denlinger, Roger, 1996, Intermediate-depth intraslab earthquakes and arc volcanism as physical expressions of crustal and uppermost mantle metamorphism in subducting slabs, *in* Bebout, G. E., Scholl, D. W., Kirby, S. H., and Platt, J. P., eds., Subduction Top to Bottom, American Geophysical Union Geophysical Monograph 96, p. 195-214.
- Klein, F. W., 1994, Seismic Hazards at Kilauea and Mauna Loa volcanoes, Hawaii: U.S. Geological Survey Open-File Report 94-216, 97 p.
- Kleinman, J. W., Iwatsubo, E. Y., Power, J. A., and Endo, E. T., 1997, Geodetic studies in the Novarupta area, Katmai National Park, Alaska, 1990 to 1995, *in* Dumoulin, J. A., and Gray, J. E., eds., Geologic Studies in Alaska by the U.S. Geological Survey, 1995: U.S. Geological Survey Bulletin 1574, p. 83-92.
- Kleinman, J. W., Yamashita, K. M., and Kaiser, W. P., 1994, Descriptions and elevations for first order, Class II leveling bench marks in the vicinity of Medicine Lake, California: U.S. Geological Survey Open-File Report 94-693, 36 p.
- Kodosky, L. G., and Keith, T. E., 1995, Further insights into the geochemical evolution of fumarolic alteration, Valley of Ten Thousand Smokes, Alaska: *Journal of Volcanology and Geothermal Research*, v. 65, p. 181-190.
- Koepenick, K. W., Brantley, S. L., Thompson, J. M., Rowe, G. L., Nyblade, A. A., and Moshy, C., 1996, Volatile emissions from the crater and flank of Oldoinyo Lengai volcano, Tanzania: *Journal of Geophysical Research*, v. 101, p. 13,819-13,830.
- Kong, L. S. L., Okubo, P. G., Webb, S. C., Duennebie, F. K., McDonald, M. A., Crawford, W. C., and Hildebrand, J. A., 1995, Seismic imaging of Kilauea Volcano and Loihi Seamount: 1994 onshore-offshore experiment data from the Hawaiian Volcano Observatory seismic network: U.S. Geological Survey Open-File Report 95-698, 113 p.
- Koyanagi, R. Y., and Nakata, J. S., 1994, Seismicity and volcanic activity in Hawaii, 1986, *in* Stover, C. W., and Brewer, L. R., United States Earthquakes, 1986: U.S. Geological Survey Bulletin 2089, p. 182-185.
- Kuntz, M. A., Skipp, B. A., Lanphere, M. A., Scott, W. E., Pierce, K. L., Dalrymple, G. B., Champion, D. E., Embree, G. F., Page, W. R., Morgan, L. A., Smith, R. P.,

- Hackett, W. R., and Rodgers, D. W., 1994, Geologic map of the Idaho National Engineering Laboratory and adjoining areas, eastern Idaho: U.S. Geological Survey Miscellaneous Investigations Series Map I-2330, scale 1:100,000.
- Lachenbruch, A. H., Sass, J. H., and Morgan, Paul, 1994, Thermal regime of the southern Basin and Range Province: 2. Implications of heat flow for regional extension and metamorphic core complexes: *Journal of Geophysical Research*, v. 99, p. 22,121-22,133.
- Lahr, J. C., Chouet, B. A., Stephens, C. D., Power, J. A., and Page, R. A., 1994, Earthquake classification, location, and error analysis in a volcanic environment: implications for the magmatic system of the 1989-1990 eruptions at Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska: Journal of Volcanology and Geothermal Research*, v. 62, p. 137-151.
- Langbein, J., Dzurisin, D., Marshall, G., Stein, R., and Rundle, J., 1995, Shallow and peripheral volcanic sources of inflation revealed by modeling two-color geodimeter and leveling data from Long Valley caldera, California, 1988-1992: *Journal of Geophysical Research*, v. 100, p. 12,487-12,495.
- Langbein, John, and Johnson, Hadley, 1997, Correlated errors in geodetic time series: Implications for time-dependent deformation: *Journal of Geophysical Research*, v. 102, p. 591-603.
- Lanphere, M. A., Dalrymple, G. B., and Turrin, B. D., eds., 1994, Abstracts of the eighth international conference on geochronology, cosmochronology, and isotope geology: U.S. Geological Survey Circular 1107, 384 p.
- Lee, H. J., Torresan, M. E., and McArthur, W., 1994, Stability of submerged slopes on the flanks of the Hawaiian Islands, a simplified approach: U.S. Geological Survey Open-File Report 94-638, 54 p.
- Lemke, K. J., May, B. A., and Vanderpool, A. M., 1995, Bibliography for Hayes, Spurr, Crater Peak, Redoubt, Iliamna, Augustine, Douglas, and Aniakchak volcanoes, Alaska: U.S. Geological Survey Open-File Report 95-435, 32 p.
- Lescinsky, D. T., and Sisson, T. W., 1998, Ridge-forming, ice-bounded lava flows at Mount Rainier, Washington: *Geology*, v. 26, p. 351-354.
- Linde, A. T., Sacks, I. S., Johnston, M. J., Hill, D. P., and Bilham, R. G., 1994, Increased pressure from rising bubbles as a mechanism for remotely triggered seismicity: *Nature*, v. 371, no. 6496, p. 408-410.
- Lipman, P. W., 1995, Declining growth of Mauna Loa during the last 100,000 years: rates of lava accumulation vs. gravitational subsidence, *in* Rhodes, J. M., and Lockwood, J. P., eds., *Mauna Loa revealed; structure, composition, history, and hazards: American Geophysical Union, Geophysical Monograph 92*, p. 45-80.
- Lipman, Peter, 1997, Chasing the volcano: *Earth*, v. 6, n. 6, p. 32-39.
- Lipman, Peter, Dungan, Michael, and Bachmann, Olivier, 1997, Comagmatic granophyric granite in the Fish Canyon Tuff, Colorado: Implications for magma-chamber processes during a large ash-flow eruption: *Geology*, v. 25, p. 915-918.
- Lipman, P. W., Dungan, M. A., Brown, L. L., and Deino, Alan, 1996, Recurrent eruption and subsidence at the Platoro caldera complex, southeastern San Juan volcanic field, Colorado: New tales from old tuffs: *Geological Society of America Bulletin*, v. 108, p. 1039-1055.
- Lipman, P. W., and Moore, J. G., 1996, Mauna Loa accumulation rates at the Hilo drill site: formation of lava deltas during a period of declining overall volcanic growth: *Journal of Geophysical Research*, v. 101, p. 11,631-11,641.
- Lockhart, A. B., Marcial, S., Ambubuyog, G., Laguerta, E. P., and Power, J. A., 1996, Installation, operation, and technical specifications of the first Mount Pinatubo telemetered seismic network, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle*, p. 215-223.

- Lockwood, J. P., 1995, Mauna Loa eruptive history - the preliminary radiocarbon record, *in* Rhodes, J. M., and Lockwood, J. P., eds., *Mauna Loa revealed; structure, composition, history, and hazards*: American Geophysical Union, Geophysical Monograph 92, p. 81-94.
- Lockwood, J. P., Abrams, M. J., Kahle, A. B., and Realmuto, V. J., 1994, Applications of remote sensing for the evaluation and mitigation of volcanic hazards; specific examples and recommendations, *in* Wadge, Geoffrey, ed., *Natural Hazards and Remote Sensing, Proceedings of Natural Hazard Assessment and Mitigation: the Unique Role of Remote Sensing, March 8-9, 1994*, Royal Society, London, p. 54-58.
- Loeffler, Bruce, Hazlett, Richard, and Kauahikaua, James, 1997, Active and recently active volcanic geology on the Island of Hawai'i, *in* Mendelson, C. V., and Mankiewicz, Carol, eds., *Proceedings Tenth Keck Research Symposium in Geology, April 1997*, p. 200-202.
- Lowenstern, J. B., 1994, Dissolved volatile concentrations in an ore-forming magma: *Geology*, v. 22, p. 893-896.
- Lowenstern, Jacob, 1995, Applications of silicate-melt inclusions to the study of magmatic volatiles: Mineralogical Association of Canada short course, v. 23, p. 71-99.
- Lowenstern, J. B., Clynne, M. A., and Bullen, T. D., 1997, Comagmatic A-Type granophyre and rhyolite from the Alid volcanic center, Eritrea, northeast Africa: *Journal of Petrology*, v. 38, p. 1707-1721.
- Lowenstern, J. B., Janik, C. J., Tesfai, Theoderos, and Fournier, R. O., 1997, Geochemical study of the Alid hydrothermal system, Danakil Depression, Eritrea: *Proceedings, Twenty-second Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California*, p. 37-44.
- Lowenstern, J. B., Killgore, M., Mariner, R., Blakely, R., Smith, J. G., Donnelly-Nolan, J., 1998, 3-Dimensional Visualization of the Medicine Lake Highland, CA: Topography, geology, geophysics and hydrology: U.S. Geological Survey Open-File Report 98-777, 1 plate (URL <http://caldera.wr.usgs.gov/OF98-777>).
- Lowenstern, J. B., and Sinclair, W. D., 1996, Exsolved magmatic fluid and its role in the formation of comb-layered quartz at the Cretaceous Logtung W-Mo deposit, Yukon Territory, Canada: *Transactions of the Royal Society of Edinburgh: Earth Sciences*, v. 87, p. 291-303.
- Lowenstern, J. B., and Villa, Francesco, eds. and translators, 1998, Alid Volcano in the colony of Eritrea, translation of: Marini, Angelo, 1938, *Il vulcano Alid nella colonia Eritrea*: *L'Universo*, v. 19, p. 51-65, 131-170: U.S. Geological Survey Open-File Report 98-218, 94 p.
- Lu, Z., Fatland, R., Wyss, M., Li, S., Eichelberger, J., Dean, K., and Freymueller, J., 1997, Deformation of New Trident volcano measured by ERS-1 SAR interferometry, Katmai National Park, Alaska: *Geophysical Research Letters*, v. 24, p. 695-698.
- Lu, Zhong, and Freymueller, J. T., 1998, Synthetic aperture radar interferometry coherence analysis over Katmai group, Alaska: *Journal of Geophysical Research*, v. 103, p. 29,887-29,894.
- Lu, Zhong, Mann, Dorte, and Freymueller, Jeff, 1998, Satellite radar interferometry measures deformation at Okmok Volcano: *Eos Transactions of the American Geophysical Union*, v. 79, p. 461, 467-468.
- Ludwin, R. S., Qamar, A. I., Malone, S. D., Jonientz-Trisler, C., Crosson, R. S., Benson, R., and Moran, S. C., 1994, Earthquake hypocenters in Washington and northern Oregon, 1987-1989, and operation of the Washington Regional Seismic Network: Washington Division of Geology and Earth Resources Information Circular 89, 40 p.
- Macías, J. L., García, P. A., Arce, J. L., Siebe, C., Espíndola, J. M., Komorowski, J. C., and Scott, K., 1997, Late Pleistocene-Holocene cataclysmic eruptions at Nevado de Toluca and Jocotitlán volcanoes, central Mexico, *in*, Link, P. K., and Kowallis, B. J., eds., *Proterozoic to Recent Stratigraphy, Tectonics, and Volcanology, Utah, Nevada, Southern Idaho and Central Mexico, Field Trip Guidebook, 1997 Geological Society of America*

- Annual Meeting, Geology Studies, v. 42, pt. 1, Department of Geology, Brigham Young University, Provo, Utah, p. 493-528.
- MacLeod, N. S., Sherrod, D. R., Chitwood, L. A., and Jensen, R. A., 1995, Geologic map of Newberry Volcano, Deschutes, Klamath, and Lake counties, Oregon: U.S. Geological Survey Miscellaneous Investigations Map I-2455, 23 p., 2 plates, scale 1:24,000.
- Major, J. J., 1994, Experimental studies of deposition at a debris-flow flume: U.S. Geological Survey Fact Sheet 28-94, 2 p.
- Major, J. J., 1997, Depositional processes in large-scale debris-flow experiments: *Journal of Geology*, v. 105, p. 345-366.
- Major, J. J., 1997, Discussion on verification of vertically rotating flume using non-Newtonian fluids: *Journal of Hydraulic Engineering*, v. 123, p. 936-937.
- Major, J. J., 1997, Book review of *Clean water: The Citizen's Complete Guide to Water Quality and Water Pollution Control*, by K. M. Vigil, Columbia Cascade, 1996: *Northwest Science*, v. 71, p. 161-162.
- Major, J. J., 1998, Pebble orientation on large, experimental debris-flow deposits: *Sedimentary Geology*, v. 117, p.151-164.
- Major, J. J., and Iverson, R. M., 1997, Experimental analysis of debris-flow deposition--process and effects of pore-fluid pressure, *in* Proceedings of International Symposium on Natural Disaster Prediction and Mitigation, Disaster Prevention Research Institute, Kyoto University, December 1-5, Kyoto, Japan, p. 419-426.
- Major, J. J., Iverson, R. M., McTigue, D. F., Macias, S., and Fiedorowicz, B. K., 1997, Geotechnical properties of debris-flow sediments and slurries, *in* Chen, Cheng-lung, ed., *Debris-Flow Hazards Mitigation: Mechanics, Prediction, and Assessment*, Proceedings of First International Conference, San Francisco, 1997: New York, American Society of Civil Engineers, p. 249-259.
- Major, J. J., Janda, R. J., and Daag, A. S., 1996, Watershed disturbance and lahars on the east side of Mount Pinatubo during the mid-June 1991 eruptions, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 895-919.
- Major, J. J., and Pringle, P. T., 1997, Rock avalanches, rockfalls, and associated processes induced by spreading of the lava dome, March 1984, *in* Pierson, T. C., ed., *Hydrologic consequences of hot-rock/snowpack interactions at Mount St. Helens Volcano, Washington, 1982-84*: U.S. Geological Survey Open-File Report 96-179, p. 69-80.
- Mangan, M. T., and Cashman, K. V., 1996, The structure of basaltic scoria and reticulite and inferences for vesiculation, foam formation, and fragmentation in lava fountains: *Journal of Volcanology and Geothermal Research*, v. 73, p. 1-18.
- Mangan, M. T., Heliker, C. C., Mattox, T. N., Kauahikaua, J. P., and Helz, R. T., 1995, Episode 49 of the Pu'u 'O'o-Kupaianaha eruption of Kilauea volcano - breakdown of a steady-state eruptive era: *Bulletin of Volcanology*, v. 57, p. 127-135.
- Mangan, M. T., Heliker, C. C., Mattox, T. N., Kauahikaua, J. P., Helz, R. T., and Hearn, B. C., 1995, The Pu'u O'o-Kupaianaha eruption of Kilauea Volcano; June 1990 through August 1994 lava sample archive: U.S. Geological Survey Open-File Report 95-496, 70 p.
- Mankinen, E. A., 1994, Preliminary geomagnetic paleointensities from Long Valley Caldera, California: U.S. Geological Survey Open-File Report 94-633, 17 p.
- March, R. S., Mayo, L. R., and Trabant, D. C., 1997, Snow and ice volume on Mount Spurr Volcano, Alaska, 1981: U.S. Geological Survey Water-Resources Investigations Report 97-4142, 36 p., 2 plates, scale 1:50,000.
- Marcial, Sergio, Melosantos, A. A., Hadley, K. C., LaHusen, R. G., and Marso, J. N., 1996, Instrumental lahar monitoring at Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 1015-1022.



