

Curriculum Vitae
Michael O. Garcia

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Education:

Ph.D., Geology, Univ. of California at Los Angeles, 1976; Dissertation: "Criteria for Recognition of Ancient Island Arcs in the Rock Record: Rogue River Complex, Oregon"

B.A., Geology, California State University at Humboldt, 1971. Senior Thesis: "Petrography of the Josephine Ophiolite, California". Field Camp, Univ. of Kansas, 1970

Research Interests: Volcanology, Igneous Petrology, Hawaiian Geology

Professional Societies: American Geophysical Union, Geological Society of America, Geochemical Society, Mineralogical Society of America, International Association of Volcanology and Chemistry of the Earth's Interior

Honors

Fellow, Mineralogical Society of America 2015, American Geophysical Union 2014, Geological Society of America, 1999
President, Hawai'i Academy of Science, 1999-2001
Teaching Excellence Award, SOEST, Univ. of Hawai'i, 1995

Positions Held

Emeritus Professor, University of Hawai'i at Mānoa, 2020-present
Professor, University of Hawai'i at Mānoa, 1987-2019
Visiting Professor, Australian National University, 2017
Visiting Professor, Yamagata University, Japan, 2012
Visiting Professor, Macquarie University, Australia, Fall 2008
Technical Administrative Judge, U.S. Nuclear Regulatory Commission, 2007-2019
Visiting Professor, University of the Philippines, Spring 2006, Fall, 2009
Visiting Scholar, Australian National University, 2002, 2004, 2017
Head, Volcanology-Geochemistry-Petrology Div., Univ. of Hawai'i, 1983-5, 2000-2
Assoc. Chair & Undergrad Advisor, Geology-Geophys. Dept., Univ. of Hawai'i, 2000-1
Core Processing Supervisor for Hawaiian Scientific Drilling Project, 1999-present
Chair, Geology and Geophysics Dept., Univ. of Hawai'i, 1990-1
Visiting Professor, Massachusetts Institute of Technology, 1989
Associate Professor, Geology and Geophysics Dept., Univ. of Hawai'i, 1982-7
Mapper, U.S.G.S. Big Island Mapping Project, Summers of 1984-87
Visiting Associate Professor, U.C. Santa Barbara, 1982-3
Assistant Professor, Geology and Geophysics Dept., Univ. of Hawai'i, 1976-81

Teaching Experience

Graduate Level Courses: How to Write Scientific Papers, Hawaiian Volcanology and Geology, California Geology, Igneous Petrology Seminar, Geochemical Analytical Methods, Current Events in Volcanology, Oceanic Petrology.

Undergraduate Courses: Igneous and Metamorphic Petrology, Geological Field Methods, Dynamic Earth Lecture and Laboratory, Rock and Minerals, Structural Geology

CITATIONS (GOOGLE SCHOLAR)

Cumulative citations 1978–2023: ~12,225. Hirsch index (H-index): 66

Scientific Papers, Books and Maps

(student and post-doctoral co-authors of Garcia are listed *in italics*)

