

Curriculum Vitae

I. Personal Data

Name: James Edward Gardner
Present Address University of Texas at Austin
Jackson School of Geosciences
Austin, TX 78712
+1 512-471-0963
gardner@jsg.utexas.edu

Date of Birth: 29 March 1963
Marital Status: Married
Present Position: Professor

II. Academic Degrees

Doctor of Philosophy (Ph.D.), 1993

University of Rhode Island, Graduate School of Oceanography
Narragansett, Rhode Island, U.S.A.
Major Subject: Volcanology and Geological Oceanography

Masters of Art (M.A.) in Geology, 1987

Washington University, Earth and Planetary Science Department
St. Louis, Missouri, U.S.A.
Major Subject: Geology and Geochemistry

Bachelor of Science (B.S.), 1985

Southern Methodist University, Dallas, Texas, U.S.A.
Major Subject: Geology

III. Honors and Awards

2019 Fellow of the Mineralogical Society of America

2017 Carolyn G. & G. Moses Knebel Undergraduate Course Teaching Award
for outstanding teaching in an undergraduate course

2015 Fellow of the Institute for Advanced Studies, Durham University, UK

2002 Wager Medal from IAVCEI, Co-recipient

1995 Alexander von Humboldt Fellowship

IV. Professional Background

Professor, from September 2011, to present

Department of Geological Sciences, Jackson School of Geosciences
University of Texas at Austin, Austin, TX, USA

Associate Professor, from September 2003, to August 2011

Department of Geological Sciences, Jackson School of Geosciences
University of Texas at Austin, Austin, TX, USA

Assistant Professor, from October 1998, to July 2003

Geophysical Institute and Department of Geology and Geophysics
University of Alaska Fairbanks, Fairbanks, AK, USA

Post-Doctoral Research Associate, from August 1996, to September 1998

Department of Geological Sciences
Brown University, Providence, RI, USA

Alexander von Humboldt Fellow, from June 1995, to July 1996.

GEOMAR, Abteilung Vulkanologie und Petrologie
Christian-Albrechts-Universität zu Kiel, Kiel, Germany

Post-Doctoral Research Assistant, from May 1993, to May 1995.

Laboratoire de Dynamique des Systèmes Géologiques,
Institut de Physique du Globe de Paris, Paris, France

Graduate Research Assistant, from September 1987, to May 1993.

University of Rhode Island, Graduate School of Oceanography
Narragansett, Rhode Island, U.S.A.

Graduate Research Assistant, from September 1985, to August 1987.

Washington University, Earth and Planetary Science Department
St. Louis, Missouri, U.S.A.

V. Grant Support:

Total Research Grant Support: \$2,323,136; Instrumentation Support: \$274,218

Principal Investigator:

NSF grant EAR-1852449, “Collaborative Research: Experimental and Numerical Constraints on Density Evolution, Buoyancy Reversal, and Runout Distance in Pyroclastic Density Currents” \$366,022, 3 years. [Active]

NSF grant EAR-1725186, “Collaborative Research: What do obsidian pyroclasts tell us: Constraints from textures, volatiles, and experiments”, \$282,058, 3 years. [Active]

- NSF grant EAR-1049829, “Collaborative Research: The Dynamics of Rhyolite Lava Eruption and Emplacement Inferred from Micro-Textures, Decompression Experiments, and Numerical Modeling”, \$387,869, 3 years.
- NSF grant EAR-1053889, “Acquisition of a Piston Cylinder Apparatus for Research in Experimental Petrology and Mineral Physics”, \$40,355, 1 year.
- NSF grant EAR-0738664, “Bubble nucleation in magmas: Experimental constraints on the influence of gas and melt composition”, \$195,665, 3 years.
- NSF grant EAR-0711043, “The record of recharge, assimilation, and storage in the Popocatepetl magma system from Sr isotopes and glass inclusions in phenocrysts and experimental petrology”, \$254,388, 3 years
- NSF grant EAR-0447126, “Acquisition of a Fourier Transform Infrared (FTIR) Spectroscopy System: Measuring Volatiles in Magmatic and Ore-forming Systems”, \$107,400, 1 year.
- NSF grant EAR-0401784, “Sedimentary processes in pyroclastic density currents: insights from the deposits of Nevado de Toluca, Mexico”, \$96,604.00, 2 years.
- NSF grant EAR-0229290, “Experimental and textural constraints on the eruptive behavior of basic magmas in subduction zones”, \$181,863.00, 2 years.
- NSF grant EAR-0087853, “Magmatic Degassing: Experimental and Textural Constraints”, \$52,981.00, 1 year.
- NSF grant EAR-9804860, “Magmatic degassing: Experimental constraints on bubble nucleation, growth, and coalescence”, \$109,299.00, 2 years.
- NSF grant EAR-9910539, “Acquisition of externally heated TZM pressure vessel systems”, \$18,963.00, 2 years.

Co-Investigator:

- NSF grant EAR-1348050, " *Collaborative Research: A self-consistent model for bubble nucleation during Plinian volcanic eruptions*", \$223,981, 3 years.
- NSF grant OCE-1333882, “*Collaborative Research: Degassing-based constraints on the dynamics of submarine eruptions*”, \$90,187, 2 years.
- NSF grant EAR-0946686, “Chlorine isotope geochemistry of altered oceanic crust: Empirical and experimental observations”, \$248,857, 3 years.
- NSF grant EAR- 0732500, “Acquisition of a Solid-State 193-nm Laser-Ablation System”, \$97,500, 1 year.
- NSF grant EAR-0537168, “*Collaborative Research: Violent basaltic explosive volcanism II: conditions of basaltic Plinian eruptions*”, \$105,000, 2 years.
- NSF grant EAR-0408896, “*Collaborative Research: The record of recharge and storage in the El Chichon magma system through Ar isotopic and experimental petrologic constraints*”, \$91,923, 2 years.
- NSF grant EAR-0207316, “*Collaborative Research: Investigating the processes and timescales of andesite differentiation: A comprehensive petrological and geochemical study of Arenal volcano, Costa Rica*”, \$94,089, 2 years.
- NSF grant EAR-0106658, “Experimental Study of Plagioclase textures and Amphibole reaction rims: Implications for rates of magmatic processes”, \$172,040, 2 years.

VI. Supervision:

Post-Doctoral Researchers:

Dr. Célia Dalou (University of Texas at Austin, co-supervised with Jung-Fu Lin)

Research Assistant, University of Minnesota

Dr. Michael Rowe, (University of Texas at Austin, co-supervised with John Lassiter)

Professor, University of Tasmania

Dr. Alan Burgisser (University of Alaska Fairbanks); CNRS, University of Savoie

Dr. Yuki Suzuki (University of Alaska Fairbanks); Faculty, Waseda University

Graduate Students:

Wade Aubin (Ph.D. candidate, University of Texas at Austin, in progress)

Nicolas Meszaros (Ph.D. candidate, University of Texas at Austin, in progress)

Sean O'Donnell (Ph.D. candidate, University of Texas at Austin, in progress)

Nicole Guinn (M.S. candidate, University of Texas at Austin, in progress)

Yining Wang (M.S., University of Texas at Austin, graduated Spring, 2018)

Kenneth Befus (Ph.D., University of Texas at Austin, graduated Spring, 2014)

Assistant Professor, Baylor University

Giovanni Sosa (Ph.D., University of Texas at Austin, graduated Summer, 2011)

Associate Professor, UNAM, Morelia, Mexico

Lindsay Szramek (Ph.D., University of Texas at Austin, graduated Summer, 2010)

Associate Professor, Austin Peay State University.

Benjamin Andrews (Ph.D., University of Texas at Austin, graduated Spring, 2009)

Staff Scientist, Smithsonian Institution.

Katherine Goepfert (M.S., University of Texas at Austin, graduated Spring, 2008)

Nicole Myers (M.S., University of Texas at Austin, graduated Fall, 2006)

Robert Nicolson (M.S., University of Alaska Fairbanks, graduated Fall, 2003)

Brandon Browne (M.S., University of Alaska Fairbanks, graduated Summer, 2001)

Associate Professor, Humboldt State University.

Undergraduate Honors Thesis Students (Supervised):

Matthew Wade (University of Texas at Austin, graduated Spring 2020)

Elizabeth Davis (University of Texas at Austin, graduated Spring 2018)

Samantha Abbott (University of Texas at Austin, graduated Spring 2010)

Casey Huff (University of Texas at Austin, graduated Fall, 2008)

Patrick Shamberger (NSF REU student, University of Alaska Fairbanks)

VII. Teaching

Courses Taught (University of Texas at Austin):

Undergraduate Courses:

- GEO 302J Crises of a Planet (lower division, for non-science undergraduates)
- GEO 416K Earth Materials (lower division undergraduate)
- GEO 426P Igneous and Metamorphic Petrology (lower division undergraduate)
- GEO 338J Marine Geology (upper division undergraduate)
- GEO 358K Volcanology (upper division undergraduate)
- GEO 660 Field Methods (upper division undergraduate)
- GEO 171C Conference Course (upper division undergraduate)

Graduate Course:

- GEO 386K Graduate Igneous Petrology
- GEO 381C Marine Geology
- GEO 391 Seminar in Volcanology
- GEO 391 Thermodynamics of Petrological Systems

Courses Taught (University of Alaska Fairbanks):

Undergraduate Courses:

- GEOS 120 Glaciers, Earthquakes, Volcanoes (team taught, lower division undergraduate)
- GEOS 475 Presentation Techniques in the Geosciences (co-taught)

Graduate Course:

- GEOS 606 Volcanology
- GEOS 621 Advanced Petrology (co-taught)
- GEOS 672 Integrated Case Studies of Volcanic Eruptions (co-taught)
- GEOS 675 Presentation Techniques in the Geosciences (co-taught)

VIII. Bibliography (Google Scholar h-index: 37; i10-index: 86)

Ph.D. Thesis: Compositional Diversity in Volcanic Deposits: Implications for Processes Operating Within Magma Chambers and the Withdrawal of Magma During Explosive Plinian Eruptions.