- Mariner, R. H., Evans, W. C., and Huebner, M., 1998, Preliminary chemical and isotopic data for waters from springs and wells on and near Medicine Lake Volcano, Cascade Range, northern California: U.S. Geological Survey Open-File Report 98-2, 27 p.
- Mariner, R. H., and Janik, C. J., 1995, Geochemical data and conceptual model for the Steamboat Hills geothermal system, Washoe County, Nevada, Geothermal Resources Council, Transactions, v. 19, p. 191-200.
- Mariner, R. H., and Presser, T. S., 1995, Conditions of stilbite and chabazite formation in the hot springs of the Idaho batholith: ZEOLITE '93 Proceedings of the 4th International Conference on the Occurrence, Properties, and Utilization of Natural Zeolites, p. 87-97.
- Mariner, R. H., and Young, H. W., 1995, Lead and strontium isotope data for thermal waters of the regional geothermal system in the Twin Falls and Oakley areas, south-central Idaho: Geothermal Resources Council, Transactions, v. 19, p. 201-206.
- Mariner, R. H., Young, H. W., Bullen, T. W., and Janik, C. J., 1997, Sulfate-water isotope geothermometry and lead isotope data for the regional geothermal system in the Twin Falls area, south-central Idaho: Geothermal Resources Council Transactions, v. 21, p. 197-201.
- Mariner, R. H., Young, H. W., and Evans, W. C., 1994, Chemical, isotopic, and dissolved gas compositions of the hot springs of the Owyhee Uplands, Malheur County, Oregon: Geothermal Resources Council, Transactions, v. 18, p. 221-228.
- Marshall, G. A., Langbein, John, Stein, R. S., Lisowski, Michael, and Svarc, Jerry, 1997, Inflation of Long Valley caldera, California, Basin and Range strain, and possible Mono Craters dike opening from 1990-94 GPS surveys: Geophysical Research Letters, v. 24, p. 1003-1006.
- Martinez, J. M., Avila, G., Agudelo, R. A., Schuster, R. L., Casadevall, T. J., and Scott, K. M., 1995, Landslides and debris flows triggered by the 6 June 1994 Paez earthquake, southwestern Colombia: Landslide News, v. 9, December 1995, p. 13-15.
- Mastin, L. G., 1994, Explosive tephra emissions at Mount St. Helens, 1989-1991: the violent escape of magmatic gas following storms?: Geological Society of America Bulletin, v. 106, p. 175-185.
- Mastin, L. G., 1995, A numerical program for steady-state flow of Hawaiian magma-gas mixtures through vertical eruptive conduits: U.S. Geological Survey Open-File Report 95-756, 46p.
- Mastin, L. G., 1995, Magma-water mixing in static and dynamically rising magma columns: a case study from Kilauea Volcano, Hawaii, *in* Theofanus, T., ed., Joint US (NSF)/Japan (JSCS) Conference on Intense Multiphase Interactions, Santa Barbara, p. 344-346.
- Mastin, L. G., 1995, Thermodynamics of gas and steam-blast eruptions: Bulletin of Volcanology, v. 57, p. 85-98.
- Mastin, L. G., 1997, Evidence for water influx from a caldera lake during the explosive hydromagmatic eruption of 1790, Kilauea volcano, Hawaii: Journal of Geophysical Research, v. 102, p. 20,093-20,109.
- Mastin, L. G., and Waitt, R. B., 1995, Is Glacier Peak a dangerous volcano?: U.S. Geological Survey Open-File Report 95-413, 4 p.
- Matsu'ura, Mitsuhiro, Marone, C. J., McNutt, S. R., Takeo, Minoru, Main, I. G., and Rundle, J. B., eds., 1997, Earthquake Generation Processes: Environmental Aspects and Physical Modelling, Symposium SJS1, XXI General Assembly of IUGG, Boulder, Colorado, July 1995: Tectonics, v. 277, 233 p.
- Matsu'ura, Mitsuhiro, Marone, C. J., McNutt, S. R., Takeo, Minoru, Main, I. G., and Rundle, J. B., 1997, Preface, Earthquake Generation Processes: Environmental Aspects and Physical Modelling: Tectonics, v. 277, p. vii-viii.
- Mattox, T. N., 1993 (1994), Where lava meets the sea: Kilauea Volcano, Hawai'i: Earthquakes and Volcanoes, v. 24, n. 4, p. 160-177.
- Mattox, T. N., Heliker, C. C., Hoffmann, J. P., Hon, K., Mangan, M. T., Neal, C. A., Ulrich, G. E., and Wolfe, E. W., 1995, Timelapse film logs from the Pu'u' O'o-Kupaianaha eruption of Kilauea Volcano; January 1983 through September 1994: U.S. Geological Survey Open-File Report 94-713, 237 p.

- Mattox, T. N., and Mangan, M. T., 1997, Littoral hydrovolcanic explosions: a case study of lava-seawater interaction at Kilauea Volcano: *Journal of Volcanology and Geothermal Research*, v. 75, p. 1-17.
- McConnell, V. S., Begét, J. E., Roach, A. L., Bean, K. W., and Nye, C. J., 1997, Geologic map of the Makushin volcanic field, Unalaska Island, Alaska: Alaska Division of Geological and Geophysical Surveys Report of Investigations RI 97-20, 2 plates, scale 1:63,360.
- McGee, K. A. and Casadevall, T. J., 1994, A compilation of sulfur dioxide and carbon dioxide emission-rate data from Mount St. Helens during 1980-88: U.S. Geological Survey Open-File Report 94-212, 23 p.
- McGee, K. A., and Gerlach, T. M., 1995, Volcanic gas: Volcano hazards fact sheet, U.S. Geological Survey Open-File Report 95-85, 2 p.
- McGee, K. A., and Gerlach, T. M., 1998, Airborne volcanic plume measurements using a FTIR spectrometer, Kilauea volcano, Hawaii: *Geophysical Research Letters*, v. 25, p. 615-618.
- McGee, K. A., and Gerlach, T. M., 1998, Annual cycle of magmatic CO<sub>2</sub> in a tree-kill soil at Mammoth Mountain, California: Implications for soil acidification: *Geology*, v. 26, p. 463-466.
- McGee, K. A., and Sutton, A. J., 1994, Eruptive activity at Mount St. Helens, Washington, USA, 1984-1988: a gas geochemistry perspective: *Bulletin of Volcanology*, v. 56, p. 435-446.
- McGimsey, Game, 1993(1994), Volcanic activity in Alaska: September 1991–September 1992: *Earthquakes and Volcanoes*, v. 24, n. 2, p. 60-73.
- McGimsey, R. G., and Dorava, J. M., 1994, Video of the August 18, 1992, eruption of Crater Peak vent on Spurr Volcano, Alaska: U.S. Geological Survey Open-File Report 94-614, 14 p., one videotape.
- McGimsey, R. G., and Miller, T. P., 1995, Quick reference to Alaska's active volcanoes and listings of historical eruptions, 1760-1994: U.S. Geological Survey Open-File Report 95-520, 13 p.
- McGimsey, R. G., and Neal, C. A., 1996, 1995 volcanic activity in Alaska and Kamchatka: Summary of events and response of the Alaska Volcano Observatory: U.S. Geological Survey Open-File Report 96-738, 22 p.
- McGimsey, R. G., Neal, C. A., and Doukas, M. P., 1995, Volcanic activity in Alaska: Summary of events and response of the Alaska Volcano Observatory 1992: U.S. Geological Survey Open-File Report 95-83, 26 p.
- McGimsey, R. G., Waythomas, C. F., and Neal, C. A., 1994, High stand and catastrophic draining of intracaldera Surprise Lake, Aniakchak Volcano, Alaska, *in* Till, A. B., and Moore, T. E., eds., *Geologic studies in Alaska by the U.S. Geological Survey, 1993: U.S. Geological Survey Bulletin 2107*, p. 59-71
- McNutt, S. R., 1994, Volcanic tremor amplitude correlated with the Volcanic Explosivity Index and its potential use in determining ash hazards to aviation: *Acta Vulcanologica*, v. 5, p. 193-196.
- McNutt, S. R., 1994, Volcanic tremor from around the world: 1992 update: *Acta Vulcanologica*, v. 5, p. 197-200.
- McNutt, S. R., 1994, Volcanic tremor amplitude correlated with eruption explosivity and its potential use in determining ash hazards to aviation, *in* Casadevall, T. J., ed., *Proceedings of the first international symposium on volcanic ash and aviation safety: U.S. Geological Survey Bulletin 2047*, p. 377-385.
- McNutt, S. R., 1996, Seismic monitoring and eruption forecasting of volcanoes: A review of the state-of-the-art and case histories, *in* Scarpa, R., and Tilling, R. I., eds., *Monitoring and Mitigation of Volcano Hazards: Springer, Berlin*, p. 99-146.
- McNutt, S. R., Ida, Y., Chouet, B. A., Okubo, P., Oikawa, J., and Saccorotti, G., 1997, Kilauea Volcano provides hot seismic data for joint Japanese–U.S. experiment: *Eos Transactions of the American Geophysical Union*, v. 78, p. 105, 111.

- McNutt, S. R., Tytgat, G. C., and Power, J. A., 1995, Preliminary analyses of volcanic tremor associated with 1992 eruptions of Crater Peak, Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, p. 161-178.
- Meyer, D. F., 1994, Stream-channel changes in response to volcanic detritus under natural and augmented discharge, South Coldwater Creek, Washington: U.S. Geological Survey Open-File Report 94-519, 137 p., 3 plates.
- Meyer, D. F., and Trabant, D. C., 1995, Lahars from the 1992 eruptions of Crater Peak, Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., The 1992 eruptions of Crater Peak vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, p. 183-198.
- Miklius, Asta, Coloma, Francine, Denlinger, Roger, Lisowski, Michael, Owen, Susan, Sako, Maurice, and Segall, Paul, 1997, Global Positioning System measurements on the Island of Hawaii: 1993 through 1996: U.S. Geological Survey Open-File Report 97-698, 114 p.
- Miklius, A., Iwatsubo, E. Y., Denlinger, R. P., Okamura, A. T., Sako, M. K., and Yamashita, K. M., 1994, GPS Measurements on the Island of Hawaii in 1992: U.S. Geological Survey Open-File Report 94-288, 44 p.
- Miklius, Asta, Lisowski, M., Delaney, P. T., Denlinger, R. P., Dvorak, J. J., Okamura, A. T., and Sako, M. K., 1995, Recent inflation and flank movement of Mauna Loa Volcano, *in* Rhodes, J. M., and Lockwood, J. P., eds., Mauna Loa revealed; structure, composition, history, and hazards: American Geophysical Union, Geophysical Monograph 92, p. 199-205.
- Milia, A., Mirabile, L., Torrente, M. M., and Dvorak, J. J., 1998, Volcanism offshore of Vesuvius Volcano in Naples Bay: *Bulletin of Volcanology*, v. 59, p. 404-413.
- Miller, A. D., Foulger, G. R., and Julian, B. R., 1998, Non-double-couple earthquakes 2. Observations: *Reviews of Geophysics*, v. 36, p. 551-568.
- Miller, A. D., Julian, B. R., and Foulger, G. R., 1998, Three-dimensional seismic structure and moment tensors of non-double-couple earthquakes at the Hengill-Grensdalur volcanic complex, Iceland: *Geophysical Journal International*, v. 133, p. 309-325.
- Miller, A. D., Stewart, R. C., White, R. A., Lockett, R., Baptie, B. J., Aspinall, W. P., Latchman, J. L., Lynch, L. L., and Voight, B., 1998, Seismicity associated with dome growth and collapse at the Soufrière Hills Volcano, Montserrat: *Geophysical Research Letters*, v. 25, p. 3401-3404.
- Miller, K. C., Keller, G. R., Gridley, J. M., Luetgert, J. H., Mooney, W. D., and Thybo, Hans, 1997, Crustal structure along the west flank of the Cascades, western Washington: *Journal of Geophysical Research*, v. 102, p. 17,857-17,873.
- Miller, M. M., Dragert, Herb, Endo, Elliott, Freymueller, J. T., Goldfinger, Chris, Kelsey, H. M., Humphreys, E. D., Johnson, D. J., McCaffrey, Robert, Oldow, J. S., Qamar, Anthony, and Rubin, C. M., 1998, Precise measurements help gauge Pacific Northwest's earthquake potential: *Eos Transactions of the American Geophysical Union*, p. 269, 275.
- Miller, T. P., 1994, Geothermal resources of Alaska, *in* Plafker, George, and Berg, H. C., eds., The geology of Alaska, The geology of North America G-1, Geological Society of America, p. 979-987.
- Miller, T. P., 1994, Dome growth and destruction during the 1989-1990 eruption of Redoubt Volcano, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 197-212.
- Miller, T. P., and Casadevall, T. J., 1998, Hazards to aviation, Workshop on Volcanic Ash; Toulouse, France, 11-15 May 1998: *International Association of Volcanology and Chemistry of the Earth's Interior News*, no. 2, p. 6-7.
- Miller, T. P., and Chouet, B. A., eds., 1994, The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, 517 p.
- Miller, T. P., and Chouet, B. A., 1994, The 1989-1990 eruptions of Redoubt Volcano; an introduction, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 1-10.