- 175 Williamson, N., Weis., D., Scoates, J., **Garcia, M.O.**, 2023. Emergence of the Loa mantle component in the Hawaiian Islands based on the geochemistry of Kaua'i shield-stage basalts. *Geochemistry, Geophysics, Geosystems*, in press.
- 174 Pietruszka, A.P., **Garcia, M.O.**, Carlson, R.W., Hauri, E.H. 2023. Slow variations in lava chemistry at Kama'ehuakanaloa linked to sluggish mantle upwelling on the margin of the Hawaiian plume. *Geology*, in press.
- 173 Williamson, N., Weis., D., Scoates, J., **Garcia, M.O.**, 2023. $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology of basalts from Kaua'i, Hawai'i: Implications for shield-stage evolution of Hawaiian volcanoes. *Bulletin of Volcanology*, in press.
- 172 Jicha, B. and **Garcia, M.O.**, 2023. The youngest rejuvenated volcanism in Hawai'i: Its trigger and implications for future eruptions in Honolulu. *Geological Society of American Bulletin*, <https://doi.org/10.1130/B36615.1>.
- 171 **Garcia, M.O.**, Swanson, K., Lormand, C., Norman, M., 2022. Petrology of Koko Rift Basalts: Hawai'i's most recent and atypical rejuvenation stage eruptive sequence. *Journal of Volcanology and Geothermal Research*, 424, 107504.
- 170 **Garcia, M.O.**, Pietruszka, A.P., Rhodes, J.M., Norman, M., 2021. Kīlauea's Pu'u 'Ō'ō Eruption (1983-2018): A synthesis of magmatic processes during a prolonged basaltic event. *Chemical Geology*, 581, 120391, doi.org/10.1016/j.chemgeo.2021.120391.
- 169 Pietruszka, A. P., **Garcia, M.O.** and Rhodes, J. M., 2021. Accumulated Pu'u 'Ō'ō magma fed the voluminous 2018 rift eruption of Kīlauea Volcano: Evidence from lava chemistry. *Bulletin of Volcanology*, <https://doi.org/10.1007/s00445-021-01470-3>.
- 168 Rose-Koga, E. F., and 45 others including **Garcia, M.O.**, 2021. Silicate melt inclusions in the new millennium: A review of recommended practices for preparation, analysis, and data presentation. *Chemical Geology*, 570, article 120145.
- 167 Umino, S. and 22 others including **Garcia, M.O.**, 2021. Workshop Report: Exploring Deep Oceanic Crust off Hawai'i. *Scientific Drilling*, 29, 69–82.
- 166 *Guest, I.*, Ito, G., **Garcia, M.O.** and Hellebrand, E., 2020. Extensive magmatic heating of the lithosphere beneath the Hawaiian Islands inferred from Salt Lake Crater mantle xenoliths. *Geochemistry, Geophysics, Geosystems*, 21, e2020GC009359. <https://doi.org/10.1029/2020GC009359>.
- 165 *Lynn K.J.*, **Garcia, M.O.** and Shea, T., 2020. Phosphorus coupling obfuscates lithium geospeedometry in olivine. *Frontiers in Earth Science*, 8, 135. doi: 10.3389/feart.2020.00135.
- 164 **Garcia, M.O.**, *Tree, J.P.*, Wessel, P., Smith, J.R., 2020. Pūhāhonu: Earth's biggest and hottest shield volcano. *Earth and Planetary Science Letters*, doi: 10.1016/j.epsl.2020.116296.
- 163 Harrison, L., Weis., D., **Garcia, M.O.**, 2020. The Multiple Depleted Mantle Components in the Hawaiian-Emperor Chain. *Chemical Geology*, 532, doi.org/10.1016/j.chemgeo.2019.119324.
- 162 **Garcia, M.O.** and Hellebrand, E., 2020. Celestine discovered in Hawaiian submarine basalts. *American Mineralogist*, 105, 52-57. <https://doi.org/10.2138/am-2019-6995>.
- 161 *Walker, B.*, **Garcia, M.O.**, Orr, T., 2019. Petrologic insights into rift zone magmatic interactions under Kilauea's Napau Crater (1922-2011). *Journal of Petrology*, 60, 2051–2075.
- 160 Williamson, N., Weis, D., Scoates, J., Pelletier, H., and **Garcia, M.O.**, 2019. Tracking the geochemical transition between the Kea-dominated Northwest Hawaiian Ridge and the bilateral Loa-Kea trends of the Hawaiian Islands. *Geochemistry, Geophysics, Geosystems*, 20, 4354-4369, <https://doi.org/10.1029/2019GC008451>.
- 159 Morishita, T., and 8 coauthors including **Garcia, M.O.**, 2019, Workshop report on Hard rock