M.A. Thesis: Trace-Element and Nd-Isotope Evidence for the Origin of the Stratifications of the Endion Sill, Duluth, Minnesota.

Books and Book Chapters

Berlo, K., Gardner, J.E., and Blundy, J.D., Timescales of Magma Degassing, in, Dosseto, A., Turner, S.P., and Orman, J.A. (eds.), *Timescales for Magmatic Processes*, Wiley-Blackwell, 231-256, 2010.

Volcano Hazards Report:

* Stelling, P., Beget, J.E., Gardner, J.E., and Schaefer, J.R., Preliminary volcano-hazard assessment for Fisher volcano, Unimak Island, Alaska. Alaska Division of Geological and Geophysical Surveys, Report 2014-5, 39 p., 2014.

Refereed Journal Articles (= papers authored or co-authored by graduate or undergraduate students)*

Submitted and In Press:

Coumans, J., Llewellyn, E., Wadsworth, F., Humphreys, M., Mathias, S.A., Yelverton, B., and Gardner, J., An experimentally validated numerical model for bubble growth in magma. *J. Volcanol. Geotherm. Res.*, *in press*.

Wadsworth, F.B., Llewellyn, E.W., Vasseur, J., Gardner, J.E., and Tuffen, H., Explosive-effusive volcanic eruption transitions caused by sintering. *Science Advances*, *in press*.

* Gu, J., Fu, S., Gardner, J.E., Yamashira, S., Okuchi, T., and Lin, J.F., Non-linear Effects of Hydration on Sound Velocities of Rhyolitic Glasses up to 3 GPa. *Am. Mineral.*, *in revision*.

Wadsworth, F.B., Vasseur, J., Llewellyn, E.W., Brown, R., Tuffen, H., Gardner, J.E., Kendrick, J., Lavalley, Y., Dobson, K., Heap, M., Dingwell, D., Hess, K.-U., Schaubroth, J., von Aulock, F., Kushnir, A., and Marone, F., A model for permeability evolution during volcanic welding. *J. Volcanol. Geotherm. Res.*, *submitted*.

* Wang, Y., Gardner, J.E., and Hoblitt, R.P., Formation of dense pyroclasts by sintering of ash particles during the preclimactic eruptions of Mt. Pinatubo in 1991. *Bull. Volcanol.*, *submitted*.

* O'Donnell, S., Mohrig, D., Gardner, J.E., Andrews, B., and Buttles, J., The interaction of a leading and a trailing pyroclastic density current: Insights from experiments. *J. Volcanol. Geotherm. Res.*, *submitted*.

Macias, J.L., Arce, J.L., Garcia, F, Sosa-Ceballos, G., and Gardner, J.E., Origins and behavior of the January 22nd 2001 pyroclastic density currents of Popocatepetl volcano derived from Vulcanian-type explosions. *J. Volcanol. Geotherm. Res.*, *submitted*.

Published:

97. Wadsworth, F., Vasseur, J., Schaubroth, J., Llewellyn, E.W., Dobson, K.J., Havard, T., Scheu, B., von Aulock, F.W., Gardner, J.E., Dingwell, D.B., Hess, K.U., Colombier, M., Marone, F., Tuffen, H., and Heap, M.J., A general model for welding of ash particles in volcanic systems validated using in situ X-ray tomography. *Earth Planet. Sci. Lett.*, 525, 115726, 2019.
96. Gardner, J.E., Wadsworth, F.B., Llewellyn, E.W., Watkins, J.M., and Coumans, J.P., Experimental constraints on the textures and origin of obsidian pyroclasts. *Bull. Volcanol.*, 81, 22, 2019.
- 95 * Giachetti, T., Gonnermann, H.M., Gardner, J.E., Burgisser, A., Hajimirza, S., Earley, T.C., Truong, N., and Toledo, P., Bubble coalescence and percolation threshold in expanding rhyolite magma. *Geochem. Geophys., Geosys.*, 20 (2), 1054-1074, 2019.
94. * Hajimirza, S., Gonnermann, H.M., Gardner, J.E., and Giachetti, T., Predicting homogeneous bubble nucleation in rhyolite. *J. Geophys. Res.*, 124 (3), 2395-2416, 2019.
93. Gardner, J.E., Nazworth, C., Helper, M.A., and Andrews, B.J., Inferring the nature of pyroclastic density currents from tree damage: The 18 May 1980 Blast Surge of Mount St. Helens. *Geology*, 46 (9), 795–798, 2018.
92. Gardner, J.E., Hajimirza, S., Webster, J.D., and Gonnermann, H.M., The impact of dissolved fluorine on bubble nucleation in hydrous rhyolite melts. *Geochim. Cosmochim. Acta*, 226, 174–181, 2018.
91. Gardner, J.E., Wadsworth, F.B., Llewellyn, E.W., Watkins, J.M., and Coumans, J.P., Experimental sintering of ash at conduit conditions and implications for the longevity of tuffisites. *Bull. Volcanol.*, 80, 23, 2018.
- * 90. Dygert, N., Lin, J.–F, Marshall, E.W., Kono, Y., and Gardner, J.E., A low viscosity lunar magma ocean forms a stratified anorthitic flotation crust with mafic poor and rich units. *Geophys. Res. Lett.*, 44, 11282–11291, 2017.
- * 89. Macias, J.L., Sosa-Ceballos, G., Arce, J.L., Gardner, J.E., Saucedo, R., and Valdez-Moreno, G., Storage conditions and magma processes triggering the 1818 A.D. Plinian eruption of Volcán de Colima. *J. Volcanol. Geotherm. Res.*, 340, 117–129, 2017.
88. Siebe, C., Arana-Salinas, L., Salinas, S., Macias, J.L., Gardner, J., and Bonasia, R., The ~23,500 y 14C BP White Pumice plinian eruption and associated debris avalanche and Tochimilco lava flow of Popocatepetl volcano, Mexico. *J. Volcanol. Geotherm. Res.*, 333–334, 66–95, 2017.
87. Burgisser, A., Chevalier, L., Gardner, J.E., and Castro, J.M., The percolation threshold and permeability evolution of ascending magmas. *Earth Planet. Sci. Lett.*, 470, 37–47, 2017.
- * 86. Watkins, J.M., Gardner, J.E., and Befus, K.S., Non-equilibrium degassing, regassing, and vapor fluxing in magmatic feeder systems. *Geology*, 45, 183-186, 2017.
- * 85. Gardner, J.E., Andrews, B.J., and Dennen, R., Ltoff of the 18 May 1980 surge of Mount St. Helens (USA) and the deposits left behind. *Bull. Volcanol.*, 79(1), 1-12, 2017.
- * 84. Gardner, J.E., Llewellyn, E.W., Watkins, J.M., and Befus, K.S., Formation of obsidian pyroclasts by sintering of ash particles in the volcanic conduit. *Earth Planet. Sci. Lett.*, 459,

- 252-263, 2017.
83. Gardner, J.E., Can we gain evidence about volcanic pyroclastic flows from those who survive them? *Insights*, 9(2), Article 2, 2016.
- * 82. Gardner, J.E., Befus, K., Watkins, J., and Clow, T., Nucleation rates of spherulites in natural rhyolitic lava. *Am. Mineral.*, 101, 2367-2376, 2016.
- * 81. Gardner, J.E., Jackson, B., Gonnermann, H., and Soule, S.A., Rapid Ascent and Emplacement of Basaltic Lava During the 2005-06 Eruption of the Mid-Ocean Ridge Inferred from CO₂ Contents. *Earth Planet. Sci. Lett.*, 453, 152–160, 2016.
- * 80. Befus, K., Gardner, J.E., Magma storage and evolution of the most recent eruptions from Yellowstone Caldera. *Contrib. Mineral. Petrol.*, 171:30; doi 10.1007/s00410-016-1244-x, 2016.
79. Gardner, J.E., and Webster, J.D., The impact of dissolved CO₂ on bubble nucleation in water-poor rhyolite melts. *Chem. Geol.*, 420, 180–185, 2016.
78. Mackay, H., Hughes, P.D., Jensen, B.J., Langdon, P.G., Pyne-O'Donnell, S.D., Plunkett, G., Froese, D.G., Coulter S., and Gardner, J.E., A mid to late Holocene cryptotephra framework from eastern North America. *Quat. Sci. Rev.*, 132, 101–113, 2016.
77. Colleary, C., Dolocan, A., Gardner, J., Singh, S., Wuttke, M., Rabenstein, R., Habersetzer, J., Schaal, S., Feseha, M., Clements, M., Jacobs, B., Currano, E., Jacobs, L., Sylvestersen, R., Gabbott, S., and Vinther, J., Chemical, experimental, and morphological evidence for diagenetically altered melanin in exceptionally preserved fossils. *Proceedings of the National Academy of Sciences*, 112, 12592–12597, 2015.
- * 76. Ghanbarzadeh, S., Hesse, M.A., Prodanovic, and Gardner, J.E., Field evidence for deformation-assisted fluid flow below the equilibrium percolation threshold. *Science*, 350, 1069–1072, 2015.
- * 75. Befus, K., Manga, M., Gardner, J.E., and Williams, M., Ascent and emplacement dynamics of obsidian lavas inferred from microlite textures. *Bull. Volcanol.*, 77:88, 2015.
74. Giachetti, T., Gonnermann, H.M., Gardner, J.E., Shea, T., and Gouldstone, A., Discriminating secondary from primary water in rhyolitic matrix-glass of volcanic pyroclasts using thermogravimetric analysis, *Geochim. Cosmochim. Acta*, 148, 457-476, 2015.
- * 73. Befus, K., Watkins, J., Gardner, J.E., Richard, D., Befus, K.M., Miller, N.R., and Dingwell, D.B., Spherulites as in-situ recorders of thermal history in lava flows. *Geology*, 43, 647-650, 2015.
- * 72. Gardner, J.E., Befus, K.S., Gualda, G.A.R., and Ghiorso, M.S., Experimental constraints on Rhyolite-MELTS and the Bishop Tuff magma body, *Contrib. Mineral. Petrol.*, 168, DOI: 10.1007/s00410-014-1051-1, 2014.
- * 71. Sosa-Ceballos, G., Gardner, J.E., and Lassiter, J.C., Intermittent mixing processes occurring at Popocatepetl volcano, Mexico: Insights from textural-compositional variations in plagioclase and Sr-Nd-Pb isotopes. *Contrib. Mineral. Petrol.*, 167, 966-985, 2014.
- * 70. Gardner, J.E., Befus, K.S., Miller, N.R., and Monecke, T., Cooling rates of mid-ocean ridge lava deduced from clinopyroxene spherulites, *J. Volcanol. Geotherm. Res.*, 282, 1-8, 2014.
- * 69. Befus, K.S., Zincke, R.W., Jordan, J.S., Manga, M., and Gardner, J.E., Pre-eruptive storage conditions and eruption dynamics of a small rhyolite dome: Douglas Knob, Yellowstone volcanic field, USA., *Bull. Volcanol.*, 76, 1-12, 2014.
68. Mora, J.C., Gardner, J.E., Macias, J.L., and Meriggi, L., Magmatic controls on eruption dynamics of the 1,950 yr B.P. eruption of San Antonio volcano, Tacaná Volcanic Complex, Mexico-Guatemala, *J. Volcanol Geotherm. Res.*, 262, 134-152, 2013.