- Miller, T. P., and Kirianov, V. Yu., 1995, Volcanic ash hazards along the north Pacific (NOPAC) air routes: Kurile Islands-Kamchatka-Alaska: Proceedings, International Workshop on Volcanoes Commemorating the 50th Anniversary of Mt. Showa-Shinzan, Hokkaido, Japan, p. 88-90
- Miller, T. P., Kirianov, V. Yu., and Kelley, H. L., 1994, Russian volcanic eruption disrupts North Pacific air traffic: U.S. Geological Survey Fact Sheet FS 67-94, 2 p.
- Miller, T. P., Kirianov, V. Yu., and Miller, E., 1996, Map of Kamchatka's active volcanoes plotted on navigation charts: U.S. Geological Survey Open-File Report 96-286, 8 p.
- Miller, T. P., McGimsey, R. G., Richter, D. H., Riehle, J. R., Nye, C. J., Yount, M. E., and Dumoulin, J. A., 1998, Catalog of the historically active volcanoes of Alaska: U.S. Geological Survey Open-File Report 98-582, 104 p.
- Miller, T. P., Neal, C. A., and Waitt, R. B., 1995, Pyroclastic flows of the 1992 Crater Peak eruptions of Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, p. 81-87.
- Miller, T. P., and Richter, D. H., 1994 Quaternary volcanism in the Alaska Peninsula and Wrangell Mountains, Alaska, *in* Plafker, George, and Berg, H. C., eds., The geology of Alaska, The geology of North America G-1, Geological Society of America, p. 759-779.
- Minissale, Angelo, Evans, W. C., Magro, Gabriella, and Vaselli, Orlando, 1997, Multiple source components in gas manifestations from north-central Italy: Chemical Geology, v. 142, p. 175-192.
- Montserrat Volcano Observatory Team, 1997, The ongoing eruption in Montserrat: Science, v. 276, p.371-372.
- Morin, R. H., Hickman, S. H., Barton, C. A., Shapiro, A. M., Benoit, W. R., and Sass, J. H., 1998, Hydrologic properties of the Dixie Valley, Nevada, geothermal reservoir from well-test analyses: Proceedings, Twenty-third Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, p. 307-314.
- Moore, J. G., 1995, Harry Glicken at Coldwater 2: Journal of Volcanology and Geothermal Research, v. 66, p. xv-xvi.
- Moore, J. G., Bryan, W. B., Beeson, M. H., and Normark, W. R., 1995, Giant blocks in the south Kona landslide, Hawaii: Geology, v. 23, p. 125-128.
- Moore, J. G., Bryan, W. B., and Ludwig, K. R., 1994, Chaotic deposition by a giant wave, Molokai, Hawaii: Geological Society of America Bulletin, v. 106, p. 962-967.
- Moore, J. G., and Chadwick, W. W., Jr., 1995, Offshore geology of Mauna Loa and adjacent areas, Hawaii, *in* Rhodes, J. M., and Lockwood, J. P., eds., Mauna Loa revealed; structure, composition, history, and hazards: American Geophysical Union, Geophysical Monograph 92, p. 21-44.
- Moore, J. G., Hickson, C. J., and Calk, L. C., 1995, Tholeiitic-alkalic transition at subglacial volcanoes, Tuya region, British Columbia, Canada: Journal of Geophysical Research, v. 100, p. 24,577-24,592.
- Moore, J. G., Ingram, B. L., Ludwig, K. R., and Clague, D. R., 1996, Coral ages and island subsidence, Hilo drill hole: Journal of Geophysical Research, v. 101, p. 11,599-11,605.
- Moore, J. G., Normark, W. R., and Holcomb, R. T., 1994, Giant Hawaiian underwater landslides: Science, v. 264, no. 5155, p. 46-47.
- Moore, J. G., Normark, W. R., and Holcomb, R. T., 1994, Giant Hawaiian landslides: Annual Review of Earth and Planetary Sciences, v. 22, p. 119-144.
- Moore, R. B., Clague, D. A., Bohrsen, W. A., and Wise, W. S., 1994, Preliminary geologic map of the Puu Anahulu Quadrangle, Hawaii: U.S. Geological Survey Open-File Report 89-284, 18 p., 2 plates, scale 1:24,000.
- Moore, R. B., Ingram, B. L., Ludwig, K. R., and Clague, D. A., 1996, Coral ages and island subsidence, Hilo drill hole: Journal of Geophysical Research, v. 101, p. 11599-11605.
- Moore, R. B., Koyanagi, R. Y., Sako, M. K., Trusdell, F. A., Kojima, G., Ellorda, R. L., and Zane, S., 1994, Volcanologic investigations in the Commonwealth of the Northern

- Mariana Islands, September-October 1990: U.S. Geological Survey Open-File Report 91-320, 31 p.
- Morgan, Paul, Sass, J. H., and Jacobson, R. D., 1996, Heat flow in VC-2A and VC-2B, and constraints on the thermal regime of the Valles Caldera, New Mexico: *in* Goff, Fraser, Kues, B. S., Rogers, M. A., McFadden, L. D., and Gardner, J. N., eds., *The Jemez Mountains Region, New Mexico Geological Society, 47th Annual Field Conference*, p. 231-236.
- Mori, J., 1995, Volcano seismology, hazards assessment: *Reviews of Geophysics*, supplement, p. 263-267.
- Mori, J., Eberhart-Phillips, D., and Harlow, D. H., 1996, Three-dimensional velocity structure at Mount Pinatubo: resolving magma bodies and earthquake hypocenters, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle*, p. 371-382.
- Mori, J., White, R. A., Harlow, D. H., Okubo, P., Power, J. A., Hoblitt, R. P., Laguerta, E. P., Lanuza, A., and Bautista, B. C., 1996, Volcanic earthquakes following the 1991 climactic eruption of Mount Pinatubo: strong seismicity during a waning eruption, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle*, p. 339-350.
- Morin, R. H., and Paillet, F. L., 1996, Analysis of fractures intersecting Kahi Puka Well 1 and its relation to the growth of the Island of Hawaii: *Journal of Geophysical Research*, v. 101, p. 11,695-11,699.
- Morrissey, M. M., 1997, Long-period seismicity at Redoubt Volcano, Alaska, 1989-1990 related to magma degassing: *Journal of Volcanology and Geothermal Research*. v. 75, p. 321-335.
- Morrissey, M. M., and Chouet, B. A., 1997, A numerical investigation of choked flow dynamics and its application to the triggering mechanism of long-period events at Redoubt Volcano, Alaska: *Journal of Geophysical Research*, v. 102, p. 7,965-7,983.
- Morrissey, M. M., and Chouet, B. A., 1997, Burst conditions of explosive volcanic eruptions recorded on microbarographs: *Science*, v. 275, p. 1290-1293.
- Mothes, P. A., Hall, M. L., and Janda, R. J., 1998, The enormous Chillos Valley Lahar: an ash-flow-generated debris flow from Cotopaxi Volcano, Ecuador: *Bulletin of Volcanology*, v. 59, p. 233-244.
- Mueller, R. J., and Johnston, M. J. S., 1998, Review of magnetic field monitoring near active faults and volcanic calderas in California: 1974-1995: *Physics of the Earth and Planetary Interiors*: v. 105, p. 131-144.
- Muffler, L. J. P., Clynne, M. A., and Champion, D. E., 1994, Late Quaternary normal faulting of the Hat Creek basalt, northern California: *Geological Society of America Bulletin*, v. 106, p. 195-200.
- Muffler, L. J. P., and Duffield, W. A., 1995, The role of volcanic geology in the exploration for geothermal energy: *Proceedings, World Geothermal Congress, Florence, Italy, 18-31 May, 1995*, v. 2., p. 657-662.
- Muffler, L. J. P., and Guffanti, M., 1995, Are there significant hydrothermal resources in the U.S. part of the Cascade Range?: *Proceedings, Twentieth Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California*, p.9-17.
- Muffler, L. J. P., and Tamanyu, S., 1995, Tectonic, volcanic, and geothermal comparison of the Tohoku volcanic arc (Japan) and the Cascade arc (USA): *Proceedings, World Geothermal Congress, Florence, Italy, 18-31 May, 1995*, v. 2., p. 725-730.
- Mullineaux, D. R., 1996, Pre-1980 tephra-fall deposits erupted from Mount St. Helens, Washington: *U.S. Geological Survey Professional Paper 1563*, 99 p.
- Munson, C. G., Thurber, C. H., Li, Y., and Okubo, P. G., 1995, Crustal shear wave anisotropy in southern Hawaii: spatial and temporal analysis: *Journal of Geophysical Research*, v. 100, p. 20,367-20,377.

- Murray, T. L., 1994, Routine processing of seismic hypocentral data using personal computers: U.S. Geological Survey Open-File Report 94-1070-A, 29 p.
- Murray, T. L., 1994, Routine processing of seismic hypocentral data using personal computers: U.S. Geological Survey Open-File Report 94-1070-B, one 5 1/2 inch diskette.
- Murray, T. L., Bauer, C. I., and Paskievitch, J. F., 1994, Using a personal computer to obtain predicted plume trajectories during the 1989-90 eruption of Redoubt volcano, Alaska, *in* Casadevall, T. J., ed., Proceedings of the first international symposium on volcanic ash and aviation safety: U.S. Geological Survey Bulletin 2047, p. 253-256.
- Murray, T. L., Ewert, J. W., Lockhart, A. B., and LaHusen, R. G., 1996, The integrated mobile volcano-monitoring system used by the Volcano Disaster Assistance Program (VDAP), *in* Scarpa, R., and Tilling, R. I., eds., Monitoring and Mitigation of Volcano Hazards: Springer, Berlin, p. 315-362.
- Murray, T. L., Power, J. A., Davidson, G., and Marso, J. N., 1996, A PC-based real-time volcano-monitoring data-acquisition and analysis system, *in* Newhall, C. G., and Punongbayan, R. S., eds., Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 225-232.
- Myers, B. M., and Brantley, S. R., 1995, Hazardous phenomena at volcanoes: Volcano hazards fact sheet, U.S. Geological Survey Open-File Report 95-231, 2 p.
- Myers, Bobbie, Brantley, S. R., Stauffer, Peter, and Hendley, J. W., II, 1997, What are volcano hazards?: U.S. Geological Survey Fact Sheet 2-97, 2 p.
- Myers, B., and Theisen, G. J., 1994, Volcanic event notification at Mount St. Helens, *in* Casadevall, T. J., ed., Proceedings of the first international symposium on volcanic ash and aviation safety: U.S. Geological Survey Bulletin 2047, p. 207-212.
- Nakada, S., Bacon, C. R., and Gartner, A. E., 1994, Origin of phenocrysts and compositional diversity in pre-Mazama rhyodacite lavas, Crater Lake, Oregon: *Journal of Petrology*, v. 35, part 1, p. 127-162.
- Nakano, Masaru, Kumagai, Hiroyuki, Kumazawa, Mineo, Yamaoka, Koshun, and Chouet, B. A., 1998, The excitation and characteristic frequency of the long-period volcanic event: An approach based on an inhomogeneous autoregressive model of a linear dynamic system: *Journal of Geophysical Research*, v. 103, p. 10,031-10,046.
- Nakata, Jennifer, and Okubo, Paul, 1997, Determination of station amplitude magnitude corrections for the Hawaiian Volcano Observatory telemetered seismographic network: Data from 1992 - 1997: U.S. Geological Survey Open-File Report 97-863, 73 p.
- Nakata, J. S., Tomori, A. H., Tokuuke, J. P., Koyanagi, R. Y., Tanigawa, W. R., and Okubo, P. G., 1994, Hawaiian Volcano Observatory; Summary 88, Part I, Seismic data, January to December 1988, *with* a chronological summary by Wright, T. L.: U.S. Geological Survey Open-File Report 94-169, 78 p.
- Nakata, J. S., Tomori, A. H., Tokuuke, J. P., Tanigawa, W. R., and Okubo, P. G., 1994, Hawaiian Volcano Observatory; Summary 91, Part 1, Seismic data, January to December 1991, *with* a chronological summary by Heliker, C. C., Mangan, M. T., Mattox, T. N., and Kauahikaua, J. P.: U.S. Geological Survey Open-File Report 94-432, 72 p.
- Nakata, J. S., Tomori, A. H., Tanigawa, W. R., and Okubo, P. G., 1998, Hawaiian Volcano Observatory Summary 92, Part I Seismic data, January to December 1992, *with a* Chronological summary, by T. Mattox, C. Heliker, M. Mangan, and L. Keszthelyi: U.S. Geological Survey Open-File Report 98-147, 70 p.
- Nathenson, Manuel, 1997, Publications of the Volcano Hazards Program 1994-1996: U.S. Geological Survey Open-File Report 97-692, 31 p.
- Nathenson, Manuel, 1998, Publications of the Volcano Hazards Program 1997: U.S. Geological Survey Open-File Report 98-618, 11 p.
- Nathenson, M., Mariner, R. H., and Thompson, J. M., 1994, Convective heat discharge of Wood River group of springs in the vicinity of Crater Lake, Oregon: *Geothermal Resources Council, Transactions*, v. 18, p. 229-236.
- Neal, C. A., 1997, Pavlof darkens the Alaskan sky: *Earth in Space*, v. 9, n. 8, p. 6-9.