- drilling into mid-Cretaceous Pacific oceanic crust on the Hawaiian North Arch. *Scientific Drilling*, 7, 1–11, <https://doi.org/10.5194/sd-7-1-2019>.
- 158 Pietruszka, A.J., Heaton, D.E., and **Garcia, M.O.**, Marske, J.P., 2019. Explosive summit collapse of Kīlauea Volcano in 1924 preceded by a decade of crustal contamination and anomalous Pb isotope ratios. *Geochimica et Cosmochimica Acta*, 258, 120–137.
- 157 Loewen, M.W., Graham, D.W., Bindeman, I.N., Lupton, J.E., and **Garcia, M.O.**, 2019. Hydrogen isotopes in high $^3\text{He}/^4\text{He}$ submarine basalts: Primordial vs. recycled water and the veil of mantle enrichment. *Earth and Planetary Science Letters*, 508, 62-73.
- 156 Tucker, J.M., Hauri, E.H., Marske, J.P., Pietruszka, A.J., **Garcia, M.O.**, Trusdell, F.A., 2019. A high carbon content of the Hawaiian mantle from olivine-hosted melt inclusions. *Geochimica et Cosmochimica Acta*, 254, 156–172.
- 155 **Garcia, M.O.**, Mucek, A., Lynn, K.J., Swanson, D., and Norman, M., 2018. Geochemical evolution of Keanakakoi Tephra, Kilauea Volcano, Hawaii. *in* Poland, M., Garcia, M., Camp, V., and Grunder, A., eds., *Field Volcanology: A Tribute to the Distinguished Career of Don Swanson: Geological Society of America Special Paper 538*, p. 203-225, [https://dx.doi.org/10.1130/2018.2538\(09\)](https://dx.doi.org/10.1130/2018.2538(09)).
- 154 Jicha, B., **Garcia, M.O.**, and Wessel, P., 2018. Mid-Cenozoic Pacific plate motion change: Implications for the Northwest Hawaiian Ridge and circum-Pacific. *Geology*, 46, 1-4, <https://doi.org/10.1130/G45175.1>.
- 153 Lynn, K.J., Shea, T., **Garcia, M.O.**, Costa, F., Norman, M.D., 2018. Lithium diffusion in olivine records priming of explosive basaltic eruptions. *Earth and Planetary Science Letters*, 500, 127-135.
- 152 Pietruszka, A.J., Marske, J.P., **Garcia, M.O.**, Heaton, D.E., Rhodes, J.M., 2018. An isotopic perspective into the magmatic evolution and architecture of the rift zones of Kīlauea Volcano. *Journal of Petrology*, 59, 2311–2352, doi: 10.1093/petrology/egy098.
- 151 Poland, M., **Garcia, M.O.**, Camp, V., Grunder, A., 2018. Editors, *Field Volcanology: A Tribute to the Distinguished Career of Don Swanson: Geological Society of America Special Paper 538*, p., <https://dx.doi.org/10.1130/2018.2538>.
- 150 Thordarson, T., **Garcia, M.O.**, 2018. Tracking Rejuvenated Volcanism at Kīlauea Point, Kauaʻi, Hawaiʻi. *Frontiers in Earth Science*, 6, <https://doi.org/10.3389/feart.2018.00121>.
- 149 **Garcia, M.O.**, Jicha, B.R., Marske, J.P. and Pietruszka, A.J., 2017. How old is Kīlauea Volcano? Insights from $^{40}\text{Ar}/^{39}\text{Ar}$ dating of the 1.7-km-deep SOH-1 core. *Geology*, 45, 79-82, doi:10.1130/G38419.1.
- 148 **Garcia, M.O.**, Watson, B., Editors, 2017, *Olivine, Special Collection of 11 Papers for American Mineralogist*, 102.
- 147 Harrison, L., Weis, D., **Garcia, M.O.**, 2017. The link between Hawaiian mantle plume composition, magmatic flux, and deep mantle geodynamics. *Earth and Planetary Science Letters*, 463, 298-309, 10.1016/j.epsl.2017.01.027.
- 146 Lynn, K.J., Shea, T., and **Garcia, M.O.**, 2017. Nickel variability in Hawaiian olivine: Evaluating the relative contributions from mantle and crustal processes. *American Mineralogist*, 102, 507–518, doi.org/10.2138/am-2017-5763.
- 145 Lynn, K.J., **Garcia, M.O.**, Shea, T., Costa, F., and Swanson, D.A., 2017. Timescales of mixing and storage for Keanakākoʻi Tephra magmas (1500-1823 C.E.), Kīlauea Volcano, Hawaiʻi. *Contributions to Mineralogy and Petrology*, 172, 76-95, doi. 10.1007/s00410-017-1395-4.
- 144 **Garcia, M.O.**, Rhodes, J.M., Huang, S., Hickey-Vargas, R., 2016. Magmas and their sources: A special issue honoring Frederick A. Frey. *Geochimica et Cosmochimica Acta*, Fred Frey Special Issue, 185, 1-8, 10.1016/j.gca.2016.05.018.
- 143 **Garcia, M.O.**, Weis, D., Jicha, B.R., Ito, G., Hanano, D., 2016. Petrology and geochronology of lavas from Kaʻūla Volcano: Implications for rejuvenated volcanism of the Hawaiian Mantle Plume. *Geochimica et Cosmochimica Acta*, Fred Frey Special Issue, 185, 278–301, doi.org/10.1016/j.gca.2016.03.025.