67. Gonnermann, H.M., and Gardner, J.E., Homogeneous bubble nucleation in rhyolitic melt: Experiments and non-classical theory. *Geochemistry, Geophysics, Geosystems*, 14, doi: 10.1002/ggge.20281, 2013.
66. Arce, J.L., Gardner, J.E., and Macías, J.L., Pre-eruptive conditions of the 21.7 ka Plinian event at Nevado de Toluca volcano, Central Mexico, *Bull. Volcanol.*, 249, 49-65, 2013.
65. Gardner, J.E., Ketcham, R.A., and Moore, G., The dynamics of bubble nucleation in hydrous mafic magmas. *J. Volcanol. Geotherm. Res.*, 267, 68-74, 2013.
- * 64. Befus, K.S., Gardner, J.E., and Zincke, R.W., Analyzing water contents in unexposed glass inclusions in quartz crystals, *Am. Mineral.*, 97, 1898-1904, 2013.
63. Rueda, H., Macias, J.L., Arce, J.L., Gardner, J.E., and Layer, P.W., The ~31 ka rhyolitic Plinian to sub-Plinian eruption of Tlaloc Volcano, Sierra Nevada, central Mexico, *J. Volcanol. Geotherm. Res.*, 252, 73-91, 2013.
62. Carazzo, G., Tait, S., Kaminski, E., and Gardner, J.E., The recent Plinian explosive activity of Mt. Pelée volcano (Lesser Antilles): The P1 AD 1300 eruption, *Bull. Volcanol.*, 74, 2187-2203, 2012.
- * 61. Gardner, J.E., K.S. Befus, J. Watkins, M. Hesse, and N. Miller, Compositional gradients surrounding spherulites in obsidian and their relationship to cooling and spherulite growth, *Bull. Volcanol.*, 74, 1865-1879, 2012.
- * 60. Sosa-Ceballos, G., Gardner, J.E., Siebe, C., and Macias, J.-L., A caldera forming eruption ~14100 14C yr BP at Popocatepetl volcano, Mexico: Insights from eruption dynamics and magma mixing, *J. Volcanol. Geotherm. Res.*, 213, 27-40, 2012.
59. Arce, J.L., Macias, J.L., Gardner, J.E., and Rangel, E., Reconstruction of the Sibinal Pumice, an andesitic subplinian-Plinian eruption at Tacaná Volcanic Complex, Mexico-Guatemala, *J. Volcanol. Geotherm. Res.*, 217-218, 39-55, 2012.
58. Gardner, J.E., Surface tension and bubble nucleation in phonolite magmas, *Geochim. Cosmochim. Acta*, 76, 93-102, 2012.
57. Gardner, J.E., and R.A. Ketcham, Bubble nucleation in rhyolite and dacite melts: Temperature dependence of surface tension, *Contrib. Mineral. Petrol.*, 162, 929-943, doi: 10.1007/s00410-011-0632-5, 2011.
- * 56. Nicholson, R.S., Gardner, J.E., and Neal, C.A., Variations in eruption style during the 1931 A.D. eruption of Aniakchak volcano, Alaska, *J. Volcanol. Geotherm. Res.*, doi:10.1016/j.jvolgeores.2011.08.002, 2011.
- * 55. Andrews, B.J., and Gardner, J.E., Effects of caldera collapse on magma decompression rate: An example from the 1800 ¹⁴C yr BP eruption of Ksudach Volcano, Kamchatka, Russia, *J. Volcanol. Geotherm. Res.*, 198, 205-216, 2010.
54. Saucedo, R., Macias, J.L., Gavilanes, J.C., Arce, J.L., Komorowski, J.C., Gardner, J., and Valdez-Moreno, G., Eyewitness, stratigraphy, chemistry, and eruptive dynamics of the 1913 Plinian eruption of Volcán de Colima, Mexico. *J. Volcanol. Geotherm. Res.*, 191, 149-166, 2010.
- * 53. Szramek, L., J.E. Gardner, and M. Hort, Cooling-induced crystallization of microlite crystals in two basaltic pumice clasts. *Am. Mineral.*, 95, 503-509, 2010.
- * 52. Goepfert, K., and Gardner, J.E., Influence of pre-eruptive storage conditions and volatile contents on explosive Plinian style eruptions of basic magma, *Bull. Volcanol.*, DOI 10.1007/s00445-010-0343-1, 2010.
- * 51. Andrews, B.J., and Gardner, J.E., Turbulent dynamics of partially collapsing volcanic eruption columns, *Geology*, 37, 895-898, 2009.

50. Gardner, J.E., The impact of pre-existing gas on the ascent of explosively erupted magma, *Bull. Volcanol.*, *71*, 835-844, 2009.
- * 49. Andrews, B.J., Gardner, J.E., and Housh, T.B., Repeated recharge, assimilation, and hybridization in magmas erupted from El Chichon as recorded by plagioclase and amphibole phenocrysts, *J. Volcanol. Geotherm. Res.*, *175*, 415-426, 2008.
48. Castro, J.M., and Gardner, J.E., Did ascent rate control the explosive-effusive transition at the Inyo volcanic chain, California?, *Geology*, *36*, 279-282, 2008.
- * 47. Andrews, B., Gardner, J.E., Tait, S., Ponomareva, V.V., and Melekestsev, I.V., Dynamics of the 1800 14C yr. B.P. caldera-forming eruption of Ksudach volcano, Kamchatka, Russia, *AGU Monograph Series*, *172*, 325-342, 2007.
46. Gardner, J.E., Bubble coalescence in rhyolitic melts during decompression from high pressure, *J. Volcanol. Geotherm. Res.*, *166*, 161-176, 2007.
- * 45. Gardner, J.E., A. Burgisser, and P. Stelling, Eruption and Deposition of the Fisher Tuff: evidence for the evolution of pyroclastic density currents, *J. Geol.*, *115*, 417-435, 2007.
44. Gardner, J.E., Heterogeneous Bubble Nucleation in Highly Viscous Silicate Melts During Instantaneous Decompression from High Pressure, *Chem. Geol.*, *236*, 1-12, 2007.
43. Suzuki, Y., J.E. Gardner, and J.F. Larsen, Experimental constraints on syneruptive magma ascent related to the phreatomagmatic phase of the 2000 A.D. eruption of Usu volcano, Japan, *Bull. Volcanol.*, *Bull. Volcanol.*, *69*, 4232-4244, 2007.
- * 42. Arce, J.L., J.L. Macias, J.E. Gardner, and P.W. Layer, A 2.5 ka history of dacitic magmatism at Nevado de Toluca, Mexico: Petrological, $^{40}\text{Ar}/^{39}\text{Ar}$ dating, and experimental constraints on petrogenesis, *J. Petrol.*, *47*, 457-479, 2006.
- * 41. Szramek, L., J.E. Gardner, and J. Larsen, Degassing and microlite crystallization of basaltic andesite magma erupting at Arenal volcano, Costa Rica, *J. Volcanol. Geotherm. Res.*, *157*, 182-201, 2006.
- * 40. Browne, B., and J.E. Gardner, The influence of magma ascent path on the texture, mineralogy, and formation of hornblende reaction rims, *Earth Planet. Sci. Lett.*, *246*, 161-176, 2006.
39. Gardner, J.E., A. Burgisser, M. Hort, and M. Rutherford, Experimental and model constraints on degassing of magma during ascent and eruption, in Siebe, C., Macias, J.L., and Aquirre-Diaz, G.J., Neogene-Quaternary continental margin volcanism: A perspective from Mexico. *Geol. Soc. Am. Bull. Spec. Pap. 402*, 99-114, 2006.
- * 38. Burgisser, A., and J.E. Gardner, Using hydraulic equivalences to discriminate transport processes of volcanic flows, *Geology*, *34*, 157-160, 2006.
37. Castro, J.M., D.B. Dingwell, A. Nichols, and J.E. Gardner, New insights on the origin of flow bands in obsidian, in Manga, M. and Ventura, G., Kinematics and dynamics of lava flows, *Geol. Soc. Am. Spec. Pap. 396*, 55-66, 2005.
- * 36. Browne, B.L., and J.E. Gardner, Transport and deposition of pyroclastic material from the ~1000 A.D. caldera-forming eruption of Volcán Ceboruco, Nayarit, Mexico, *Bull. Volcanol.*, *67*, 469-489, DOI: 10.1007/s00445-004-0390-6, 2005.
- * 35. Burgisser, A., and J.E. Gardner, Experimental constraints on degassing and permeability in volcanic conduit flow, *Bull. Volcanol.*, *67*, 42-56, DOI: 10.1007/s00445-004-0356-8, 2005.
- * 34. Stelling, P., J.E. Gardner, and J. Beget, Eruptive history of Fisher Caldera, Alaska, USA, *J. Volcanol. Geotherm. Res.*, *139*, 163-183, 2004.
33. Larsen, J.F., and J.E. Gardner, Experimental study of water degassing from phonolite melts: Implications for volatile oversaturation during magmatic ascent, *J. Volcanol. Geotherm. Res.*, *134*, 109-124, 2004.