- Neal, C. A., 1997, What is the Alaska Volcano Observatory: U.S. Geological Survey Open-File Report 97-443, 1 p.
- Neal, C. A., Casadevall, T. J., Miller, T. P., Hendley, J. W., II, and Stauffer, P. H., 1997, Volcanic Ash—Danger to aircraft in the North Pacific: U.S. Geological Survey Fact Sheet 30-97, 2 p.
- Neal, Christina, and Doukas, Mike, 1994, What is the Alaska Volcano Observatory?: U.S. Geological Survey Fact Sheet 94-71, 2 p.
- Neal, C. A., Doukas, M. P., and McGimsey, R. G., 1995, 1994 Volcanic activity in Alaska: summary of events and response of the Alaska Volcano Observatory: U.S. Geological Survey Open-File Report 95-271, 18 p.
- Neal, Christina, and McGimsey, Robert, 1996, Volcanoes of the Wrangell Mountains and Cook Inlet region, Alaska; selected photographs: U.S. Geological Survey Digital Data Series DDS-0039, 1 CD-ROM.
- Neal, C. A., and McGimsey, R. G., 1997, 1996 volcanic activity in Alaska and Kamchatka: summary of events and response of the Alaska Volcano Observatory: U.S. Geological Survey Open-File Report 97-433, 34 p.
- Neal, C. A., and McGimsey, R. G., 1997, Volcanoes of the Alaska Peninsula and Aleutian Islands - selected photographs: U.S. Geological Survey Digital Data Series 97-40, 1 CD-ROM.
- Neal, C. A., McGimsey, R. G., and Doukas, M. P., 1996, 1993 Volcanic activity in Alaska: summary of events and response of the Alaska Volcano Observatory: U.S. Geological Survey Open-File Report 96-24, 21 p.
- Neal, C. A., McGimsey, R. G., Gardner, C. A., Harbin, M. L., and Nye, C. J., 1995, Tephra-fall deposits from the 1992 eruptions of Crater Peak, Mount Spurr volcano, Alaska: a preliminary report on distribution, stratigraphy, and composition, *in* Keith, T. E. C., ed., The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, p. 65-79.
- Nelson, C. H., Bacon, C. R., Robinson, S. W., Adam, D. P., Bradbury, J. P., Barber, J. H., Jr., Schwartz, D., and Vagenas, G., 1994, The volcanic, sedimentologic, and paleolimnologic history of the Crater Lake caldera floor, Oregon: Evidence for small caldera evolution: Geological Society of America Bulletin, v. 106, p. 684-704.
- Newhall, C. G., Daag, A. S., Delfin, F. G., Jr., Hoblitt, R. P., McGeehin, J., Pallister, J. S., Regalado, M. T. M., Rubin, M., Tubianosa, B. S., Tamayo, R. A., Jr., and Umbal, J. V., 1996, Eruptive history of Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 165-195.
- Newhall, Chris, Hendley, J. W., II, and Stauffer, P. H., 1997, Benefits of volcano monitoring far outweigh costs—The case of Mount Pinatubo: U.S. Geological Survey Fact Sheet 115-97, 2 p.
- Newhall, Chris, Hendley, J. W., II, and Stauffer, P. H., 1997, The cataclysmic 1991 eruption of Mount Pinatubo, Philippines: U.S. Geological Survey Fact Sheet 113-97, 2 p.
- Newhall, Chris, and Punongbayan, Ray, 1995, Pinatubo: Chronique d'un cataclisme annoncé: La Recherche, v. 26, p. 310-314
- Newhall, Chris, and Punongbayan, Ray, 1995, Pinatubo: Crónica de un cataclismo anunciado: Mundo Científica, v. 15, p. 470-473.
- Newhall, C. G., and Punongbayan, R. S., eds., 1996, Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, 1126 p.
- Newhall, C. G., and Punongbayan, R. S., 1996, The narrow margin of successful volcanic-risk mitigation, *in* Scarpa, R., and Tilling, R. I., eds., Monitoring and Mitigation of Volcano Hazards: Springer, Berlin, p. 807-838.

- Newhall, C. G., Punongbayan, R. S., and Gerlach, T. M., 1994, Tight and leaky volcanoes: implications for forecasting explosive eruptions: *Atti dei Convegni Lincei*, v. 112, p. 13-21.
- Newhall, Chris, Stauffer, P. H., and Hendley, J. W., II, 1997, Lahars of Mount Pinatubo, Philippines: U.S. Geological Survey Fact Sheet 114-97, 2 p.
- Norris, R. D., 1994, Seismicity of rockfalls and avalanches at three Cascade Range volcanoes; implications for seismic detection of hazardous mass movements: *Bulletin of the Seismological Society of America*, v. 85, p. 1925-1939.
- Norris, R. D., Meagher, K. L., and Weaver, C. S., 1997, The 1936, 1945-1947, and 1950 earthquake sequences near Lassen Peak, California: *Journal of Geophysical Research*, v. 102, p. 449-457.
- Nye, C. J., 1997, DGGs active in Alaska Volcano Observatory mission: *Alaska GeoSurvey News*, v.1, n. 2, p. 1-2.
- Nye, C. J., 1998, Book Review: *Volcanoes*, Third Edition, Robert and Barbara Decker: *Eos Transactions of the American Geophysical Union*, v. 79, p. 387.
- Nye, C. J., Hammond, W. R., Tytgat, G. C., and Dorava, J. M., 1995, June 29, 1993, outburst flood from Kidazgeni Glacier, Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., *The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska*: U.S. Geological Survey Bulletin 2139, p. 199-204.
- Nye, C. J., Harbin, M. L., Miller, T. P., Swanson, S. E., and Neal, C. A., 1995, Whole-rock major- and trace-element chemistry of 1992 ejecta from Crater Peak, Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., *The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska*: U.S. Geological Survey Bulletin 2139, p. 119-128.
- Nye, C. J., Swanson, S. E., Avery, V. F., and Miller, T. P., 1994, Geochemistry of the 1989-1990 eruption of Redoubt Volcano: Part I. Whole-rock major- and trace-element chemistry, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska*: *Journal of Volcanology and Geothermal Research*, v. 62, p. 429-452.
- Ohminato, Takao, Chouet, B. A., Dawson, Phillip, and Kedar, Sharon, 1998, Waveform inversion of very long period impulsive signals associated with magmatic injection beneath Kilauea Volcano, Hawaii: *Journal of Geophysical Research*, v. 103, p. 23,839-23,862.
- Okubo, P. G., 1995, A seismological framework for Mauna Loa Volcano, Hawaii, *in* Rhodes, J. M., and Lockwood, J. P., eds., *Mauna Loa revealed; structure, composition, history, and hazards*: American Geophysical Union, *Geophysical Monograph* 92, p. 187-197.
- Okubo, P. G., Benz, H. M., and Chouet, B. A., 1997, Imaging the crustal magma sources beneath Mauna Loa and Kilauea volcanoes, Hawaii: *Geology*, v. 25, p. 867-870.
- Oliver, H. W., and Christiansen, R. L., 1998, Locations, descriptions, densities, and magnetic susceptibilities of rock samples collected for analysis of gravity and aeromagnetic anomalies in Yellowstone National Park, Wyoming, Idaho, and Montana: U.S. Geological Survey Open-File Report 98-247, 15 p.
- Olmsted, F. H., Welch, A. H., Sorey, M. L., and Schaefer, D. H., 1997, The geothermal hydrology of southern Grass Valley, Pershing County, Nevada: U.S. Geological Survey Water Resources Investigations Report 96-4139, 128 p.
- Oscarson, R. L. and Bargar, K. E., 1996, Electron microprobe analyses of zeolite minerals from Neogene volcanic rocks in the Breitenbush-Austin Hot Springs area, Oregon: U.S. Geological Survey Open File Report 96-41, 61 p.
- Owen, S., Segall, P., Freymueller, J. T., Miklius, A., Denlinger, R. P., Arnadottir, T., Sako, M. K., and Bürgmann, R., 1995, Rapid deformation of the south flank of Kilauea volcano, Hawaii: *Science*, v. 267, no. 5202, p. 1328-1332.
- Page, Bill, trip leader, with contributions from Bachhubber, J., Champion, D., Clynne, M., Donnelly-Nolan, J., Gertsel, W., Goff, F., Humphrey, J., Kelson, K., McLaren, M., Renne, P., Sawyer, T., Sowers, J., Unruh, J., Wakabayashi, J., and Yount, J., 1995, Quaternary geology along the boundary between the Modoc Plateau, southern Cascade Mountains, and northern Sierra Nevada: *Friends of the Pleistocene - 1995 Pacific Cell Field Trip*, 110 p.



- Page, R. A., Lahr, J. C., Chouet, B. A., Power, J. A., and Stephens, C. D., 1994, Statistical forecasting of repetitious dome failures during the waning eruption of Redoubt Volcano, Alaska, February-April 1990, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 183-196.
- Paillet, F. L., and Thomas, D. M., 1996, Hydrogeology of the Hawaii Scientific Drilling Project borehole KP-1: 1. Hydraulic conditions adjacent to the well bore: *Journal of Geophysical Research*, v. 101, p. 11,675-11,682.
- Paladio-Melosantos, M. L. O., Solidum, R. U., Scott, W. E., Quiambao, R. B., Umbal, J. V., Rodolfo, K. S., Tubianosa, B. S., Delos Reyes, P. J., Alonso, R. A., and Ruelo, H. B., 1996, Tephra falls on the 1991 eruptions of Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 513-535.
- Pallister, J. S., and du Bray, E. A., 1994, Campground talk and slide show on volcanoes for Chiricahua National Monument: U.S. Geological Survey Open-File Report 94-232, 16 p.
- Pallister, J. S., Hoblitt, R. P., Meeker, G. P., Knight, R. J., and Siems, D. F., 1996, Magma mixing at Mount Pinatubo: petrographic and chemical evidence from the 1991 deposits, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 687-731.
- Pallon, J. E., Okamura, R. T., Sako, M. K., and Wright, T. L., 1994, A summary of leveling data from Kilauea Iki lava lake from 1960 to 1988: U.S. Geological Survey Open-File Report 94-137, 33 p.
- Parfitt, E. A., Wilson, L., and Neal, C. A., 1995, Factors influencing the height of Hawaiian lava fountains: implications for the use of fountain height as an indicator of magma gas content: *Bulletin of Volcanology*, v. 57, p. 44-450.
- Paskievitch, J. F., Murray, T. L., Hoblitt, R. P., and Neal, C. A., 1995, Lightning associated with the August 18, 1992, eruption of Crater Peak vent, Mount Spurr volcano, Alaska, *in* Keith, T. E. C., ed., *The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska*: U.S. Geological Survey Bulletin 2139, p. 179-182.
- Peterson, D. W., 1996, Mitigation measures and preparedness plans for volcanic emergencies, *in* Scarpa, R., and Tilling, R. I., eds., *Monitoring and Mitigation of Volcano Hazards*: Springer, Berlin, p. 701-718.
- Peterson, D. W., Holcomb, R. T., Tilling, R. I., and Christiansen, R. L., 1994, Development of lava tubes in the light of observations at Mauna Ulu, Kilauea Volcano, Hawaii: *Bulletin of Volcanology*, v. 56, p. 343-360.
- Pieri, D. C., Khrenov, A. P., Miller, T. P., Zharinov, S. E., Realmuto, V., Abrams, M., Glaze, L. S., Kahle, A. B., Drozhin, V., Dvigalo, V., Kirianov, V., Abbott, E., and Chernobieff, S., 1997, Joint effort results in first TIMS survey of Kamchatka Volcanoes: *Eos Transactions of the American Geophysical Union*, v. 78, p. 125, 128.
- Pierson, T. C., 1995, Flow characteristics of large eruption-triggered debris flows at snow-clad volcanoes: constraints for debris-flow models: *Journal of Volcanology and Geothermal Research*, v. 66, p. 283-294.
- Pierson, T. C., ed., 1997, Hydrologic consequences of hot-rock/snowpack interactions at Mount St. Helens Volcano, Washington, 1982-84: U.S. Geological Survey Open-File Report 96-179, 117 p.
- Pierson, T. C., 1997, Transformation of water flood to debris flow following the eruption-triggered transient-lake breakout from the crater on March 19, 1982, *in* Pierson, T. C., ed., *Hydrologic consequences of hot-rock/snowpack interactions at Mount St. Helens Volcano, Washington, 1982-84*: U.S. Geological Survey Open-File Report 96-179, p. 19-36.
- Pierson, T. C., 1998, An empirical method for estimating travel times for wet volcanic mass flows: *Bulletin of Volcanology*, v. 60, p. 98-109.

- Pierson, T. C., Daag, A. S., Delos Reyes, P. J., Regalado, M. T. M., Solidum, R. U., and Tubianosa, B. S., 1996, Flow and deposition of posteruption hot lahars on the east side of Mount Pinatubo, July–October 1991, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 921-950.
- Pierson, T. C., and Janda, R. J., 1994, Volcanic mixed avalanches; a distinct eruption-triggered mass-flow process at snow-clad volcanoes: *Geological Society of America Bulletin*, v. 106, p. 1351-1358.
- Pierson, T. C., and Waitt, R. B., 1997, Introduction, *in* Pierson, T. C., ed., *Hydrologic consequences of hot-rock/snowpack interactions at Mount St. Helens Volcano, Washington, 1982-84*: U.S. Geological Survey Open-File Report 96-179, p. 1-8.
- Pierson, T. C., and Waitt, R. B., 1997, Dome-collapse rockslide and multiple sediment-water flows generated by a small explosive eruption on February 2–3, 1983, *in* Pierson, T. C., ed., *Hydrologic consequences of hot-rock/snowpack interactions at Mount St. Helens Volcano, Washington, 1982-84*: U.S. Geological Survey Open-File Report 96-179, p. 53-68.
- Pitt, A. M., and Hill, D. P., 1994, Long-period earthquakes in the Long Valley caldera region, eastern California: *Geophysical Research Letters*, v. 21, p. 1679-1682.
- Power, J. A., and Iwatsubo, E. Y., 1998, Measurements of slope distances and zenith angles at Augustine Volcano, Alaska 1986, 1988, 1989: U.S. Geological Survey Open-File Report 98-145, 17 p.
- Power, J. A., Jolly, A. D., Page, R. A., and McNutt, S. R., 1995, Seismicity and forecasting of the 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: an overview, *in* Keith, T. E. C., ed., *The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska*: U.S. Geological Survey Bulletin 2139, p. 149-159.
- Power, J. A., Lahr, J. C., Page, R. A., Chouet, B. A., Stephens, C. D., Harlow, D. H., Murray, T. L., and Davies, J. N., 1994, Seismic evolution of the 1989-1990 eruption sequence of Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska*: *Journal of Volcanology and Geothermal Research*, v. 62, p. 69-94.
- Power, J. A., Murray, T. L., Marso, J. N., and Laguerta, E. P., 1996, Preliminary observations of seismicity at Mount Pinatubo by use of the seismic spectral amplitude measurement (SSAM) system, May 13–June 18, 1991, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 269-283.
- Power, J. A., Villaseñor, A., and Benz, H. M., 1998, Seismic image of the Mount Spurr magmatic system: *Bulletin of Volcanology*, v. 60, p. 27-37.
- Power, J. A., Wyss, Max, and Latchman, J. L., 1998, Spatial variations in the frequency-magnitude distribution of earthquakes at Soufrière Hills Volcano, Montserrat, West Indies: *Geophysical Research Letters*, v. 25, p. 3653-3656.
- Pribnow, D. F. C., and Sass, J. H., 1995, Determination of thermal conductivity for deep boreholes: *Journal of Geophysical Research*, v. 100, p. 9981-9994.
- Pribnow, D., Williams, C. F., Sass, J. H., and Keating, R., 1996, Thermal conductivity of water-saturated rocks from the KTB pilot hole at temperatures of 25 to 300°C: *Geophysical Research Letters*, v. 23, p. 391-394.
- Priest, S. S., Sass, J. H., Ellsworth, Bill, Farrar, C. D., Sorey, M. L., Hill, D. P., Bailey, Roy, Jacobson, R. D., Finger, J. T., McConnell, V. S., and Zoback, Mark, 1998, Scientific drilling in Long Valley, California—What will we learn?: U.S. Geological Survey Fact Sheet 77-98, 2 p.
- Pringle, P. T., ed., with contributions by Driedger, C. L., Frank, D., McKenna, J., Murphy, M. T., Scott, K. M., Sisson, T. W., Vallance, J. W., Venezky, D. Y., Walder, J. S., and Zimbelman, D. R., 1994, Mount Rainier, a Decade Volcano GSA field trip, *in* Swanson,