- 142 Kelley, C., France, S., Parrish, F., Wagner, D., Geringer, M., **Garcia, M.O.**, 2016. CAPSTONE's First Year - 2015 Hohonu Moana: Exploring deep waters off Hawaii. *Oceanography*, 29, 68-73.
- 141 Clague, D.A., Frey, F.A., **Garcia, M.O.**, Huang, S., McWilliams, M., Beeson, M.H., 2016. Compositional heterogeneity of the sugarloaf melilite nephelinite flow, Honolulu Volcanics, Hawaii. *Geochimica et Cosmochimica Acta*, Fred Frey Special Issue, 185, 251-277, doi.org/10.1016/j.gca.2016.01.034.
- 140 **Garcia, M.O.**, 2015. How and why Hawaiian volcanism has become pivotal to our understanding of volcanoes. In *Hawaiian Volcanoes: Source to Surface*, Editors R. J. Carey, M. P. Poland, V. Cayol, and D. Weis. American Geophysical Union Monograph, 208, 1-18.
- 139 **Garcia, M.O.**, Smith, J.R., *Tree, J.P.*, Weis, D., Harrison, L., Jicha, B.R., 2015. Petrology, geochemistry and ages of lavas from Northwest Hawaiian Ridge volcanoes. *Geological Society of America Special Paper 511, The Origin, Evolution, and Environmental Impact of Oceanic Large Igneous Provinces*, Editors Clive R. Neal, William Sager, Takashi Sano, Elisabetta Erba, 1-26.
- 138 **Garcia, M.O.**, Weis, D., *Swinnard, L.*, Ito, G. and Pietruszka, A.J., 2015. Petrology and geochemistry of volcanics from the South Kauai Swell, Hawaii: Implications for the lithology and composition of the Hawaiian mantle plume. *Journal of Petrology*, 56, 1173–1197, doi: 10.1093/petrology/egv033.
- 137 Kelley, C., Smith, J.R., *Tree, J.*, Miller, J., Boston, B., **Garcia, M.O.**, Ito, G. Taylor, J. Lichowski, F., Wagner, D., Leonard, J., Dechnik, B., Luers, D., 2015. New seafloor mapping surveys are rewriting the geologic history of the Hawaiian archipelago. *American Geophysical Union EOS*, 96, doi:10.1029/2015EO030235.
- 136 Pietruszka, A.J., Heaton, D.E., *Marske, J.P.*, and **Garcia, M.O.**, 2015. Two small magma bodies beneath the summit of Kīlauea Volcano unveiled by isotopically distinct melt deliveries from the mantle. *Earth and Planetary Science Letters*, 413, 90–100, doi.org/10.1016/j.epsl.2014.12.040.
- 135 Shea, T., *Lynn, K.* and **Garcia, M.O.**, 2015. Cracking the olivine zoning code: Distinguishing between crystal growth and diffusion. *Geology*, 43, 935–938, 10.1130/G37082.1.
- 135 Swanson, D., Rose, T., *Mucek, A.*, **Garcia, M.O.**, Fiske, R., Mastin, L., 2014. Cycles of explosive and effusive eruptions at Kilauea Volcano, Hawaii. *Geology*, 42, 631–634, doi:10.1130/G35701.1.
- 134 Bizimis, M., Salters, V., **Garcia, M.O.**, Norman, M.D., 2013. The composition and distribution of the rejuvenated component across the Hawaiian plume: Hf-Nd-Sr-Pb isotope systematics of Kaula lavas and pyroxenite xenoliths. *Geochemistry, Geophysics, Geosystems*, 14(10): 4458-4478. doi:10.1002/ggge.20250.
- 133 Flinders, A.F., Ito, G., **Garcia, M.O.**, Sinton, J., Kauahikaua, J., Taylor, B., 2013. Intrusive dike-complexes, cumulate cores, and the exogenous growth of Hawaiian volcanoes. *Geophysical Research Letters*, v. 40, 3367–3373, doi:10.1002/grl.50633.
- 132 *Greene, A.*, **Garcia, M.O.**, Pietruszka, A., Weis, D., Marske, J., Maerschalk, C., Vollinger, M.J., Eiler, J., 2013. Temporal geochemical variations in lavas from Kīlauea's Pu'u Ō'ō eruption (1983-2010): Cyclic variations of Pb isotope ratios from the melting of vertical source heterogeneities. *Geochemistry, Geophysics, Geosystems*, 14, 11, doi: 10.1002/2013GC004719.
- 131 Ito, G., **Garcia, M.O.**, Smith, J.R., Taylor, B., Flinders, A., Jicha, B.R., Yamasaki, S. Weis, D., Swinnard, L., Blay, C., 2013. A low-relief shield volcano origin for the South Kaua'i Swell. *Geochemistry, Geophysics, Geosystems*, 14, 7 doi: 10.1002/ggge.20159.
- 130 Pietruszka, A.J., Norman, M.D., *Garcia, M.O.*, *Marske, J.*, Burns, D.H., 2013. Chemical heterogeneity in the Hawaiian mantle plume from the alteration and dehydration of recycled oceanic crust. *Earth and Planetary Science Letters*, 361, 298-309.
- 129 **Garcia, M.O.**, Weis, D., Hanano, D., Apuzen-Ito, G., Flinders, A., Kurz, M., 2012. Age, geology, geophysics and geochemistry of Mahukona volcano, Hawaii. *Bulletin of Volcanology*,