- * 32. Larsen, J.F., M.-H. Denis, and J.E. Gardner, Experimental study of bubble coalescence in rhyolitic and phonolitic melts, *Geochim. Cosmochim. Acta*, 68, 333-344, 2004.
- * 31. Coombs, M., and J.E. Gardner, Reaction rim growth on olivines in silicic melts: Implications for magma mixing, *Am. Mineral.*, 89, 748-758, 2004.
- * 30. Browne, B.L., and J.E. Gardner, The nature and timing of caldera collapse as indicated by accidental lithic fragments from the ~1000 A.D. eruption of Volcan Ceboruco, Mexico. *J. Volcanol. Geotherm. Res.*, 130, 93-105, 2004.
- * 29. Harms, E., J.E. Gardner, and H.-U. Schminke, Phase equilibria in the Laacher See Tephra (East Eifel, Germany): Constraints on pre-eruptive storage conditions of a phonolitic magma reservoir. *J. Volcanol. Geotherm. Res.*, 134, 125-138, 2004.
- * 28. Gardner, J.E., and M.H. Denis, Rates of Heterogeneous Bubble Nucleation in Silicate Melts, *Geochim. Cosmochim. Acta*, 68, 3587-3597, 2004.
- * 27. Izbekov, P., J.E. Gardner, and J.E. Eichelberger, Comagmatic granophyre and dacite from Karymsky volcanic centre, Kamchatka: experimental constraints for magma storage conditions, *J. Volcanol. Geotherm. Res.*, 131, 1-18, 2004.
- * 26. Chertkoff, D.G., and J.E. Gardner, Nature and timing of magma interactions before, during, and after the caldera-forming eruption of Volcán Ceboruco, Mexico, *Contribs. Mineral. Petrol.*, 146, 715-735, 2004.
- * 25. Stelling, P., J. Begét, C. Nye, J. Gardner, J.D. Devine, and R. George, Geology and petrology of ejecta from the 1999 eruptions of Shishaldin Volcano, Alaska, *Bull. Volcanol.*, 64: 548-561, 2002.
- 24. Gardner, J.E., P.W. Layer, and M.J. Rutherford, Phenocrysts versus xenocrysts in the Toba Tuff: Implications for the petrogenesis of 2800 km³ of magma, *Geology*, 30, 347-350, 2002.
- 23. Layer, P.W., and J.E. Gardner, Excess argon in Mount St. Helens plagioclase as a recorder of magmatic processes, *Geophys. Res. Lett.*, 28, 4279-4281, 2001.
- * 22. Coombs, M.L., and J.E. Gardner, Shallow storage conditions for the rhyolite of the 1912 eruption at Novarupta, Alaska, *Geology*, 29, 775-778, 2001.
- 21. Larsen, J.F., and J.E. Gardner, Experimental constraints on bubble interactions in rhyolitic melts: Implications for vesicle size distributions, *Earth Planet. Sci. Lett.*, 180, 201-214, 2000.
- 20. Gardner, J.E., and S. Tait, The caldera forming eruption of Volcán Ceboruco, Mexico, *Bull. Volcanol.*, 62, 20-33, 2000.
- 19. Gardner, J.E., M. Hilton, and M.R. Carroll, Bubble growth in highly viscous silicate melts during continuous decompression from high pressure, *Geochim. Cosmochim. Acta*, 64, 1473-1483, 2000.
- 18. Hort, M., and J.E. Gardner, Constraints on degassing of pumice clasts during Plinian volcanic eruptions based on model calculations, *J. Geophys. Res.*, 105, 25981-26001, 2000.
- 17. Rutherford, M.J., and J.E. Gardner, Rates of Magma Ascent, In Sigurdsson, H., ed., *Encyclopedia of Volcanoes*, Academic Press, pp. 207-218, 2000.
- 16. Gardner, J.E., M. Hilton, and M.R. Carroll, Experimental Constraints on Degassing of Magma: Isothermal Bubble Growth During Continuous Decompression from High Pressure, *Earth Planet. Sci. Lett.*, 168, 201-218, 1999.
- * 15. Cottrell, E., J.E. Gardner, and M.J. Rutherford, Dynamic movement and changing storage conditions of large silicic magma bodies: Evidence from the Minoan rhyodacite, Santorini, Greece. *Contrib. Mineral. Petrol.*, 135, 315-331, 1999.
- 14. Gardner, J.E., S. Carey, and H. Sigurdsson, Plinian eruptions at Glacier Peak and Newberry volcanoes, USA: Implications for volcanic hazards in the Cascades Volcano Range, *Geol.*

- Soc. Am. Bull.*, 110, 173-187, 1998.
13. Devine, J.D., M.J. Rutherford, and J.E. Gardner, Petrologic determination of magma ascent rates for the 1995-97 Soufriere Hills Volcano andesitic magma. *Geophys. Res. Lett.*, 25, 3673-3676, 1998.
 12. Devine, J.D., M.D. Murphy, M.J. Rutherford, J. Barclay, R.S.J. Sparks, M.R. Carroll, S.R. Young, and J.E. Gardner, Petrologic evidence for pressure-temperature conditions and magma mixing in the new dome at Soufriere Hills Volcano, Montserrat. *Geophys. Res. Lett.*, 25, 3673-3676, 1998.
 11. Barclay, J., M.R. Carroll, M.J. Rutherford, M.D. Murphy, J.D. Devine, J.E. Gardner, and R.S.J. Sparks, Experimental phase equilibria constraints on pre-eruptive storage conditions of the Soufriere Hills magma. *Geophys. Res. Lett.*, 25, 3437-3440, 1998.
 10. Tait, S., R.M.E. Thomas, J.E. Gardner, and C. Jaupart, Constraints on cooling rates and permeabilities of pumice in an explosive eruption jet from colour and magnetic mineralogy, *J. Volcanol. Geotherm. Res.*, 86, 79-91, 1998.
 9. Gardner, J.E., R.M.E. Thomas, C. Jaupart, and S. Tait, Fragmentation of magma during volcanic plinian eruptions, *Bull. Volcanol.*, 58, 144-162, 1996.
 8. Gardner, J.E., S. Carey, M.J. Rutherford, and H. Sigurdsson, Influence of magma composition on the eruptive activity of Mount St. Helens, Washington, *Geology*, 23, 523-526, 1995.
 7. Gardner, J.E., S. Carey, M. Rutherford, and H. Sigurdsson, Petrologic diversity in Mount St. Helens dacites during the last 4,000 years: implications for magma mixing, *Contrib. Mineral. Petrol.*, 119, 224-238, 1995.
 6. Gardner, J.E., M. Rutherford, S. Carey, and H. Sigurdsson, Experimental constraints on pre-eruptive water contents and changing magma storage prior to explosive eruptions of Mount St. Helens volcano, *Bull. Volcanol.*, 57, 1-17, 1995.
 5. Devine, J.D., J.E. Gardner, H.P. Brack, G.D. Layne, and M.J. Rutherford, Comparison of microanalytical methods for estimation of H₂O contents of silicic volcanic glasses, *Am. Mineral.*, 80, 319-328, 1995.
 4. Carey, S., J.E. Gardner, and H. Sigurdsson, The intensity and magnitude of post-glacial plinian eruptions of Mount St. Helens Volcano, *J. Volcanol. Geotherm. Res.*, 66, 185-202, 1995.
 3. Laj, P., J.M. Palais, J.E. Gardner, and H. Sigurdsson, Modified HNO₃ seasonality in volcanic layers of a polar ice core: snow-pack effect or photochemical perturbation?, *J. Atmospher. Chem.*, 16, 219-230, 1993.
 2. Gardner, J.E., H. Sigurdsson, and S. Carey, Eruption dynamics and magma withdrawal during the plinian phase of the Bishop Tuff eruption, Long Valley Caldera, *J. Geophys. Res.*, 96, 8097-8111, 1991.
 1. Carey, S., H. Sigurdsson, J.E. Gardner, and W. Criswell, Variations of column height and magma discharge during the May 18, 1980 eruption of Mount St. Helens, *J. Volcanol. Geotherm. Res.*, 43, 99-112, 1990.