- D. A., and Haugerud, R. A., eds., Geologic field trips in the Pacific Northwest, v. 2, 1994 Geological Society of America Annual Meeting, Department of Geological Sciences, University of Washington, Seattle, p. 2G.1-2G.24.
- Pringle, P. T., and Cameron, K. A., 1997, Eruption-triggered lahar on May 14, 1984, *in* Pierson, T. C., ed., Hydrologic consequences of hot-rock/snowpack interactions at Mount St. Helens Volcano, Washington, 1982-84: U.S. Geological Survey Open-File Report 96-179, p. 81-103.
- Przedpelski, Z. J., and Casadevall, T. J., 1994, Impact of volcanic ash from 15 December 1989 Redoubt volcano eruption on GE CF6-80C2 Turbofan engines, *in* Casadevall, T. J., ed., Proceedings of the first international symposium on volcanic ash and aviation safety: U.S. Geological Survey Bulletin 2047, p. 129-135.
- Puniwai, G. S., and Largo, A. J., 1995, Hawaiian Volcano Observatory; Summary 92, Part III, Electronic tilt data, January to December 1992: U.S. Geological Survey Open-File Report 95-267, 48 p.
- Puniwai, G. S., and Largo, A. J., 1995, Hawaiian Volcano Observatory; Summary 93, Part III, Electronic tilt data, January to December 1993: U.S. Geological Survey Open-File Report 95-268, 32 p.
- Puniwai, G. S., and Largo, A. J., 1995, Hawaiian Volcano Observatory; Summary 94, Part III; Electronic tilt data, January to December 1994: U.S. Geological Survey Open-File Report 95-639, 26 p.
- Punongbayan, R. S., Newhall, C. G., Bautista, M. L. P., Garcia, D., Harlow, D. H., Hoblitt, R. P., Sabit, J. P., and Solidum, R. U., 1996, Eruption hazards assessments and warnings, *in* Newhall, C. G., and Punongbayan, R. S., eds., Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 67-85
- Punongbayan, R. S., Newhall, C. G., and Hoblitt, R. P., 1996, Photographic record of rapid geomorphic change at Mount Pinatubo, 1991-94, *in* Newhall, C. G., and Punongbayan, R. S., eds., Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 21-66
- Quilty, E. G., Farrar, C. D., Galloway, D. L., Hamlin, S. N., Laczniak, R. J., Roeloffs, E. A., Sorey, M. L., and Woodcock, D. E., 1995, Hydrologic effects associated with the January 17, 1994 Northridge, California, earthquake: U.S. Geological Survey Open-File Report 95-813, 47 p.
- Realmuto, V. J., Sutton, A. J., and Elias, T., 1997, Multispectral thermal infrared mapping of sulfur dioxide plumes: A case study from the East Rift Zone of Kilauea Volcano, Hawaii: *Journal of Geophysical Research*, v. 102, p. 15,057-15,072.
- Reid, M. E., and LaHusen, R. G., 1998, Real-time monitoring of active landslides along Highway 50, El Dorado County: *California Geology*, v. 51, no. 3, p. 17-20
- Reid, M. E., LaHusen, R. G., and Iverson, R. M., 1997, Debris-flow initiation experiments using diverse hydrologic triggers, *in* Chen, Cheng-lung, ed., Debris-Flow Hazards Mitigation: Mechanics, Prediction, and Assessment, Proceedings of First International Conference, San Francisco, 1997: New York, American Society of Civil Engineers, p. 1-11.
- Rhodes, J. M., and Lockwood, J. P., eds., 1995, Mauna Loa revealed; structure, composition, history, and hazards: American Geophysical Union, Geophysical Monograph 92, 348 p.
- Richter, D. H., Moll-Stalcup, Elizabeth, Duffield, W. A., and Shew, Nora, 1997, Geologic map of the Nabesna A-6 quadrangle, Alaska: U.S. Geological Survey Open-File Report 97-475, 22p., 1 plate, scale 1:63,360.
- Richter, D. H., Moll-Stalcup, E. J., Miller, T. P., Lanphere, M. A., Dalrymple, G. B., and Smith, R. L., 1994, Eruptive history and petrology of Mount Drum Volcano, Wrangell Mountains, Alaska: *Bulletin of Volcanology*, v. 56, p. 29-46.

- Richter, D. H., Preece, S. J., McGimsey, R. G., and Westgate, J. A., 1995, Mount Churchill, Alaska; source of the late Holocene White River Ash: *Canadian Journal of Earth Sciences*, v. 32, p. 741-748.
- Richter, D. H., Symonds, R. B., Rosenkrans, D. S., McGimsey, R. G., Evans, W. C., and Poreda, R. J., 1998, Report on the 1997 activity of Shrub Mud Volcano, Wrangell-St. Elias National Park and Preserve, southcentral Alaska: U.S. Geological Survey Open-File Report 98-128, 13 p.
- Richter, D. H., Waythomas, C. F., McGimsey, R. G., and Stelling, P. L., 1998, Geologic map of Akutan Island, Alaska: U.S. Geological Survey Open-File Report 98-135, 22 p., 1 plate, scale 1:48,000.
- Riciputi, L. R., Johnson, C. M., Sawyer, D. A., and Lipman, P. W., 1995, Crustal and magmatic evolution in a large multicyclic caldera complex; isotopic evidence from the central San Juan volcanic field: *Journal of Volcanology and Geothermal Research*, v. 67, p. 1-28.
- Riehle, J. R., Budahn, J. R., Lanphere, M. A., and Brew, D. A., 1994, Rare earth element contents and multiple mantle sources of the transform-related Mount Edgecumbe basalts, southeastern Alaska: *Canadian Journal of Earth Sciences*, v. 31, p. 852-864.
- Riehle, J. R., Miller, T. F., and Bailey, R. A., 1995, Cooling, degassing and compaction of rhyolitic ash flow tuffs: a computational model: *Bulletin of Volcanology*, v. 57, p. 319-336.
- Riehle, J. R., Waite, R. B., Meyer, C. E., and Calk, L. C., 1998, Age of formation of Kaguyak caldera, eastern Aleutian arc, Alaska, estimated by tephrochronology, *in* Gray, J. E., and Riehle, J. R., eds., *Geologic Studies in Alaska by the U.S. Geological Survey*, 1996, U.S. Geological Survey Professional Paper 1595, p. 161-168.
- Roach, A. L., Neal, C. A., and McGimsey, R. G., 1996, Photographs of the 1989-90 eruptions of Redoubt Volcano, Alaska: U.S. Geological Survey Open-File Report 96-689, 30 p.
- Roberts, Carter, 1997, Density measurements of well samples from the Clear Lake-Geysers area, Lake and Sonoma counties, California: U.S. Geological Survey Open-File Report 97-427, 8 p.
- Roberts, C. W., Blakely, R. J., and Finn, Carol, 1997, Preliminary merged aeromagnetic map of Oregon: U.S. Geological Survey Open-File Report 97-440, 2 plates, scale 1:500,000.
- Robertson, E. C., and Hemingway, B. S., 1995, Estimating heat capacity and heat content of rocks: U.S. Geological Survey Open-File Report 95-622, 38 p.
- Robie, R. A., and Hemingway, B. S., 1995, Thermodynamic properties of minerals and related substances at 298.15 K and 1 bar ( $10^5$  Pascals) pressure and at higher temperatures: U.S. Geological Survey Bulletin 2131, 461 p.
- Roeloffs, E. A., 1994, An updated numerical simulation of the ground-water system for the Castle Lake debris dam, Mount St. Helens, Washington, and implications for dam stability against heave: U.S. Geological Survey Water-Resources Investigations Report 94-4075, 80 p.
- Roeloffs, E. A., Danskin, W. R., Farrar, C. D., Galloway, D. L., Hamlin, S. N., Quilty, E. G., Quinn, H. M., Schaefer, D. H., Sorey, M. L., and Woodcock, D. E., 1995, Hydrologic effects associated with the June 28, 1992 Landers, California, earthquake sequence: U.S. Geological Survey Open-File Report 95-42, 68 p.
- Rogers, J. A., and Stephens, C. D., 1995, SSAM; real-time seismic spectral amplitude measurement on a PC and its application to volcano monitoring: *Bulletin of the Seismological Society of America*, v. 85, p. 632-639.
- Rose, T. P., Criss, R. E., Mughannam, A. J., and Clynne, M. A., 1994, Oxygen isotope evidence for hydrothermal alteration within a Quaternary stratovolcano, Lassen Volcanic National Park, California: *Journal of Geophysical Research*, v. 99, p. 21,621-21,633.

- Ross, Alwyn, Foulger, G. R., and Julian, B. R., 1996, Non-double-couple earthquake mechanisms at The Geysers geothermal area, California: *Geophysical Research Letters*, v. 23, p. 877-880.
- Ryan, M. P., 1994, Rocks & minerals; igneous petrology: *Geotimes*, v. 39, n. 2, p. 31.
- Ryan, M. P., ed., 1994, *Magmatic Systems*, International Geophysics Series, v. 57, Academic Press, 401 p.
- Ryan, M. P., 1994, Neutral-buoyancy controlled magma transport and storage in mid-ocean ridge magma reservoirs and their sheeted-dike complex; a summary of basic relationships, *in* Ryan, M. P., ed., *Magmatic Systems*, International Geophysics Series, v. 57, Academic Press, p. 97-138.
- Ryan, M. P., 1994, Book review: *Active Lavas: Monitoring and Modelling* edited by C. R. J. Kilburn and G. Luongo: *Journal of Petrology*, v. 35, p. 1178-1180.
- Ryan, M. P., 1995, Book review: *Phase Transformations and Rock Genesis* by M. V. Abdulov: *Tectonophysics*, v. 248, p. 166-168.
- Ryan, M. P., 1995, Book review: *The Mid-Oceanic Ridges: Mountains Below Sea Level* by A. Nichols: *Marine Geology*, v. 128, p. 224-226.
- Ryan, M. P., 1997, Book review of *Backarc Basins: Tectonics and magmatism*, edited by Brian Taylor, Plenum Press, New York, 1995: *Journal of Volcanology and Geothermal Research*, v. 75, p. 179-181.
- Ryan, M. P., 1998, Review of *Tectonic, Magmatic, Hydrothermal and Biological Segmentation of Mid-Ocean Ridges*, edited by C. J. MacLeod, P. A. Taylor, and C. L. Walker, Geological Society Special Publication No. 118, The Geological Society, London, 1996, 258 p.: *Tectonophysics*, v. 284, p. 175-177.
- Saccorotti, Gilberto, Chouet, Bernard, Martini, Marcello, and Scarpa, Roberto, 1998, Bayesian statistics applied to the location of the source of explosions at Stromboli Volcano, Italy: *Bulletin of the Seismological Society of America*, v. 88, p. 1099-1111.
- Sako, M. K., Trusdell, F. A., Koyanagi, R. Y., Kojima, G., and Moore, R. B., 1995, Volcanic investigations in the Commonwealth of the Northern Mariana Islands, April to May 1994: U.S. Geological Survey Open-File Report 94-705, 57 p.
- Saltus, R. W., and Jachens, R. C., 1995, Gravity and basin-depth maps of the Basin and Range Province, Western United States: U.S. Geological Survey Geophysical Investigations Map GP-1012, scale 1:2,500,000.
- Sasada, Masakatsu, Doi, Nobuo, Muffler, L. J. P., and Hedenquist, J. W., 1998, Deep Geothermal Systems: Japanese National Project at Kakkonda: *Geothermics*, v. 27, p. 505-721.
- Sasada, Masakatsu, Doi, Nobuo, Muffler, L. J. P., and Hedenquist, J. W., 1998, Preface, *in* Sasada, Masakatsu, Doi, Nobuo, Muffler, L. J. P., and Hedenquist, J. W., eds., *Deep Geothermal Systems: Japanese National Project at Kakkonda: Geothermics*, v. 27, p. 505.
- Sass, J. H., 1995, Mining the Earth's heat in the Basin and Range: *Geothermal Resources Council Bulletin*, v. 24, no. 4, p. 125-129.
- Sass, J. H., 1996, Hot dry rock and the U.S. Geological Survey: A question of priorities: *Geothermal Resources Council Bulletin*, v. 25, p. 313-315.
- Sass, John, Finger, John, and McConnell, Vicki, 1998, The Long Valley coring project: *Bulletin of the Geothermal Resources Council*, v. 27, p. 43-46.
- Sass, J. H., Lachenbruch, A. H., Galanis, S. P., Jr., Morgan, Paul, Priest, S. S., Moses, T. H., Jr., and Munroe, R. J., 1994, Thermal regime of the southern Basin and Range Province: 1. Heat flow data from Arizona and the Mojave Desert of California and Nevada: *Journal of Geophysical Research*, v. 99, p. 22,093-22,119.
- Sato, Hiroki, and Ryan, M. P., 1994, Generalized upper mantle thermal structure of the Western United States and its relationship to seismic attenuation, heat flow, partial melt, and magma ascent and emplacement, *in* Ryan, M. P., ed., *Magmatic Systems*, International Geophysics Series, v. 57, Academic Press, p. 259-290.