- 74, 1445-1463.
- 128 Jicha, B.R., Rhodes, J.M., Singer, B.S., **Garcia, M.O.**, 2012. The $^{40}\text{Ar}/^{39}\text{Ar}$ geochronology of submarine Mauna Loa volcano, Hawaii. *Journal of Geophysical Research*, 117, B09204 doi:10.1029/2012JB009373.
- 127 *Marske, J.P.*, Pietruszka, A.P., Trusdell, F.A., **Garcia, M.O.**, 2011. Geochemistry of southern Pagan Island lavas, Mariana arc: the role of subduction zone processes. *Contributions to Mineralogy and Petrology*, 162, 231–252, doi: 10.1007/s00410-010-0592-1.
- 126 Pietruszka, A.J., Keyes, M.J., Duncan, J.A., Hauri, E. H., Carlson, R.W., **Garcia, M.O.**, 2011. Excesses of seawater-derived ^{234}U in volcanic glasses from Loihi Seamount due to crustal contamination. *Earth and Planetary Science Letters*, 304, 280-289.
- 125 Weis, D., **Garcia, M.O.**, Rhodes, J.M., Jellinek, M. and Scoates, J.S., 2011. Role of the deep mantle in generating the compositional asymmetry of the Hawaiian mantle plume. *Nature Geoscience*, 4, 831-838, doi: 10.1038/ngeo1328.
- 124 **Garcia, M.O.**, *Swinnard, L.*, Weis, D., *Greene, A.R.*, Tagami, T., Sano, H., and *Gandy, C.E.*, 2010. Petrology, geochemistry and geochronology of Kaua'i lavas over 4.5 Ma: Implications for the origin of rejuvenated volcanism and the evolution of the Hawaiian plume. *Journal of Petrology*, 51, 1507-1540, doi:10.1093/petrology/egq027.
- 123 Flinders, A., Ito, I., **Garcia, M.O.**, 2010. Gravity anomalies of the Northern Hawaiian Islands: implications on the shield evolution of Kauai and Niihau. *Journal of Geophysical Research*, 115, B08412, doi:10.1029/2009JB006877.
- 122 *Greene, A.R.*, **Garcia, M.O.**, Weis, D., Ito, G., *Kuga, M.*, Robinson, J., *Yamasaki, S.*, 2010. Low-productivity Hawaiian volcanism between Kaua'i and O'ahu: Constraints on source composition and lithology. *Geochemistry, Geophysics, Geosystems*, v. 11, Q0AC08, doi:10.1029/2010GC003233.
- 121 Staudigel, H., Moyer, C., **Garcia, M.O.**, Malahoff, A., Clague, D., Koppers, A., 2010. Spotlight: Loihi Seamount. *Oceanography*, 23-1, 72-73.