Published Abstracts

146. Llewellyn, E.W., Coumans, J.P., Wadsworth, F.B., Humphreys, M.C.S., Dobson, K.J., Allabar, A., Brooker, R.J., Gardner, J.E., and Connolly, T., Growth and resorption of bubbles in magma. *Goldschmidt Conference*, 2020.
145. Sahagian, D.L., Carley, T., Allabar, A., Gardner, J.E., Llewellyn, E.W., Nowak, M., and Wadsworth, F., The birth of bubbles by spinoidal decomposition: Solving the tiny bubble

- paradox. *AGU, Fall Meet. Suppl., Abstract, 2019.*
144. Llewellyn, E., Coumans, J., Humphreys, M., Wadsworth, F., Dobson, K., Allabar, A., Brooker, R., Mathias, S., Gardner, J.E., and Coggins, J., A validated numerical model for the growth and resorption of bubbles in magma. *AGU, Fall Meet. Suppl., Abstract, 2019.*
- * 143. Hajimirza, S., Gonnermann, H., and Gardner, J.E., The upper limit on magma decompression rate from bubble number density. *AGU, Fall Meet. Suppl., Abstract, 2019.*
- * 142. Meszaros, N.F., Nasholds, M.W.M., Zimmerer, M.J., and Gardner, J.E., Changing volatile contents just prior to super-eruptions: Evidence from the Upper Bandelier Tuff, Valles caldera, New Mexico. *AGU, Fall Meet. Suppl., Abstract, 2019.*
- * 141. Guinn, N., Gardner, J.E., and Helper, M.A., Characterizing dynamic pressure variations from tree damage resulting from the 18 May 1980 pyroclastic density current of Mount St. Helens. *AGU, Fall Meet. Suppl., Abstract, 2019.*
140. Andrews, B.J., Befus, K.S., Blatter, D., Coombs, M., Hammer, J., Gardner, J.E., Larsen, J.F., Shea, T., and Wright, H.M., Rapid generation of experimental phase diagram for Mt. Augustine low-K dacite. *AGU, Fall Meet. Suppl., Abstract, 2019.*
- * 139. Gardner, J.E., Wang, Y., and Hoblitt, R.P., Formation of dense pyroclasts by sintering of ash particles during the pre-climactic eruptions of Mt. Pinatubo in 1991. *AGU, Fall Meet. Suppl., Abstract, 2019.*
- * 138. Gu, J., Fu, Suyu, Gardner, J.E., Yamashita, S., Okuchi, T., and Lin, J.-F., Anomalous elasticity of dry and hydrous rhyolitic glasses up to 3 GPa. *AGU, Fall Meet. Suppl., Abstract, 2019.*
- * 137. O'Donnell, S., and Gardner, J.E., Slow magma ascent in explosive eruptions: Implications of feldspar microlite formation in Cleetwood and Liao Rock eruptions, Crater Lake, USA. *AGU, Fall Meet. Suppl., Abstract, 2019.*
- * 136. Giachetti, T., Trafton, K., Needham, E., Watkins, J.M., Wright, H.M.N., and Gardner, J.E., Making Pumice: A post-fragmentation process? *AGU, Fall Meet. Suppl., Abstract, 2019.*
135. Coumans, J.P., Llewellyn, E.W., Wadsworth, F.B., Humphreys, M.C.S., Mathias, S.A., and Gardner, J.E., Experimentally validated bubble growth model for interpretation of magma ascent dynamics. *Goldschmidt Conference, 2019.*
- * 134. Hajimirza, S., Gonnermann, H., and Gardner, J.E., Homogeneous bubble nucleation in rhyolitic melt: Experimental confirmation of predictions from nucleation theory. *AGU, Fall Meet. Suppl., Abstract V44A-01, 2018.*
- * 133. Wiejaczka, J., Giachetti, T., Watkins, J.M., Gardner, J.E., and Shea, T., Obsidian pyroclasts: pre-eruptive, vanguard magma, or juvenile clasts formed after fragmentation? *Geol. Soc. Am., 2018.*
- * 132. Gu, J., Fu, S., Gardner, J., and Lin, J.-F., The effect of H₂O on the anomalous velocities and elasticity of rhyolitic glass up to 3 GPa. *AGU, Fall Meet. Suppl., Abstract, 2018.*
- * 131. Hajimirza, S., Gonnermann, H., and Gardner, J.E., Homogeneous bubble nucleation in rhyolitic melt: Experimental confirmation of predictions from nucleation theory. *AGU, Fall Meet. Suppl., Abstract, 2018.*
- * 130. Needham, E., Watkins, J., Garcia, V., Gardner, J.E., and Giachetti, T., Experimental study of microlite crystallization during magma ascent. *AGU, Fall Meet. Suppl., Abstract, 2018.*
129. Wadsworth, F.B., Vasseur, J., Llewellyn, E.W., Gardner, J., di Genova, D., von Aulock, F.W., Hess, K.-U., and Dingwell, D.B., Water disequilibrium during welding of rhyolitic volcanic ash. *IAVCEI General Assembly, 2017.*
128. O'Donnell, S., Andrews, B., Gardner, J.E., and Buttles, J., Effects on air entrainment and lift-

- off through interaction of two pyroclastic density currents. *IAVCEI General Assembly*, 2017.
127. Hoxsie, E., Watkins, J., Ghiachetti, T., and Gardner, J.E., Evidence for CO₂ fluxing from CO₂–H₂O anticorrelations in obsidian pyroclasts. *IAVCEI General Assembly*, 2017.
126. Gardner, J.E., Wadsworth, F.B., Llewellyn, E.W., Watkins, J.M., and Coumans, J., Sintering of ash under conduit conditions: Experiments and implications for the longevity of tuffisite fractures. *IAVCEI General Assembly*, 2017.
125. Gardner, J.E., Nazworth, C., Helper, M., and Andrews, B., Standing trees in the midst of destruction: Insights into the 18 May 1980 pyroclastic density current. *IAVCEI General Assembly*, 2017.
124. Ghiachetti, T., Gardner, J.E., Gonnermann, H.M., and Hajimirza, S., Coalescence of gas bubbles and percolation threshold in rhyolitic melt: Insights from decompression experiments. *IAVCEI General Assembly*, 2017.
123. Siebe, C., Salinas, S., Arana–Salinas, L., Macias, J.L., Gardner, J.E. and Bonasia, R., Popocatepetl’s White Pumice Plinian eruption (~27,800 cal BP) and associated debris avalanche: Implications for hazard evaluations. *IAVCEI General Assembly*, 2017.
122. Dygert, N., Lin, J.F., Marshall, E., Kono, Y., and Gardner, J.E., Viscosity and structure of a late Lunar magma ocean liquid: Implications for the purity of ferroan anorthosites and the dynamics of a crystallizing magma ocean. *LPSC*, 2017.
121. Watkins, J., Gardner, J.E., and Befus, K., Obsidian pyroclasts: Where do they come from and what can they tell us? *EOS Trans. AGU, Fall Meet. Suppl., Abstract*, 2016.
120. Gardner, J.E., and Andrews, B.J., Runout distance and dynamic pressure of pyroclastic density currents: Evidence from 18 May 1980 blast surge of Mount St. Helens. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, V14A-07*, 2016.
- * 119. Hajimirza, S., Gonnermann, H., Ghiachetti, T., and Gardner, J.E., Predicting homogeneous bubble nucleation rates. *EOS Trans. AGU, Fall Meet. Suppl., Abstract*, 2016.
118. Ghiorso, M., Gualda, G., Gardner, J.E., Apparent temperature–redox trends in the Bishop Tuff: A result of rapid growth of Fe–Ti oxides under constant temperature/redox state conditions. *EOS Trans. AGU, Fall Meet. Suppl., Abstract*, 2016.
- * 117. Smith, A.R., Jackson, B.A., Gardner, J.E., and Soule, A., Understanding the kinetics of heterogeneous bubble nucleation in Mid–Ocean Ridge Lavas from the Axial seamount 2011 eruption. *Geol. Soc. Am.*, 2016.
116. Watkins, J., Gardner, J., and Befus, K., Non–equilibrium degassing and vapor fluxing recorded in obsidian pyroclasts. *Goldschmidt Conference*, 2016.
- * 115. Gonnermann, H.M., Ghiachetti, T., Gardner, J.E., Truong, N., Toledo, P., and Hajimirza, S., Empirical relationships of homogeneous bubble nucleation, growth, and coalescence in rhyolitic melt. *EOS Trans. AGU, Fall Meet. Suppl., Abstract*, 2015.
114. Befus, K.S., and Gardner, J., Magma storage and evolution of the Central Plateau Member Rhyolites, Yellowstone caldera, USA. *EOS Trans. AGU, Fall Meet. Suppl., Abstract*, 2015.
- * 113. Jackson, B., and Gardner, J., Degassing of mid-ocean ridge basalts: Quantifying bubble nucleation and growth in the 2005-06 East Pacific Rise lava. *EOS Trans. AGU, Fall Meet. Suppl., Abstract*, 2015.
- * 112. Chattin, A., Pamukcu, A., Gardner, J., and Gualda, G., Combining experimental petrology and 3D imaging to gain insight into syn-eruptive conditions of the Bishop Tuff, California. *EGU Gen. Assem. Conf.*, 2015.
- * 111. Gardner, J.E., Jackson B., Clow, T., and Soule, S.A., Degassing of Mid-Ocean Ridge Basalts during magma ascent and lava emplacement. *EOS Trans. AGU, Fall Meet. Suppl., Abstract*,