- Savage, J. C., Lisowski, M., and Prescott, W. H., 1996, Observed discrepancy between Geodolite and GPS distance measurements: *Journal of Geophysical Research*, v. 101, p. 25,547-25,552.
- Scarpa, R., and Tilling, R. I., eds., 1996, *Monitoring and Mitigation of Volcano Hazards*: Springer, Berlin, 841 p.
- Schilling, S. P., and Iverson, R. M., 1997, Automated, reproducible delineation of zones at risk from inundation by large volcanic debris flows, *in* Chen, Cheng-lung, ed., *Debris-Flow Hazards Mitigation: Mechanics, Prediction, and Assessment*, Proceedings of First International Conference, San Francisco, 1997: New York, American Society of Civil Engineers, p. 176-186.
- Scholl, M. A., and Ingebritsen, S. E., 1995, Total and non-seasalt sulfate and chloride measured in bulk precipitation samples from the Kilauea Volcano area, Hawaii: U.S. Geological Survey Water Resources Investigations Report 95-4001, 32 p.
- Scholl, M. A., Ingebritsen, S. E., Janik, C. J., and Kauahikaua, J. P., 1995, An isotope hydrology study of the Kilauea Volcano area, Hawaii: U.S. Geological Survey Water Resources Investigations Report 95-4213, 44 p.
- Scholl, M. A., Ingebritsen, S. E., Janik, C. J., and Kauahikaua, J. P., 1996, Use of precipitation and groundwater isotopes to interpret regional hydrology on a tropical volcanic island: Kilauea volcano area, Hawaii: *Water Resources Research*, v. 32, p. 3525-3537.
- Scott, K. M., Janda, R. J., de la Cruz, E. G., Gabinete, E., Ito, I., Isada, M., Sexon, M., and Hadley, K. C., 1996, Channel and sedimentation responses to large volumes of 1991 volcanic deposits on the east flank of Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo*, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 971-988.
- Scott, K. M., and Vallance, J. W., 1994, History of landslides and debris flows at Mount Rainier: Water fact sheet, U. S. Geological Survey Open-File Report 93-111, 2p.
- Scott, K. M., and Vallance, J. W., 1995, Debris flow, debris avalanche, and flood hazards at and downstream from Mount Rainier, Washington: U.S. Geological Survey Hydrologic Investigations Atlas HA-729, 9 p., 2 plates, scale 1 1:100,000, 1:50,000.
- Scott, K. M., Vallance, J. W., and Pringle, P. T., 1995, Sedimentology, behavior, and hazards of debris flows at Mount Rainier, Washington: U.S. Geological Survey Professional Paper 1547, 56 p., 1 plate.
- Scott, K. M., Wolfe, E. W., and Driedger, C. L., 1998, Mount Rainier—Living with perilous beauty: U.S. Geological Survey Fact Sheet 65-97, 4 p.
- Scott, W. E., Gardner, C. A., Sherrod, D. R., Tilling, R. I., Lanphere, M. A., and Conrey, R. M., 1997, Geologic history of Mount Hood Volcano, Oregon—A field-trip guidebook: U.S. Geological Survey Open-File Report 97-263, 38 p.
- Scott, W. E., Hoblitt, R. P., Torres, R. C., Self, S., Martinez, M. M. L., and Nillos, T., Jr., 1996, Pyroclastic flows of the June 15, 1991, climactic eruption of Mount Pinatubo, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo*, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 545-570.
- Scott, W. E., Iverson, R. M., Vallance, J. W., and Hildreth, W., 1995, Volcano hazards in the Mount Adams Region, Washington: U.S. Geological Survey Open-File Report 95-492, 11 p., 2 plates, scale 1:500,000, 1:100,000.
- Scott, W. E., and McGimsey, R. G., 1994, Character, mass, distribution, and origin of tephra-fall deposits of the 1989-1990 eruption of Redoubt Volcano, south-central Alaska, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano*, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 251-272.
- Scott, W. E., Pierson, T. C., Schilling, S. P., Costa, J. E., Gardner, C. A., Vallance, J. W., and Major, J. J., 1997, Volcano hazards in the Mount Hood region, Oregon: U.S. Geological Survey Open-File Report 97-89, 14 p., 1 plate, scale 1:100,000.

- Searcy, Craig, Dean, Ken, and Stringer, William, 1998, PUFF: A high-resolution volcanic ash tracking model: *Journal of Volcanology and Geothermal Research*, v. 80, p. 1-16.
- Self, S., Thordarson, Th., Keszthelyi, L., Walker, G. P. L., Hon, K., Murphy, M. T., Long, P., and F. Finnemore, S., 1996, A new model for the emplacement of Columbia River basalts as large, inflated pahoehoe flow fields: *Geophysical Research Letters*, v. 23, p. 2689-2692.
- Seltmann, Reimar, Lehmann, Bernd, Lowenstern, J. B., and Candela, P. A., eds., 1997, High-level silicic magmatism and related hydrothermal systems: International Association of Volcanology and Chemistry of the Earth's Interior 1997 selected papers: *Journal of Petrology*, v. 38, p. 1617-1807.
- Seltmann, Reimar, Lehmann, Bernd, Lowenstern, J. B., and Candela, P. A., 1997, High-level silicic magmatism and related hydrothermal systems: Editorial: *Journal of Petrology*, v. 38, p. 1617-1618.
- Sharp, W. D., Turrin, B. D., Renne, P. R., and Lanphere, M. A., 1996, The  $^{39}\text{Ar}/^{40}\text{Ar}$  and K/Ar dating of lavas from the Hilo 1-km core hole, Hawaii Scientific Drilling Project: *Journal of Geophysical Research*, v. 101, p. 11,607-11,616.
- Shaw, H. R., 1994, *Craters, cosmos, and chronicles; a new theory of Earth*: Stanford University Press, Stanford, CA, 688 p.
- Sherrod, D. R., Ingebritsen, S. E., Curless, J. M., Keith, T. E. C., Diaz, N. M., DeRoo, T. G., and Hurlocker, S. L., 1996, Water, rocks, and woods -- A field excursion to examine the geology, hydrology, and geothermal resources in the Clackamas, North Santiam, and McKenzie River drainages, Cascade Range, Oregon: *Oregon Geology*, v. 58, p. 103-124.
- Sherrod, D. R., Mastin, L. G., Scott, W. E., and Schilling, S. P., 1997, Volcano hazards at Newberry Volcano, Oregon: U.S. Geological Survey Open-File Report 97-513, 14 p., 1 plate, scale 1:100,000.
- Sherrod, D. R., and Scott, W. E., 1995, Preliminary geologic map of the Mount Hood 30- by 60-minute Quadrangle, northern Cascade Range, Oregon: U.S. Geological Survey Open-File Report 95-219, 35 p., 1 plate, scale 1:100,000.
- Shinohara, H., Kazahaya, K., and Lowenstern, J. B., 1995, Volatile transport in a convecting magma column: implications for porphyry Mo mineralization: *Geology*, v. 23, p. 1091-1094.
- Siebert, Lee, Begét, J. E., and Glicken, Harry, 1995, The 1883 and late pre-historic eruptions of Augustine volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 66, p. 367-395.
- Silverman, S. A., 1998, Interactive display of geologic features and hazards of the Mono Basin - Long Valley region, California: U.S. Geological Survey Open-File Report 97-458, 1 CD-ROM.
- Simkin, T., Unger, J. D., Tilling, R. I., Vogt, P. R., and Spall, H. R., 1994, This dynamic planet; world map of volcanoes, earthquakes, impact craters, and plate tectonics: U.S. Geological Survey Special Map, 1 plate, scale 1:30,000,000.
- Sims, K. W., DePaolo, D. J., Murrell, M. T., Baldrige, W. S., Goldstein, S. J., and Clague, D. A., 1995, Mechanisms of magma generation beneath Hawaii and mid-ocean ridges: uranium/thorium and samarium/neodymium isotopic evidence: *Science*, v. 267, p. 508-512.
- Singer, B. S., Thompson, R. A., Dungan, M. A., Feeley, T. C., Nelson, S. T., Pickens, J. C., Brown, L. L., Wulff, A. W., Davidson, J. P., and Metzger, J., 1997, Volcanism and erosion during the past 930 k.y. at the Tatará-San Pedro complex, Chilean Andes: *Geological Society of America Bulletin*, v. 109, p. 127-142.
- Sisson, T. W., 1994, Hornblende-melt trace-element partitioning measured by ion microprobe: *Chemical geology*, v. 117, p. 331-344.
- Sisson, T. W., 1995, Blast ashfall deposit of May 18, 1980, at Mount St. Helens, Washington: *Journal of Volcanology and Geothermal Research*, v. 66, p. 203-216.

- Sisson, T. W., 1995, History and hazards of Mount Rainier, Washington: Volcano hazards fact sheet, U.S. Geological Survey Open-File Report 95-642, 2 p.
- Sisson, T. W., and Bronto, S., 1998, Evidence for pressure-release melting beneath magmatic arcs from basalt at Galunggung, Indonesia: *Nature*, v. 391, p. 883-886.
- Smith, R. B., and Braile, L. W., 1994, The Yellowstone hotspot: *Journal of Volcanology and Geothermal Research*, v. 61, p. 121-187.
- Sorey, M. L., 1997, Hydrologic changes associated with geothermal development in Long Valley, California: Proceedings of New Energy Development Organization International Geothermal Symposium, Sendai, Japan, p. 289-291.
- Sorey, M. L., and Colvard, E. M., 1994, Measurements of heat and mass flow from thermal areas in Lassen Volcanic National Park, California, 1984-93: U.S. Geological Survey Water Resources Investigations Report 94-4180-A, 35 p.
- Sorey, M. L., and Colvard, E. M., 1994, Potential effects of the Hawaii Geothermal Project on ground-water resources on the Island of Hawaii: U.S. Geological Survey Water Resources Investigations Report 94-4028, 35 p.
- Sorey, M. L., and Colvard, E. M., 1997, Hydrologic investigations in the Mammoth corridor, Yellowstone National Park and vicinity, U.S.A.: *Geothermics*, v. 26, p. 221-249.
- Sorey, M. L., Colvard, E. M., and Ingebritsen, S. E., 1994, Measurements of thermal-water discharge outside Lassen Volcanic National Park, California, 1983-94: U.S. Geological Survey Water Resources Investigations Report 94-4180-B, 45 p.
- Sorey, M. L., Evans, W. C., Farrar, C. D., and Kennedy, B. M., 1998, Carbon dioxide and helium emissions from a reservoir of magmatic gas beneath Mammoth Mountain, California, in Arehart, G. B., and Hulston, J. R., eds., *Water-Rock Interaction, Proceedings of the 9th International Symposium on Water-Rock Interaction*, Taupo, New Zealand, Balkema, Rotterdam, p. 491-494.
- Sorey, M. L., Evans, W. C., Kennedy, B. M., Farrar, C. D., Hainsworth, L. J., and Hausback, B., 1998, Carbon dioxide and helium emissions from a reservoir of magmatic gas beneath Mammoth Mountain, California: *Journal of Geophysical Research*, v. 103, p. 15,303-15,323.
- Sorey, M. L., and Farrar, C. D., 1998, Hydrologic and chemical data from the Long Valley Hydrologic Advisory Committee monitoring program in Long Valley Caldera, Mono County, California, 1988-1997: U.S. Geological Survey Open-File Report 98-70, 49 p.
- Sorey, M. L., and Farrar, C. D., 1998, Changes in surficial features associated with geothermal development in Long Valley caldera, California, 1985-1997: *Geothermal Resources Council Transactions*, v. 22, p. 61-63.
- Sorey, M. L., Farrar, C. D., Evans, W. C., Hill, D. P., Bailey, R. A., Hendley, J. W., II, and Stauffer, P. H., 1996, Invisible CO<sub>2</sub> gas killing trees at Mammoth Mountain, California: U.S. Geological Survey Fact Sheet 172-96, 2 p.
- Sorey, M. L., Farrar, C. D., Marshall, G. A., and Howle, J. F., 1995, Effects of geothermal development on deformation in the Long Valley caldera, eastern California, 1985-1994: *Journal of Geophysical Research*, v. 100, p. 12,475-12,486.
- Sorey, M. L., and Ingebritsen, S. E., 1995, Heat and mass flow from thermal areas in and adjacent to Lassen Volcanic National Park, California, USA: Proceedings, World Geothermal Congress, Florence, Italy, 18-31 May, 1995, v. 2., p. 751-755.
- Sorey, M. L., Kharaka, Y. K., and Evans, W. C., 1994, Effects of potential geothermal development on the thermal features of Yellowstone National Park; Part 1, Perspective 2; The U.S. Geological Survey study: *GSA Today*, v. 4, no. 12, p. 296-297.
- Sorey, M. L., Kharaka, Y. K., Stanley, W. D., and Sturchio, N. C., 1994, Geothermal systems in the Mammoth corridor at Yellowstone National Park, USA: *Geothermal Resources Council, Transactions*, v. 18, p. 241-245.
- Sorey, M. L., and Olmsted, F. H., 1994, The hydrothermal system associated with Leach Hot Springs in southern Grass Valley, Nevada: *Geothermal Resources Council, Transactions*, v. 18, p. 31-36.



- Spicer, K. R., Costa, J. E., and Placzek, Gary, 1997, Measuring flood discharge in unstable stream channels using ground-penetrating radar: *Geology*, v. 25, p. 423-426.
- Stanley, W. D., Benz, H. M., Walters, M. A., and Rodriguez, B. D., 1997, Tectonic controls on magmatism and geothermal resources in The Geysers-Clear Lake region, California: Integration of new geologic, earthquake tomography, seismicity, gravity, and magnetotelluric data: U.S. Geological Survey Open-File Report 97-95, 40 p.
- Stanley, W. D., Benz, H. M., Walters, M. A., Villaseñor, Antonio, and Rodriguez, B. D., 1998, Tectonic controls on magmatism in The Geysers-Clear Lake region: Evidence from new geophysical models: *Geological Society of America Bulletin*, v. 110, p. 1193-1207.
- Stanley, W. D., and Blakely, R. J., 1995, The Geysers-Clear Lake geothermal area, California - an updated geophysical perspective of heat sources: *Geothermics*, v. 24, p. 187-221.
- Stanley, W. D., Johnson, S. Y., and Nuccio, V. F., 1994, Analysis of deep seismic reflection and other data from the southern Washington Cascades: U.S. Geological Survey Open-File Report 94-159, 179 p., 1 plate.
- Stanley, W. D., Johnson, S. Y., Qamar, A. I., Weaver, C. S., and Williams, J. M., 1996, Tectonics and seismicity of the southern Washington Cascade Range: *Bulletin of the Seismological Society of America*, V. 86, p. 1-18.
- Stanley, W. D., and Rodriguez, B. D., 1995, A revised tectonic model for The Geysers-Clear Lake geothermal region, California: *Proceedings, World Geothermal Congress, Florence, Italy, 1831 May, 1995*, v. 2., p. 1193-1198.
- Stephens, C. D., Chouet, B. A., Page, R. A., Lahr, J. C., and Power, J. A., 1994, Seismological aspects of the 1989-1990 eruptions at Redoubt Volcano, Alaska: the SSAM perspective, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska: Journal of Volcanology and Geothermal Research*, v. 62, p. 153-182.
- Strobe, Robert, Rice, W., and Neal, C. A., 1995, Topographic maps of Novarupta dome and selected portions of the Valley of Ten Thousand Smokes, Katmai National Park and Preserve, Alaska: U.S. Geological Survey Open-File Report 95-619, 4 plates, scale 1:48,000, 1:2,400.
- Sturchio, N. C., Pierce, K. L., Murrell, M. T., and Sorey, M. L., 1994, Uranium-series ages of travertines and timing of the last glaciation in the northern Yellowstone area, Wyoming-Montana: *Quaternary Research*, v. 41, p. 265-277.
- Sutton, Jeff, and Elias, Tamar, 1993 (1994), Volcanic gases create air pollution on the Island of Hawai'i: *Earthquakes and Volcanoes*, v. 24, n. 4, p. 178-196.
- Sutton, Jeff, Elias, Tamar, Hendley, J. W., II, and Stauffer, P. H., 1997, Volcanic air pollution—a hazard in Hawaii: U.S. Geological Survey Fact Sheet 169-97, 2 p.
- Sutton, A. J., Elias, T., and Navarrete, R., 1994, Volcanic gas emissions and their impact on ambient air character at Kilauea volcano, Hawaii: U.S. Geological Survey Open-File Report 94-569, 34 p.
- Swanson, D. A., 1994, The observational side of volcanology: *Bulletin of Volcanology*, v. 56, p. 133.
- Swanson, D. A., 1995, Harry Glicken 1958–1991: *Journal of Volcanology and Geothermal Research*, v. 66, p. xii-xiv.
- Swanson, D. A., Moore, R. B., and Banks, N. G., 1997, Geologic map of the Packwood quadrangle, southern Cascade Range, Washington: U.S. Geological Survey Open-File Report 97-157, 18p., 2 plates, scale 1:24,000.
- Swanson, S. E., and Begét, J. E., 1994, Melting properties of volcanic ash, *in* Casadevall, T. J., ed., *Proceedings of the first international symposium on volcanic ash and aviation safety*: U.S. Geological Survey Bulletin 2047, p. 87-92.
- Swanson, S. E., Harbin, M. L., and Riehle, J. R., 1995, Use of volcanic glass from ash as a monitoring tool: an example from the 1992 eruptions of Crater Peak, Mount Spurr volcano, Alaska: *in* Keith, T. E. C., ed., *The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska*: U.S. Geological Survey Bulletin 2139, p. 129-137.