- 120 Wang, Z., Eiler, J.M., Asimow, P., **Garcia, M.O.**, Takahashi, E., 2010. Oxygen isotope constraints on the structure of the Hawaiian plume. *American Journal of Science*, 310, 683-720, DOI 10.2475/08.2010.01.
- 119 *Ireland, T.J.*, Walker, R.J. and **Garcia, M.O.**, 2009. Highly siderophile element and ^{187}Os isotope systematics of Hawaiian picrites: Implications for parental melt composition and source heterogeneity. *Chemical Geology*, 260, 112–128.
- 118 **Garcia, M.O.**, Ito, E., Eiler, J., 2008. Oxygen isotope evidence for chemical interaction of Kilauea historical magmas with basement rocks. *Journal of Petrology*, 49, 757-769.
- 117 **Garcia, M.O.**, Ito, G., Weis, D. Geist, D., Swinnard, L., Bianco, T., Flinders, A., Taylor, B., Appelgate, B., Blay, C., Hanano, D., Nobre Silva, I., Naumann, T., Maerschalk, C., Harpp, K., Christensen, B., Sciaroni, L, Tagami, T. and Yamasaki, S., 2008. Widespread secondary volcanism around the northern Hawaiian Islands. *EOS Transactions*, 52, 542-543.
- 116 *Marske, J.P.*, **Garcia, M.O.**, Pietruszka, A.P., Rhodes, J.M., Norman, M.D., 2008. Geochemical variations during Kilauea's Puu Oo eruption reveal a fine-scale mixture of mantle heterogeneities within the Hawaiian plume. *Journal of Petrology*, 49, 1297-1318.
- 115 Rooney, J., Wessel, P., Hoeke, R., Weiss, J., Baker, J., Parrish, F., Fletcher, C. Chojnacki, J., **Garcia, M.O.**, Vroom, P., 2008. Geology and geomorphology of coral reefs of the Northwestern Hawaiian Islands. In: Riegl B, Dodge RE (eds.) *Coral Reefs of the World*, Vol 1, Springer, Berlin, pp. 515-567.
- 114 **Garcia, M.O.**, *Haskins, E.H.*, Stolper, E., Baker, M., 2007. Stratigraphy of the Hawaiian Scientific Drilling Project: Anatomy of a Hawaiian volcano. *Geochemistry, Geophysics, Geosystems*, 8, Q02G20, doi:10.1029/2006GC001379.
- 113 Fekiacova, Z., Abouchami, W., Galer, S.J.G., **Garcia, M.O.**, Hofmann, A.W., 2007. Temporal evolution of Ko'olau Volcano: inferences from isotope results on the Ko'olau Scientific Drilling Project (KSDP) and Honolulu Volcanic Series. *Earth and Planetary Science Letters*, 261, 65-83.