- 2014.
- * 110. Jackson, B., and Gardner, J.E., Kinetics of bubble generation in mafic enclaves. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2014.*
 - * 109. Clow, T., Befus, K., and Gardner, J.E., Exploring crystallization kinetics in natural rhyolitic melts using high resolution CT imagery of spherulites. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2014.*
 - * 108. Befus, K., and Gardner, J.E., Magmatic volatile contents of Yellowstone caldera. *GSA, 2014.*
 - 107. Gonnermann, H.M., and Gardner, J.E., Toward a self-consistent formulation for predicting bubble nucleation in silicate melts. *EGU Gen. Assem. Conf., 2014.*
 - * 106. Ghanbarzadeh, S., Hesse, M.A., Prodanovi, M., and Gardner, J.E., Effect of dihedral angle and porosity on percolating-sealing capacity of texturally equilibrated rock salt. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2013.*
 - 105. Macias, J.L., Arce, J.L., Sosa-Ceballos, G., Gardner, J.E., and Saucedo, R., Magma storage conditions of historic Plinian eruptions of Volcan de Colima, Mexico. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2013.*
 - * 104. Befus, K., Williams, M., and Gardner, J.E., Microscopic and macroscopic assessment of the emplacement of obsidian lavas. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2013.*
 - 103. Giachetti, T., Gonnermann, H.M., Gardner, J.E., Shea, T., and Daniller-Varghese, M., Discriminating secondary from primary water in volcanic glass using thermogravimetric analysis. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2013.*
 - 102. Gardner, J.E., Befus, K.S., Gualda, G.A.R., and Ghiorso, M.S., Experimental constraints on the Bishop Tuff magma body. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2013.*
 - 101. Gonnermann, H.M., and Gardner, J.E., Beyond classical nucleation theory of bubble nucleation during explosive volcanic eruptions. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2013.*
 - * 100. Befus, K.S., and Gardner, J.E., Eruption dynamics of high silica rhyolites inferred from pyroxene and feldspar microlites. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2012.*
 - * 99. Williams, M., Befus, K.S., and Gardner, J.E., Magmatic storage conditions along the Mono Craters chain, Eastern California. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2012.*
 - * 98. Prather, T., Cisneros, M., Befus, K., Barnes, J.D., and Gardner, J.E., Chlorine and hydrogen isotope geochemistry of obsidian glasses: behavior during volcanic degassing at Mono Craters, CA. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2012.*
 - * 97. Cisneros, M., Barnes, J.D., Gardner, J.E., Jenkins, D.M., Chlorine isotope geochemistry of hydrothermally altered oceanic crust: Mineralogical controls and experimental constraints. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2012.*
 - 96. Ketcham, R.A., Gardner, J.E., and Abbott, S., Three-dimensional analysis of vesicle and crystal fragment textures in pumice using high-resolution X-ray CT: Textural evidence of eruptive processes. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2011.*
 - 95. Gardner, J.E., Befus, K., Watkins, J.M., and Hesse, M.A., The cooling history of obsidian lavas as recorded by compositional gradients surrounding spherulites. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, V31F-2600, 2011.*
 - * 94. Befus, K.S., Gardner, J.E., Miller, N.R., and Zinke, R.W., Spherulites and cooling histories of obsidian lavas, Yellowstone Caldera. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, V31F-2601, 2011.*
 - * 93. Zinke, R.W., Befus, K.S., and Gardner, J.E., Douglas Knob, Yellowstone Caldera: Pre-

- eruptive storage conditions and eruption dynamics of an obsidian lava dome. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, V21C-2515, 2011.*
92. Gardner, J.E., and Webster, J.D., Bubble nucleation in rhyolitic magmas saturated with mixed volatiles. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2010.*
- * 91. Befus, K., Gardner, J.E., and Zinke, R., Storage and eruption of large volumes of rhyolite lava: Example from Solfatara Plateau, Yellowstone caldera. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2010.*
- * 90. Sosa, G., and Gardner, J.E., Volatile (H₂O, CO₂, F, Cl, S) budgets and their evolution in explosively erupted magmas: Insights from 23 ky of eruptions of Popocatepetl Volcano, Mexico. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2010.*
89. Tait, S., and Gardner, J., The role of magma buoyancy in determining the amount of volatile-saturated silicic magma that is eruptable from a crustal reservoir. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2010.*
88. Barnes, J.D., and Gardner, J.E., Chlorine stable isotope composition of altered oceanic crust: empirical and experimental results. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2010.*
87. Arce, J.L., Rangel, E., Macias, J.L., and Gardner, J.E., Sibinal Pumice eruption, an example of transition from sub-Plinian to Plinian eruptive style at Tacana Volcanic Complex, Mexico-Guatemala. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2010.*
86. Gardner, J.E., and A.E. Lewis, Bubble nucleation in hydrous magmas: The impact of melt composition, water content, and temperature. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2009.*
- * 85. Sosa, G., Gardner, J.E., and Lassiter, J.C., Magma evolution during the last 23 ky at Popocatepetl volcano: Insights from Sr, Nd, and Pb isotopes in plagioclase, pyroxenes, and pumice matrix. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2009.*
- * 84. Lewis, A.E., and Gardner, J.E., Melt-bubble surface tension in hydrous magmas and the effects of alkalinity, temperature, and water content. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2009.*
83. Castro, J.M., Burgisser, A., and Gardner, J.E., Mechanical interactions between bubbles in experimentally decompressed H₂O-saturated rhyolite melts. *EOS Trans. AGU, Fall Meet. Suppl., Abstract, 2009.*
82. Gardner, J.E., Experimental constraints on non-equilibrium degassing of bubbly magmas. *EOS Trans. AGU, 89(53), Fall Meet. Suppl., Abstract V14A-03, 2008. Invited Talk*
- * 81. Sosa-Ceballos, G, and Gardner, J.E., Volatile changes in magma related to magma evolution: Influences from magma mixing, crustal assimilation, and crystallization. *EOS Trans. AGU, 89(53), Fall Meet. Suppl., Abstract V23E-2181, 2008.*
80. Arce, J.L, Macias, J.L., and Gardner, J.E., The ~14 ka Plinian-type eruption at Tacana Volcanic complex, Mexico-Guatemala. *EOS Trans. AGU, 89(53), Fall Meet. Suppl., Abstract V11C-2060, 2008.*
- * 79. Andrews, B.J., and Gardner, J.E., Pyroclastic density current stratification during the 18 May 1980 eruption of Mount St. Helens. *EOS Trans. AGU, 89(53), Fall Meet. Suppl., Abstract V41C-2093, 2008.*
- * 78. Szramek, L.A., and Gardner, J.E., Do Plinian eruptions of mafic magma require fast ascent rates? *EOS Trans. AGU, 89(53), Fall Meet. Suppl., Abstract V23G-2203, 2008.*
- * 77. Huff, C.J., and Gardner, J.E., Flow dynamics of the Pitchstone Plateau obsidian flow in Yellowstone National Park, WY. *EOS Trans. AGU, 89(53), Fall Meet. Suppl., Abstract V11C-2065, 2008.*

76. Macias, J.L., Arce, J., Rueda, H., and Gardner, J.E., Pre-eruptive conditions of the ~31 ka rhyolitic magma of Tlaloc volcano, Sierra Nevada Volcanic Range, central Mexico. *EOS Trans. AGU*, 89(53), *Fall Meet. Suppl.*, Abstract V33D-2248, 2008.
75. Gardner, J.E., The impact of a pre-existing gas phase on the degassing of magma during explosive eruptions. *EGU General Assembly, Geophy. Res. Abstrs. v. 10*, 2008. **Invited Talk**
- * 74. Myers, N., and Gardner J.E., Sequential bubble growth and fragmentation in Plinian eruptions: The record in dacite pumice from Volcan Popocatepetl, Mexico. *EGU General Assembly, Geophy. Res. Abstrs. v. 10*, 2008.
73. Gardner, J.E., Storage of Explosive versus Effusive Rhyolite Magma at the Yellowstone Volcanic Center. *EOS Trans. AGU*, 88(52), V53B-1323, 2007.
- * 72. Sosa, G., Gardner, J.E., and Housh, T., The dynamics of magma chamber processes at Popocatepetl volcano, as recorded by plagioclase phenocrysts. *EOS Trans. AGU*, 88(52), V41D-0796, 2007.
- * 71. Andrews, B.J., and Gardner, J.E., Turbulent dynamics and pyroclastic flow generation during the Mount St. Helenes May 18th, 1980, eruption. *EOS Trans. AGU*, 88(52), V31E-0702, 2007.
- * 70. Goepfert, K., and Gardner, J.E., Pre-eruptive storage conditions and volatile contents of basaltic Plinian eruptions: Are they unusual?. *EOS Trans. AGU*, 88(52), V31B-0493, 2007.
69. Arce, J.L., Gardner, J.E., and Macias, J.L., Long term storage of explosively erupted magma at Nevado de Toluca volcano, Mexico. *EOS Trans. AGU*, 88(52), V31B-0492, 2007.
68. Wulf, S., Dull, R., Mann, P., McIntosh, K., and J.E. Gardner, Late Pleistocene/Holocene paleoclimate reconstruction and eruptive history of Central American volcanoes from lake bottom sediments of Lake Nicaragua (Nicaragua). *EOS Trans. AGU*, 88(52), PP33A-1004, 2007.
67. Macias, J., Arce, J., Gardner, J., Garcia, F., and Castillo, J., The January 22, 2001, scoria flow produced at Popocatepetl volcano, Mexico. *EOS Transactions AGU*, 87(52), 2006.
66. Gardner, J.E., Experimental Constraints on the Development of Permeability in Bubbly Magma. *EOS Trans. AGU*, 86(52), V42A-04, 2005. **Invited Talk**
- * 65. Myers, N., J.E. Gardner, and C. Siebe, A Textural Exploration of the Physical Attributes of Pumice Clasts From the 23,000 Y.B.P. Eruption of Popocatepetl Volcano in Central Mexico Magma. *EOS Trans. AGU*, 86(52), V53B-1546, 2005.
- * 64. Andrews, B., J.E. Gardner, and T. Housh, Long-term Magma Recharge Recorded in ⁸⁷Sr/⁸⁶Sr Zonation in Plagioclase Phenocrysts, El Chichon, Mexico Magma. *EOS Trans. AGU*, 86(52), V13B-0531, 2005.
- * 63. Szramek, L., J.E. Gardner, and M. Hort, Cooling Induced Variations in Crystallization of a Basaltic Pumice from Shishaldin Volcano, Alaska.. *EOS Trans. AGU*, 86(52), V41B-1451, 2005.
- * 62. Abrego, F., and J.E. Gardner, Experimental Constraints on the Development of Connectivity of Poly-Dispersive Bubble Sizes in Magmas. *EOS Trans. AGU*, 86(52), V53A-1527, 2005.
61. Larsen, J., and J.E. Gardner, Experimental results on decompression crystallization in an Aleutian basaltic-andesite. *EOS Trans. AGU*, 86(52), V13B-0553, 2005.
60. Arce, J.L., J.L. Macias, and J.E. Gardner, Late Pleistocene magmatic evolution of Tacana volcano, Mexico. *EOS Trans. AGU*, 86(52), V41B-1446, 2005.
59. Izbekov, P., J.F. Larsen, and J.E. Gardner, Petrological and experimental constraints on the recent magma plumbing system at Okmok volcano, Alaska, USA. *EOS Trans. AGU*, 86(52), V13B-0533, 2005.