- Swanson, S. E., Nye, C. J., Miller, T. P., and Avery, V. F., 1994, Geochemistry of the 1989-1990 eruption of Redoubt Volcano: Part II. Evidence from mineral and glass chemistry, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 453-468.
- Symonds, R. B., 1998, Compositions, origins, emission rates and atmospheric impacts of volcanic gases: U.S. Geological Survey Open-File Report 98-776, 12 p.
- Symonds, R. B., and Gerlach, T. M., 1998, Modelling the interaction of magmatic gases with water in active volcanoes, *in* Arehart, G. B., and Hulston, J. R., eds., *Water-Rock Interaction, Proceedings of the 9th International Symposium on Water-Rock Interaction*, Taupo, New Zealand, Balkema, Rotterdam, p. 495-498.
- Symonds, R. B., Mizutani, Yoshihiko, and Briggs, P. H., 1996, Long-term geochemical surveillance of fumaroles at Showa-Shinzan Dome, Usu Volcano, Japan: *Journal of Volcanology and Geothermal Research*, v. 73, p. 177-211.
- Symonds, R. B., Ritchie, B. E., McGimsey, R. G., Ort, M. H., Poreda, R. J., Evans, W. C., and Janik, C. J., 1997, Investigations of gas seeps and springs in the vicinity of the Gas Rocks, south shore Becharof Lake, Alaska: U.S. Geological Survey Open-File Report 97-127, 27 p.
- Symonds, R. B., Rose, W. I., Bluth, G. J., and Gerlach, T. M., 1994, Volcanic-gas studies; methods, results, and applications, *in* Carroll, M. R., and Holloway, J. R., eds., *Volatiles in magmas, Reviews in Mineralogy*, v. 30, p. 1-66.
- Takahashi, T. J., Abston, C. C., and Heliker, C. C., 1995, Images of Kilauea East Rift Zone eruption, 1983-1993: U.S. Geological Survey DDS-24, One CD-ROM.
- Tanaka, H. L., 1994, Development of a prediction scheme for volcanic ash fall from Redoubt volcano, Alaska, *in* Casadevall, T. J., ed., *Proceedings of the first international symposium on volcanic ash and aviation safety: U.S. Geological Survey Bulletin 2047*, p. 283-291.
- Tanyileke, G. Z., Kusakabe, M. and Evans, W. C., 1996, Chemical and isotopic characteristics of fluids along the Cameroon volcanic line, Cameroon: *Journal of African Earth Sciences*, v. 22, p. 433-441.
- Thatcher, Wayne, and Massonnet, Didier, 1997, Crustal deformation at Long Valley Caldera, eastern California, 1992-1996 inferred from satellite radar interferometry: *Geophysical Research Letters*, v. 24, p. 2519-2522.
- The 1996 Loihi Science Team, 1997, Researchers rapidly respond to submarine activity at Loihi Volcano, Hawaii: *Eos Transactions of the American Geophysical Union*, v. 78, p. 229, 232, 233.
- Thomas, D. M., Paillet, F. L., and Conrad, M. E., 1996, Hydrogeology of the Hawaii Scientific Drilling Project borehole KP-1: 2. Groundwater geochemistry and regional flow patterns: *Journal of Geophysical Research*, v. 101, p. 11,683-11,694.
- Thompson, J. M., and DeMonge, J. M., 1996, Chemical analyses of hot springs, pools, and geysers from Yellowstone National Park, Wyoming, and vicinity, 1980-1993: U.S. Geological Survey Open-File Report 96-68, 66 p.
- Thornber, C. H., 1997, HVO/RVTS-1: A prototype remote video telemetry system for monitoring the Kilauea East Rift Zone eruption, 1997: U.S. Geological Survey Open-File Report 97-537, 18 p.
- Till, A. B., Yount, M. E., and Bevier, M. L., 1994, The geologic history of Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: *Journal of Volcanology and Geothermal Research*, v. 62, p. 11-30.
- Tilling, R. I., 1995, Book review: *Volcanoes and Society*, David Chester (1993), Edward Arnold, UK: *Bulletin of Volcanology*, v. 57, p. 71-72.
- Tilling, R. I., 1995, The role of monitoring in forecasting volcanic events: chap. 14 of *Monitoring Active Volcanoes*, London, University College London, p. 369-397.
- Tilling, R. I., 1996, Hazards and climatic impact of subduction-zone volcanism; a global and historical perspective, *in* Bebout, G. E., Scholl, D. W., Kirby, S. H., and Platt, J. P.,

- eds., Subduction Top to Bottom, American Geophysical Union Geophysical Monograph 96, p. 331-335.
- Tilling, R. I., 1996, Volcano unrest, *in* Berger, A. R., and Iams, W. J., eds., Geoinicators: assessing rapid environmental changes in Earth systems, Balkema, Rotterdam, p. 447-449.
- Tilling, R. I., and Jones, B. F., 1995, Composition of waters from the research drill hole at the summit of Kilauea Volcano, Hawaii; 1973-1991: U.S. Geological Survey Open-File Report 95-532, 41 p.
- Tilling, R. I., and Jones, B. F., 1996, Waters associated with an active basaltic volcano, Kilauea, Hawaii: Variation in solute sources, 1973-1991: Geological Society of America Bulletin, v. 108, p. 562-577.
- Trabant, D. C., and Hawkins, D. B., 1997, Glacier ice-volume modeling and glacier volumes on Redoubt Volcano, Alaska: U.S. Geological Survey Water-Resources Investigations Report 97-4187, 29 p.
- Trabant, D. C., Waitt, R. B., and Major, J. J., 1994, Disruption of Drift glacier and origin of floods during the 1989-1990 eruptions of Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: Journal of Volcanology and Geothermal Research, v. 62, p. 369-385.
- Trusdell, F. A., 1995, Lava flow hazards and risk assessment on Mauna Loa Volcano, Hawaii, *in* Rhodes, J. M., and Lockwood, J. P., eds., Mauna Loa revealed; structure, composition, history, and hazards: American Geophysical Union, Geophysical Monograph 92, p. 327-336.
- Turrin, B. D., Champion, D. E., Fleck, R. J., Curtis, G. H., and Drake, R. E., 1998, K-Ar ages and paleomagnetic directions from the Lathrop Wells volcanic center, southwestern Nevada: An evaluation of polycyclic volcanism: U.S. Geological Survey Open-File Report 98-44, 32 p.
- Turrin, B. D., Christiansen, R. L., Clynne, M. A., Champion, D. E., Gertsel, W. J., Muffler, L. J. P., and Trimble, D. A., 1998, Age of Lassen Peak, California, and implications for the ages of late Pleistocene glaciations in the southern Cascade Range: Geological Society of America Bulletin, v. 110, p. 931-945.
- Turrin, B. D., Donnelly-Nolan, J. M., and Hearn, B. C., Jr., 1994,  $^{40}\text{Ar}/^{39}\text{Ar}$  ages from the rhyolite of Alder Creek, California: age of the Cobb Mountain normal polarity subchron revisited: *Geology*, v. 22, p. 251-254.
- U.S. Geological Survey, 1994, Preparing for the next eruption in the Cascades: U.S. Geological Survey Open-File Report 94-585, 4 p.
- U.S. Geological Survey, 1995, Bibliography of reports from the Volcano Hazards Program, Water Resources Division, 1980-1994: U.S. Geological Survey Open-File Report 95-131, 25 p.
- U.S. Geological Survey, 1995, The National Volcano Hazards Program, An inter-divisional, integrated approach to mitigate volcano hazards: U.S. Geological Survey, 28 p.
- U.S. Geological Survey, 1996, Aeromagnetic map of the Clear Lake region on parts of the Santa Rosa and Ukiah  $1^\circ$  by  $2^\circ$  quadrangles, California: U.S. Geological Survey Open-File Report 96-691, 1 plate, scale 1:100,000.
- U.S. Geological Survey, 1996, Perilous Beauty, The Hidden Dangers of Mount Rainier: VHS video, 29 min.
- U.S. Geological Survey, 1997, Who's keeping watch over Cascades volcanoes?: U.S. Geological Survey Open-File Report 97-125, 6 p.
- U.S. Geological Survey, 1997, Volcanoes!: U.S. Geological Survey, teaching guide, 6 lessons, 1 folded plate.
- Vallance, J. W., and Scott, K. M., 1997, The Osceola mudflow from Mount Rainier: sedimentology and hazard implications of a huge clay-rich debris flow: Geological Society of America Bulletin, v. 109, p. 143-163.

- Valet, Jean-Pierre, Tric, Emmanuel, Herrero-B, Emilio, Maynadier, Laure, and Lockwood, J. P., 1998, Absolute paleointensity from Hawaiian lavas younger than 35 ka: Earth and Planetary Science Letters, v. 161, p. 19-32.
- Varekamp, J. C., and Rowe, G. L., 1997, Exotic fluids in the Exosphere: When Hades meets Apollo: Eos Transactions of the American Geophysical Union, v. 78, p. 237, 239.
- Vitousek, P. M., Aplet, G. H., Raich, J. W., and Lockwood, J. P., 1995, Biological perspectives on Mauna Loa Volcano; a model system for ecological research, *in* Rhodes, J. M., and Lockwood, J. P., eds., Mauna Loa revealed; structure, composition, history, and hazards: American Geophysical Union, Geophysical Monograph 92, p. 117-126.
- Voight, B., 1996, The management of volcano emergencies; Nevado del Ruiz, *in* Scarpa, R., and Tilling, R. I., eds., Monitoring and Mitigation of Volcano Hazards: Springer, Berlin, p. 719-769.
- Voight, B., Hoblitt, R. P., Clarke, A. B., Lockhart, A. B., Miller, A. D., Lynch, L., and McMahon, J., 1998, Remarkable cyclic ground deformation monitored in real-time on Montserrat, and its use in eruption forecasting: Geophysical Research Letters, v. 25, p. 3405-3408.
- Volcano Hazards Team, 1997, Volcano Hazards Program five-year science plan—1998 to 2002: U.S. Geological Survey Open-File Report 97-680, 23 p.
- Wagner, T. P., Clague, D. A., Hauri, E. H., and Grove, T. L., 1998, Trace element abundances of high-MgO glasses from Kilauea, Mauna Loa and Haleakala volcanoes, Hawaii: Contributions to Mineralogy and Petrology, v. 131, p. 13-21.
- Wagner, T. P., Donnelly-Nolan, J. M., and Grove, T. L., 1995, Evidence of hydrous differentiation and crystal accumulation in the low-MgO, high-Al<sub>2</sub>O<sub>3</sub> lake basalt from Medicine Lake volcano, California: Contributions to Mineralogy and Petrology, v. 121, p. 201-216.
- Waite, R. B., 1995, Hybrid wet flows formed by hot pyroclasts interacting with snow during the 1992 eruptions of Crater Peak, Mount Spurr, Alaska, *in* Keith, T. E. C., ed., The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, p. 107-118.
- Waite, R. B., and Begét, J. E., 1996, Provisional geologic map of Augustine Volcano, Alaska, *with contributions from* Juergen Kienle: U.S. Geological Survey Open-File Report 96-516, 44 p., 1 plate, scale 1:25,000
- Waite, R. B., Gardner, C. A., Pierson, T. C., Major, J. J., and Neal, C. A., 1994, Unusual ice diamicts emplaced during the December 15, 1989 eruption of Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., The 1989-1990 eruptions of Redoubt Volcano, Alaska: Journal of Volcanology and Geothermal Research, v. 62, p. 409-428.
- Waite, R. B., Mastin, L. G., and Begét, J. E., 1995, Volcanic-hazard zonation for Glacier Peak Volcano, Washington: U.S. Geological Survey Open-File Report 95-499, 9 p., 2 plates, scale 1:100,000.
- Waite, R. B., Mastin, L. G., and Miller, T. P., 1995, Ballistic showers during Crater Peak eruptions of Mount Spurr volcano, Summer 1992, *in* Keith, T. E. C., ed., The 1992 eruptions of Crater Peak Vent, Mount Spurr volcano, Alaska: U.S. Geological Survey Bulletin 2139, p. 89-106.
- Waite, R. B., and Pierson, T. C., 1994, The 1980 (mostly) and earlier explosive eruptions of Mount St. Helens volcano, *in* Swanson, D. A., and Haugerud, R. A., eds., Geologic field trips in the Pacific Northwest, v. 2, 1994 Geological Society of America Annual Meeting, Department of Geological Sciences, University of Washington, Seattle, p. 2I.1-2I.37.
- Walder, J. S., 1997, Nature of depositional contacts between pyroclastic deposits and snow or ice, *in* Pierson, T. C., ed., Hydrologic consequences of hot-rock/snowpack interactions at Mount St. Helens Volcano, Washington, 1982-84: U.S. Geological Survey Open-File Report 96-179, p. 9-18, 109-113, 117.