- 112 Marske, J. P., Pietruszka, A.J., Weis, D. **Garcia, M.O.**, Rhodes, J.M., 2007. Rapid passage of a small-scale mantle heterogeneity through the melting regions of Kīlauea and Mauna Loa Volcanoes, Hawai'i, Earth and Planetary Science Letters, 259, 34-50.
- 111 Mittelstaedt, E. and **Garcia, M.O.**, 2007. Modeling the sharp compositional interface in the Pu'u Ō'ō magma reservoir, Kilauea volcano, Hawaii. Geochemistry, Geophysics, Geosystems, 8, Q05011, doi:10.1029/2006GC001519.
- 110 Shamberger, P.J. and **Garcia, M.O.**, 2007. Geochemical Modeling of Magma Mixing and Magma Reservoir Volumes During Early Pu'u Ō'o Eruption of Kilauea Volcano. Bulletin of Volcanology, 69, 345-352.
- 109 Sobolev A.V., Hofmann A.W., Kuzmin D.V., Yaxley G.M., Arndt N.T., Chung S-L, Danyushevsky L.V., Elliott T., Frey F.A., **Garcia M.O.**, Gurenko A.A., Kamenetsky V.S., Kerr A.C., Krivolutskaya N.A., Matvienkov V.V., Nikogosian I.K., Rocholl A., Suschevskaya N.M., Teklay M., 2007. Estimating the amount of recycled crust in sources of mantle derived melts. Science, 316, 412-417, doi:10.1126/science. 1138113.
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- 107 **Garcia, M.O.**, Sherman, S.B., Moore, G.F., Acton, G., Goll, R., Popova-Goll, I., Natland, J., 2006. Frequent landslides from Ko'olau Volcano: Results from ODP site 1223. Journal of Volcanology and Geothermal Research, 151, 251-268.
- 106 Pietruszka, A.J., Hauri, E.H., Carlson, R.W., **Garcia, M.O.**, 2006. Remelting of recently depleted mantle within the Hawaiian plume inferred from the ^{226}Ra - ^{230}Th - ^{238}U disequilibria of Pu'u Ō'ō eruption lavas. Earth and Planetary Science Letters, 244, 155-169.
- 105 Wanless, V.D., **Garcia, M.O.**, Rhodes, J.M., Weis, D., Norman, M., 2006. Alkalic lavas from Mauna Loa Volcano, Hawaii. Journal of Volcanology and Geothermal Research, 151, 141-155.
- 104 Wanless, V.D., **Garcia, M.O.**, Rhodes, J.M., Weis, D., Norman, M., Fornari, D. J., Kurz, M., Guillou, H., 2006. Submarine Radial Vents on Mauna Loa Volcano, Hawai'i. Geochemistry, Geophysics, Geosystems (G3), 7, Q05001, doi:10.1029/2005GC001086.
- 103 Bianco, T. Ito, G., Becker, J., **Garcia, M.O.**, 2005. Secondary Hawaiian volcanism formed by flexural arch decompression. Geochemistry, Geophysics, Geosystems, 6, Q08009, doi:10.1029/2005GC000945.
- 102 Boyet, M., **Garcia, M.O.**, Pik, R. and Albarède, F., 2005. A Search for ^{142}Nd Evidence of Primordial Mantle Heterogeneities in Plume Basalts. Geophysical Research Letters, 32, L04306, doi:10.1029/2004GL021873.
- 101 Norman, M., **Garcia, M.O.**, Pietruszka, A.J., 2005. Trace element distribution coefficients for pyroxenes, plagioclase, and olivine in evolved tholeiites from the 1955 eruption of Kilauea Volcano, Hawai'i, and petrogenesis of differentiated rift zone lavas. American Mineralogist, 90, 888-899.
- 100 Ozawa, A., Tagami, T., **Garcia, M.O.**, 2005. Unspiked K-Ar ages of Honolulu rejuvenated and Koolau shield volcanism on Oahu, Hawaii. Earth and Planetary Science Letters, 232, 1-11.
- 99 Haskins, E.H., **Garcia, M.O.**, 2004. Scientific drilling reveals geochemical heterogeneity within the Ko'olau Shield, Hawai'i. Contributions to Mineralogy and Petrology, 147, 162-188.
- 98 Norman M.D., **Garcia M.O.**, and Bennett V.C., 2004. Rhenium and chalcophile elements in basaltic glasses from Ko'olau and Molokai volcanoes: magmatic outgassing and composition of the Hawaiian plume. Geochimica et Cosmochimica Acta, 68, 3761-3777.
- 97 Seaman, C., Sherman, S., **Garcia, M.O.**, and Baker, M., Stolper, E., 2004. Volatiles in submarine glasses from the HSDP2 drill core, Hilo, Hawaii. Geochemistry, Geophysics, Geosystems, 5, Q09G16 DOI 10.1029/2003GC000596.
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- 95 **Garcia, M.O.**, Pietruszka, A.J., Rhodes, J.M., 2003. A Petrologic Perspective of the Summit Magma Chamber of Kīlauea Volcano, Hawai'i. *J. Petrology*, 44, 2313-2339.
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PROFESSIONAL SERVICE