58. Tait, S., and J.E. Gardner, A physical framework to account for both caldera-forming and non-caldera-forming volcanic eruptions. *EGU: EGU05-A-09873*, 2005.
57. Gardner, J.E., Bubble nucleation in highly viscous silicate melts during instantaneous decompression from high pressure, *EOS Transactions AGU*, 2004.
- * 56. Andrews, B., Gardner, J.E., and Izbekov, P., Ksudach, Variations in eruptive dynamics and magma withdrawal during the Caldera V eruption of Ksudach volcano, Kamchatka, *EOS Transactions AGU*, 2004.
- * 55. Szramek, L.A., Gardner, J.E., and Larsen, J., Decompression induced crystallization of basaltic andesite magma: Constraints on the eruption of Arenal volcano, Costa Rica, *EOS Transactions AGU*, 2004. **Invited Talk**
54. Burgisser, A., and Gardner, J.E., The significance of cross-bedded surge deposits, *EOS Transactions AGU*, 84(46), Fall Meet. Suppl., Abstract, 2003.
53. Castro, J.M., and Gardner, J.E., Phase equilibria and kinetic crystallization experiments on the Inyo Domes rhyolite [abstract], *EOS Transactions AGU*, 84(46), Fall Meet. Suppl., Abstract, 2003.
- * 52. Izbekov, P., Gardner, J.E., Andrews, B., Ponomareva, V.V., Melekestsev, I.V., Petrology of Holocene caldera-forming eruptions at Ksudach, Kamchatka, *EOS Transactions AGU*, 84(46), Fall Meet. Suppl., Abstract, 2003.
- * 51. Browne, B.L., Gardner, J.E., and Larsen, J., Amphibole reaction rims in response to decompression compared to heating: an experimental approach, *EOS Transactions AGU*, 84(46), Fall Meet. Suppl., Abstract, 2003.
- * 50. Szramek, L.A., Gardner, J.E., and Larsen, J., Experimental constraints on the magma chamber conditions and degassing of Arenal volcano, Costa Rica, *EOS Transactions AGU*, 84(46), Fall Meet. Suppl., Abstract, 2003.
- * 49. Andrews, B.J., Gardner, J.E., and Izbekov, P.E., Eruption dynamics and conduit processes of the circa 240 A.D. eruption of Ksudach volcano, Kamchatka, Russia, *EOS Transactions AGU*, 84(46), Fall Meet. Suppl., Abstract, 2003.
- * 48. Stelling, P., Gardner, J.E., and Beget, J., Remotely induced eruptions: the Caldera-forming eruption of Fisher volcano, *EOS Transactions AGU*, 84(46), Fall Meet. Suppl., Abstract, 2003.
47. Layer, P.W., Gardner, J.E., Mora, J.C., and Arce, J.L., Argon isotopes as recorders of magmatic processes, *EOS Transactions AGU*, 84(46), Fall Meet. Suppl., Abstract, 2003.
46. Mora, J.C., J.L. Macias, and J.E. Gardner, Experimental petrology applied in deposits of the 550 yr. B.P. eruption at El Chichon volcano, Chiapas, *EOS Transactions AGU*, 83, F1463, 2002.
45. Gardner, J.E., S. Tait, B.J. Andrews, V. Ponomareva, and I.V. Melekestsev, Eruption dynamics of the KS1 caldera eruption of Ksudach volcano, Russia, *EOS Transactions AGU*, 83, F1468, 2002.
- * 44. Nicholson, R., J.E. Gardner, and C.A. Neal, The 1931 eruption of Aniakchak volcano, Alaska, *EOS Transactions AGU*, 83, F1465, 2002.
43. Miller, T.P., C.R. Waythomas, and J. Gardner, Multiple Late Quaternary Caldera-Forming Eruptions at Mount Veniaminof Volcano, Alaska Peninsula Russia, *EOS Transactions AGU*, 83, F1465, 2002.
- * 42. Browne, B., and J.E. Gardner, Experimental calibration of amphibole breakdown rates in response to decompression and heating, *EOS Transactions AGU*, 83, F1464, 2002.
41. Suzuki, Y., and J.E. Gardner, Experimental Constraints on Magma Ascent during the Usu 2000

- Eruption, Japan, *EOS Transactions AGU*, 83, F1418, 2002.
40. Snyder, D., A. Burgisser, and J.E. Gardner, Volcanic fall deposits on Mars: A linear response theory approach to modeling sedimentation, *Lunar Planet. Sci.*, XXXIII, 2002.
 39. Churikova, T., B. Ivanov, J. Eichelberger, S. Trusov, J. Gardner, A. Belousov, B. Browne, P. Izbekov, and G. Werner, Kizimen Volcano: An Unzen-like Magma System in Kamchatka, *EOS Transactions AGU*, 82, F1381, 2001.
 38. Layer, P.W., J.E. Gardner, and M.J. Rutherford, Argon Isotopic and Experimental Petrologic Evidence for Phenocrysts Versus Xenocrysts in the Youngest Toba Tuff, *EOS Transactions AGU*, 82, F1319, 2001.
 - * 37. Browne, B., and J.E. Gardner, Late-stage Pyroclastic Flow and Fall Deposits From Volcán Ceboruco, Mexico: Insights From a Small Volume Caldera-Forming, *EOS Transactions AGU*, 82, F1381, 2001.
 - * 36. Denis, M.-H., and J.E. Gardner, Nucleation rates of bubbles in magmas, *EOS Transactions AGU*, 82, F1366, 2001.
 35. Gardner, J.E., A. Burgisser, and P.J. Shamberger, Experimental constraints on degassing and permeability in volcanic conduit flow, *EOS Transactions AGU*, 82, F1300, 2001.
 34. Harms, E., and J.E. Gardner, Pre-eruptive storage conditions of the highly differentiated phonolitic Laacher See magma (East Eifel, Germany), *TERRA nova*, 2001.
 33. Larsen, J., and J.E. Gardner, Experimental Investigation of Bubble Nucleation in Sub-Liquidus Silicate Melts, *EOS Transactions AGU*, 81, F1293, 2000.
 32. Tait, S., J.E. Gardner, and G. Russo, The formation of calderas during explosive volcanic eruptions, *EOS Transactions AGU*, 81, F1336, 2000.
 31. McNutt, S., J. Dehn, and J.E. Gardner, Phreatic Explosions at Shishaldin Volcano, Alaska, September 1999 to August 2000, *EOS Transactions AGU*, 81, F1376, 2000.
 - * 30. Browne, B.L., and J.E. Gardner, Transport and Deposition of Pyroclastic Material during the Caldera-Forming Eruption of Volcan Ceboruco (Mexico), *EOS Transactions AGU*, 81, F1332, 2000.
 - * 29. Burgisser, A., G.W. Bergantz, and J.E. Gardner, Implications of Self-Organization in Pyroclastic Density Currents, *EOS Transactions AGU*, 81, F1333, 2000.
 - * 28. Izbekov, P., J.E. Gardner, and J. Eichelberger, The 6,600 BP caldera forming eruption at Karymsky: Experimental constraints on pre-eruptive storage conditions, *EOS Transactions AGU*, 81, F1352, 2000.
 - * 27. Coombs, M.L., and J.E. Gardner, Disequilibrium reactions between mafic phenocrysts and rhyolite melt: Implications for magma mixing, *EOS Transactions AGU*, 81, F1291, 2000.
 - * 26. Stelling, P. L., and J. E. Gardner, Eruptive and Compositional Evolution of Fisher Caldera, Alaska, USA, *EOS Transactions AGU*, 81, F1352, 2000.
 - * 25. Chertkoff, D.G., and J.E. Gardner, Timing Between Mixing and the Caldera-Forming Eruption of Volc'n Ceboruco, Mexico, *EOS Transactions AGU*, 81, F1294, 2000.
 24. Gardner, J.E., and M. Coombs, Magma Storage Conditions for the Rhyolite of the 1912 Eruption of Katmai, Katmai National Park, Alaska, *EOS Transactions AGU*, 80, F1105, 1999.
 23. Larsen, J.F., J.E. Gardner, H.R. Westrich, and J.C. Eichelberger, Experimental study of bubble growth and interactions in rhyolitic melts, *EOS Transactions AGU*, 80, F1109, 1999.
 22. Layer, P.W., and J.E. Gardner, What is the Significance of Excess Argon in Mount St. Helens Plagioclase?, *EOS Transactions AGU*, 80, F1129, 1999.
 21. Beget, J., C. Nye, J.E. Gardner, P. Stelling, and J.D. Devine, Deposits of the 1999 Eruptions of