- Walder, J. S., and Costa, J. E., 1996, Outburst floods from glacier-dammed lakes; the effect of mode of lake drainage on flood magnitude: *Earth Surface Processes and Landforms*, v. 21, p. 701-723.
- Walder, J. S., and Driedger, C. L., 1994, Geomorphic change caused by glacial outburst floods and debris flows at Mount Rainier, Washington, with emphasis on Tahoma Creek valley: U.S. Geological Survey Water Resources Investigations Report, 93-4093, 93 p.
- Walder, J. S., and Driedger, C. L., 1994, Rapid geomorphic change caused by glacial outburst floods and debris flows along Tahoma Creek, Mount Rainier, Washington, USA: *Arctic and Alpine Research*, v. 26, p. 319-327.
- Walder, J. S., and Driedger, C. L., 1995, Frequent outburst floods from South Tahoma Glacier, Mount Rainier, U.S.A.: relation to debris flows, meteorological origin and implications for subglacial hydrology: *Journal of Glaciology*, v. 41, p. 1-10.
- Walder, J. S., and Driedger, C. L., 1995, Living with a volcano in your backyard, volcanic hazards at Mount Rainier: U.S. Geological Survey Open-File Report 95-421, 2 p.
- Walder, J. S., and Fountain, A. G., 1997, Glacier generated floods, *in* Leavesley, G. H., Lins, H. F., Nobilis, F., Parker, R. S., Schneider, V. R., and van den Ven, F. H. M., eds., *Destructive water: water-caused natural disasters, their abatement and control*, International Association of Hydrological Sciences Publication 239, p. 107-113.
- Walder, J. S., and Fowler, A., 1994, Channelized subglacial drainage over a deformable bed: *Journal of Glaciology*, v. 40, p. 3-15.
- Walder, J. S., and O'Connor, J. E., 1997, Methods for predicting peak discharge of floods caused by failure of natural and constructed earthen dams: *Water Resources Research*, v. 33, p. 2337-2348.
- Walder, J. S., and O'Connor, J. E., 1998, Methods for predicting peak discharge of floods caused by failure of natural and constructed earthen dams: *Water Resources Journal*, v. 197, p. 43-56.
- Walder, J. S., O'Connor, J. E., and Costa, J. E., 1997, A physically based method for predicting peak discharge of floods caused by failure of natural and constructed earthen dams: *in* Leavesley, G. H., Lins, H. F., Nobilis, F., Parker, R. S., Schneider, V. R., and van den Ven, F. H. M., eds., *Destructive water: water-caused natural disasters, their abatement and control*, International Association of Hydrological Sciences Publication 239, p. 217-224.
- Wallace, M. H., and Delaney, P. T., 1995, Deformation of Kilauea volcano during 1982 and 1983: A transition period: *Journal of Geophysical Research*, v. 100, p. 8201-8219.
- Wallace, P. J., and Gerlach, T. M., 1994, Magmatic vapor source for sulfur dioxide released during volcanic eruptions; evidence from Mount Pinatubo: *Science*, v. 265, n. 5171, p. 497-499.
- Walter, M. J., Sisson, T. W., and Presnall, D. C., 1995, A mass proportion method for calculating melting reactions and application to melting of model upper mantle lherzolite: *Earth and Planetary Science Letters*, v. 135, p. 77-90.
- Waythomas, C. F., Dorava, J. M., Miller, T. P., Neal, C. A., and McGimsey, R. G., 1998, Preliminary volcano-hazard assessment for Redoubt Volcano, Alaska: U.S. Geological Survey Open-File Report 97-857, 40 p., 1 plate.
- Waythomas, C. F., Miller, T. P., McGimsey, R. G., and Neal, C. A., 1997, Preliminary volcano-hazard assessment for Pavlof Volcano, Alaska: U.S. Geological Survey Open-File Report 97-135, 1 plate.
- Waythomas, C. F., and Neal, C. A., 1998, Tsunami generation by pyroclastic flow during the 3500-year B.P. caldera-forming eruption of Aniakchak Volcano, Alaska: *Bulletin of Volcanology*, v. 60, p. 110-124.
- Waythomas, C. F., Power, J. A., Richter, D. H., and McGimsey, R. G., 1998, Preliminary volcano-hazard assessment for Akutan Volcano east-central Aleutian Islands, Alaska: U.S. Geological Survey Open-File Report 98-360, 36 p., 1 plate.

- Waythomas, C. F., and Waitt, R. B., 1998, Preliminary volcano-hazard assessment for Augustine Volcano, Alaska: U.S. Geological Survey Open-File Report 98-106, 39 p., 1 plate.
- Waythomas, C. F., Walder, J. S., McGimsey, R. G., and Neal, C. A., 1996, A catastrophic flood caused by drainage of a caldera lake at Aniakchak Volcano, Alaska, and implications for volcanic hazards assessment: Geological Society of America Bulletin, v. 108, p. 861-871.
- Webb, F. H., Bursik, M., Dixon, T. H., Farina, F., Marshall, G. A., and Stein, R. S., 1995, Inflation of Long Valley Caldera from one year of continuous GPS observations: Geophysical Research Letters, v. 22, p. 195-198.
- Weiland, C. M., Steck, L. K., Dawson, P. B., and Korneev, V. A., 1995, Nonlinear teleseismic tomography at Long Valley caldera, using three-dimensional minimum travel time ray tracing: Journal of Geophysical Research, v. 100, p. 20,379-20,390.
- Wells, R. E., Weaver, C. S., and Blakely, R. J., 1998, Fore-arc migration in Cascadia and its neotectonic significance: Geology, v. 26, p. 759-762.
- Werner, C., Janik, C. J., Goff, F., Counce, D., Johnson, L., Siebe, C., Delgado, H., Williams, S. N., and Fischer, T. P., 1997, Geochemistry of summit fumarole vapors and flanking thermal/mineral waters at Popocatepetl Volcano, Mexico: Los Alamos National Laboratory Report LS-13289-MS, 33 p.
- Wessells, Steve, 1998, At risk: Volcano Hazards from Mount Hood, Oregon: U.S. Geological Survey Open-File Report 98-492, VHS video, 14 min.
- Weston, P. E., Konner, J. A., and Wolpert, P. J., 1994, JOEL 8900 Superprobe user's manual: U.S. Geological Survey Open-File Report 94-404, 104 p.
- White, R. A., 1996, Precursory deep long-period earthquakes at Mount Pinatubo: spatio-temporal link to a basalt trigger, *in* Newhall, C. G., and Punongbayan, R. S., eds., Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 307-327.
- White, R. A., Miller, A. D., Lynch, Lloyd, and Power, John, 1998, Observations of hybrid seismic events at Soufrière Hills Volcano, Montserrat: July 1995 to September 1996: Geophysical Research Letters, v. 25, p. 3657-3660.
- Wicks, Charles, Jr., Thatcher, Wayne, and Dzurisin, Daniel, 1998, Migration of fluids beneath Yellowstone caldera inferred from satellite radar interferometry: Science, v. 282, p. 458-462.
- Wiemer, Stefan, and McNutt, S. R., 1997, Variations in the frequency-magnitude distribution with depth in two volcanic areas: Mount St. Helens, Washington, and Mt. Spurr, Alaska: Geophysical Research Letters, v. 24, p. 189-192.
- Williams, C. F., and Grubb, F. V., 1998, Thermal constraints on the lateral extent of The Geysers vapor-dominated reservoir: Proceedings, Twenty-third Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, p. 83-89.
- Williams, C. F., and Sass, John, 1997, Thermal signature of subsurface fluid flow near the Dixie Valley geothermal reservoir, Nevada: Proceedings, Twenty-second Workshop on Geothermal Reservoir Engineering, Stanford University, Stanford, California, p. 161-168.
- Wilson, C. J. N., and Hildreth, W., 1997, The Bishop Tuff: New insights from eruptive stratigraphy: Journal of Geology, v. 105, p. 407-439.
- Wilson, C. J. N., and Hildreth, Wes, 1998, Hybrid fall deposits in the Bishop Tuff, California: a novel pyroclastic depositional mechanism: Geology, v. 26, p. 7-10.
- Wilson, C. J., Houghton, B. F., McWilliams, M. O., Lanphere, M. A., Weaver, S. D., and Briggs, R. M., 1995, Volcanic and structural evolution of Taupo volcanic zone, New Zealand; a review: Journal of Volcanology and Geothermal Research, v. 68, p. 1-28.
- Wilson, F. H., Weber, F. R., and Dochat, T. M., Quaternary geology, Wilson, F. H., Miller, T. P., and Detterman, R. L., bedrock geology, 1997, Revised geologic map of the Cold Bay and False Pass Quadrangles, Alaska Peninsula: U.S. Geological Survey Open-File Report 97-866, 34 p., 1 plate, scale 1:250,000.

- Wolfe, E. W., 1996, Chemical analyses for the geologic map of Hawaii: U.S. Geological Survey Open-File Report 96-504, one 3 1/2 inch DS/HD IBM compatible computer diskette.
- Wolfe, E. W., 1997, Major-oxide analyses for Mauna Kea Volcano, Hawaii: U.S. Geological Survey Open-File Report 97-84, 1 computer diskette.
- Wolfe, E. W., and Hoblitt, R. P., 1996, Overview of the eruptions, *in* Newhall, C. G., and Punongbayan, R. S., eds., *Fire and Mud: Eruptions and Lahars of Mount Pinatubo, Philippines*: Philippine Institute of Volcanology and Seismology, Quezon City, and University of Washington Press, Seattle, p. 3-20.
- Wolfe, E. W., and Morris, Jean, compilers, 1996. Geologic map of the Island of Hawaii: U.S. Geological Survey Miscellaneous Investigations Map I-2524-A, 18 p., 3 plates, scale 1:100,000.
- Wolfe, E. W., and Morris, Jean, compilers, 1996. Sample data for the geologic map of the Island of Hawaii: U.S. Geological Survey Miscellaneous Investigations Map I-2524-B, 51 p., 3 plates, scale 1:100,000.
- Wolfe, E. W., and Pierson, T. C., 1995, Volcanic-hazard zonation for Mount St. Helens, Washington, 1995: U.S. Geological Survey Open-File Report 95-497, 12 p., 1 plate, scale 1:100,000.
- Wolfe, E. W., Wise, W. S., and Dalrymple, G. B., 1997, The geology and petrology of Mauna Kea Volcano, Hawaii—A study of postshield volcanism: U.S. Geological Survey Professional Paper 1557, 129 p., 2 plates, scale 1:100,000, 2 plates, scale 1:24,000.
- Wolfe, K. J., and Eichelberger, J. C., 1997, Syneruptive mixing, degassing, and crystallization at Redoubt Volcano, eruption of December, 1989 to May 1990: *Journal of Volcanology and Geothermal Research*, v. 75, p. 19-37.
- Woods, A. W., and Kienle, J., 1994, The dynamics and thermodynamics of volcanic clouds: Theory and observations from the April 15 and April 21, 1990 eruptions of Redoubt Volcano, Alaska, *in* Miller, T. P., and Chouet, B. A., eds., *The 1989-1990 eruptions of Redoubt Volcano, Alaska*: *Journal of Volcanology and Geothermal Research*, v. 62, p. 273-299.
- Wright, T. L., and Helz, R. T., 1996, Differentiation and magma mixing on Kilauea's east rift zone: a further look at the eruptions of 1955 and 1960. Part II. The 1960 lavas: *Bulletin of Volcanology*, v. 57, p. 602-630.
- Wright, T. L., and Takahashi, T. J., 1998, Hawaii bibliographic database: *Bulletin of Volcanology*, v. 59, p. 276-280.
- Yamaguchi, D. K., and Hoblitt, R. P., 1995, Tree-ring dating of pre-1980 volcanic flowage deposits at Mount St. Helens, Washington: *Geological Society of America Bulletin*, v. 107, p. 1077-1093.
- Yamashita, K. M., Endo, Elliott, Sako, Maurice, and Wieprecht, David, 1997, Descriptions and elevations for First-Order, Class II leveling bench marks, and Global Positioning System (GPS) coordinates and elevations between West Yellowstone, Montana, and Old Faithful, Yellowstone National Park, Wyoming: U.S. Geological Survey Open-File Report 97-57, 29 p.
- Yamashita, K. M., Iwatsubo, E. Y. and Dvorak, J. J., 1996, Descriptions, photographs, and coordinates for Global Positioning System stations at Aniakchak Crater, Alaska: U.S. Geological Survey Open-File Report 96-46, 20 p.
- Yamashita, K. M., Iwatsubo, E. Y., and Endo, E. T., 1995, Descriptions, photographs and positions for Global Positioning System (GPS) bench marks in the vicinity of Lassen Peak, California: U.S. Geological Survey Open-File Report 95-237, 36 p.
- Yamashita, K. M., and Wieprecht, D. E., 1995, Bench mark descriptions and photographs for Global Positioning System (GPS) stations in the vicinity of Mt. Shasta and Medicine Lake, California: U.S. Geological Survey Open-File Report 95-811, 27 p.
- Yamashita, K. M., Wieprecht, D. E., and Sako, M. K., 1995, Elevations and descriptions for leveling bench marks at Newberry Crater, Oregon: U.S. Geological Survey Open-File Report 95-99, 18 p.

- Yang, Huai-Jen, Frey, F. A., Garcia, M. O., and Clague, D. A., 1994, Submarine lavas from Mauna Kea Volcano, Hawaii; implications for Hawaiian shield stage processes: *Journal of Geophysical Research*, v. 99, p. 15,577-15,594.
- Young, S. R., Francis, P. W., Barclay, J., Casadevall, T. J., Gardner, C. A., Darroux, B., Davies, M. A., Delmelle, P., Norton, G. E., Maciejewski, A. J. H., Oppenheimer, C. M. M., Stix, J., and Watson, I. M., 1998, Monitoring SO<sub>2</sub> emission at the Soufrière Hills volcano: Implications for changes in eruptive conditions: *Geophysical Research Letters*, v. 25, p. 3681-3684.
- Zoback, M. L., McKee, E. H., Blakely, R. J., and Thompson, G. A., 1994, The northern Nevada rift: regional tectono-magmatic relations and middle Miocene stress direction: *Geological Society of America Bulletin*, v. 105, p. 371-382.