- Shishaldin Volcano, Unimak Island, Alaska, *EOS Transactions AGU*, 80, F1147, 1999.
20. Gardner, J.E., M.J. Rutherford, and M. Hort, Degassing of trace gases during volcanic eruptions, *EOS Transactions AGU*, 79, F936, 1998.
 19. Hort, M., and J.E. Gardner, Degassing of pumices during volcanic eruptions, *EOS Transactions AGU*, 79, F936, 1998.
 - * 18. Weitz, C.M., and J.E. Gardner, The Stealth deposit on Mars: Is it a volcanic deposit?, *Lunar Planet. Sci.*, XXIV, 1998.
 17. Gardner, J.E., and M.J. Rutherford, Gas Pressures and Phase Equilibria in the Toba Tuff Magma, *EOS Transactions AGU*, 78, F792, 1997.
 16. Tait, S., and J. Gardner, The caldera-forming eruption of Ceboruco, Mexico, *EOS Transactions AGU*, 78, F824, 1997.
 15. Blundy, J.D., and J.E. Gardner, Origin of Mount St. Helens dacites by partial melting of underplated Cascades basalts, *Journal of Conference Abstracts*, 2, 16, 1997.
 14. Gardner, J.E., R.M.E. Thomas, C. Jaupart, and S. Tait, Fragmentation of magma during volcanic plinian eruptions, *EOS Transactions AGU*, 77, F818, 1996.
 - * 13. E. A. Cottrell, M.J. Rutherford, and J. Gardner, Conflicting Evidence for Pre-Eruptive Conditions and Processes in the Minoan Rhyodacite, Santorini, Greece, *EOS Transactions AGU*, 77, F805, 1996.
 12. Hort, M., and J. Gardner, On the longevity of conduits, *EOS Transactions AGU*, 77, F819, 1996.
 11. Jaupart, C., J. Gardner, M. Stasiuk, S. Tait, and R. Thomas, Field constraints on the physics of ascent, degassing and fragmentation of magma, *TERRA nova*, 7, 133, 1995.
 10. Gardner, J.E., M. Carroll, and C. Jaupart, Experimental constraints on degassing of magma during volcanic eruptions, *EOS Transactions AGU*, 75, 728, 1994.
 9. Blank, J.G., J.E. Gardner, C. Jaupart, and Z. Sharp, Degassing and fragmentation histories of erupted magmas: Evidence from matrix glasses in pumice, *EOS Transactions AGU*, 75, 719, 1994.
 8. Carey, S., J.E. Gardner, M.J. Rutherford, and H. Sigurdsson, Influence of magma mixing on the eruptive activity of Mount St. Helens, *EOS Transactions AGU*, 75, 750, 1994.
 7. Blundy, J.D., and J.E. Gardner, Trace element variation in matrix and inclusion glasses from Mount St. Helens dacites, 1480-1980 A.D., *EOS Transactions AGU*, 75, 733, 1994.
 6. Gardner, J.E., M. Rutherford, S. Carey, H. Sigurdsson, and G. Layne, Changing volatile content and magmatic storage of dacitic magma at Mount St. Helens, *EOS Transactions AGU*, 73, 367, 1992.
 5. Gardner, J.E., S. Carey, H. Sigurdsson, M. Rutherford, and G. Layne, Influence of changing magmatic properties and storage on explosive volcanism at Mount St. Helens, *EOS Transactions AGU*, 72, 576, 1991.
 4. Carey, S., J.E. Gardner, and H. Sigurdsson, Intensity and magnitude of post-glacial plinian eruptions of Mount St. Helens, *N.M. Bur. Mines Mineral. Res.*, 131, 43, 1989.
 3. Gardner, J.E., H. Sigurdsson, and S.N. Carey, Magma withdrawal and eruption dynamics during the plinian phase of the Long Valley Caldera eruption, California, *N.M. Bur. Mines Mineral. Res.*, 131, 103, 1989.
 2. Gardner, J.E., L.A. Haskin, and J.C. Brannon, Trace element and Nd isotopic behavior in the Endion Sill, Duluth, Minn., *Geol. Soc. Am. Abstrs. Progs.*, 19, 390, 1987.
 1. Gardner, J.E., L.A. Haskin, and J.C. Brannon, Possible assimilation by a mafic magma: the Endion Sill, Duluth, Minnesota, *Lunar Planet. Sci.*, XVIII, 312-313, 1987.

Invited Presentations

Department of Earth Sciences, University of Oregon, January 2018. “Investigating the Dynamics of Pyroclastic Flows from the Damage They Leave Behind.” and “From Ash to Obsidian: Making Lava in Volcanic Conduits.”

Institute for Hazards, Risk, and Resilience, Durham University, November 2015. “The End of a Plinian Affair: Observations and Speculations on How and Why Explosive Eruptions Stop.”

Institute for Advanced Studies, Durham University, October 2015. “Evidence for the Biggest Volcanic Eruptions from the Smallest Bubbles and Crystals.”

American Museum of Natural History, January 2012. “Spherulites as Proxy Thermometers in Lavas: Constraints on Obsidian Lavas Erupted in Yellowstone National Park.”

American Geophysical Union, Fall Meeting, December 2008. “Experimental constraints on non-equilibrium degassing of bubbly magmas.”

European Geophysical Union, General Assembly, April 2008. “The impact of a pre-existing gas phase on the degassing of magma during explosive eruptions.”

The 25th Commemorative Conference of El Chichòn volcano, March 23-25, 2007, San Cristobal de las Casas, Chiapas, Mexico. “Dynamics of the El Chichon Magma System as Recorded by Compositional Zonations in Plagioclase Phenocrysts”

American Geophysical Union, Fall Meeting, December 2005. “Experimental Constraints on the Development of Permeability in Bubbly Magma.”

Institute for Geophysics, April 24, 2004, UNAM, Mexico City, Mexico. “Experimental Petrology: The Reasons for Doing Experiments and the Reasoning Behind Them”.

Penrose Conference, Geological Society of America, Neogene-Quaternary continental margin volcanism, January 12-16, 2004, Metepec, Puebla, Mexico. “The Dynamics of Bubble Formation in Magmas”.

Conference on Drilling Unzen Volcano, January 20, 2002, Shinabara, Japan. “Bubble Nucleation, Growth, and Coalescence”.

IVGG, July 31, 2001, Petropavlosk-Kamchatsky, Russia. “Modeling Caldera Collapse”.

Institute for Geophysics, November 9, 1999, UNAM, Mexico City, Mexico. “Cooling of Pumices: Implications on Degassing”.

IX. Service

University of Texas at Austin Service

Chair, Graduate Support and Admissions Committee, 9/01/2012-present

Chair, Space and Facilities Committee, Department of Geological Sciences, 9/01/2016-present

Chair, Search Committee for Faculty Position in Petrology, 9/01/2019-present

Faculty Oversight, ICP-MS Facility, Department of Geological Sciences, 9/01/2015-present.

Member, Jackson School Equipment Committee, 9/01/2019-present

Member, University of Texas Graduate Education Task Force, 9/01/2018-8/31/19

Chair, Search Committee for Faculty Position in Petrology, 9/01/2013-8/31/2015

Chair, Jackson School Petrology and Mineral Physics Discipline, 9/01/2011-8/31/2012

Chair, Jackson School Petrology Education and Research Group, 9/01/2003-8/31/2011

Chair, Search Committee for Electron Microbeam Facilities Manager, 5/01/2008-12/31/2009

Chair, Review Committee of the Bachelor's in Science degree in Geological Sciences, Option I. General Geology, 9/01/2007-12/31/2007

Member, Jackson School Endowment Committee, 9/01/09-8/31/14

Member, Jackson School Graduate Admissions and Support Committee, 9/01/2003-8/31/2011

Member, Search committee for Jackson School Crust/Mantle/Core Theme Search, 3/31/2007-5/30/2009

National and International Service

Editor-in-Chief, Journal of Volcanology and Geothermal Research, 1/1/17-present.

Associate Editor, Bulletin of Volcanology, 10/01/2011-12/31/2016

Associate Editor, Journal of Geophysical Research, Solid Earth, 2/06/2003-12/31/2005

Deputy Secretary General of IAVCEI, 2000-2003

National Science Foundation, EAR Proposal Review Panel, 9/2005

Continuing consultation for developing experimental petrology laboratory at UNAM, Project Funded by CONOCyT for Dr. Jose Luis Macias and Dr. Jose Luis Arce

Reviewer of research proposals to National Science Foundation proposals, Swiss National Science Foundation, NERC, and Israel Science Foundation

Reviewer of submitted manuscripts to Earth and Planetary Science Letters, Journal of Geophysical Research, Bulletin of Volcanology, Journal of Volcanology and Geothermal Research, Geophysical Research Letters, Contributions to Mineralogy and Petrology, Geology, European Journal of Mineralogy, Lithos, Bulletin of Geological Society of America, American Mineralogist

University of Alaska Fairbanks Service

Faculty Council and Chair, Graduate and Professional Activities Committee, 7/01/1999-5/07/2001

Geology and Geophysics Departmental Accreditation Notebook, 7/01/2000-6/30/2001

Member, Graduate Admissions Committee, 9/01/1999-5/31/2003

Staff scientist with Alaska Volcano Observatory, 9/01/1998-5/31/2003