Editorial Board or Associate Editor

American Mineralogist, 2014-2017; Olivine Special Issue
Geochimica et Cosmochimica Acta, Frey Special Issue, 2015-16
Frontiers in Volcanology, 2014-2018
Journal of Geological Research, 2009-2016
GEOLOGY, 2007-2010
 EOS, Volcanology-Geochemistry-Petrology Section, 1995-1997
Journal of Geodynamics, 1990 to 1994;

Journal Volcanology and Geothermal Research, 1980-9

Co-convener (last 10 years)

Rhodes 80th Birthday, Goldschmidt 2018

IAVCEI Special Session on Hawaiian volcanoes, 2017

Geol. Soc. Am. Nat. Conf. Special Session on Magmatic Processes, 2014

Goldschmidt Conference Special Session on Olivine, 2014

Other

PBS News Hour, Hawaii Eruption, 2018

NHK Film on Giant Hawaiian Waves, 2017

PBS News Hour Story on Kilauea Eruption with Miles O'Brien, 2016

Field Trip Leader and Guest Lecturer, Yamagata University Field Trip, 2014

Geology Interpreter, Sierra Club Ecology Expedition for High School Students, 2014

Japan TV Asahi Productions Video "Evolution of Hawaiian Volcanoes", 2013

Scientific Program Comm., Intern. Assoc. Vol., Iceland Conference, 2008

NSF Committee of Visitors, Earth Sciences Division, 2008

Program Chair, *Cities on Volcanoes 3* Conference, Hilo, Hawai'i, 2003

US Science Coordinator for Japan-US Hawai'i Submarine Volcanism Project, 1998-2000

Nova Video "*Hawai'i: Born of Fire*", 1993

Discover Science Video "*Hawai'i*", 1989

U.S.-Costa Rica Joint Volcanology Seminar Organizer, San Jose, Costa Rica, 1982

Volcanological and Other Field Experience

Pu'u 'O'o Eruption, Kilauea Volcano, mapping and lava sampling, 1983-present

U.S. Geol. Survey Big Island Mapping Project, Kohala Volcano, summers of 1983-86

Field work on all Hawaiian islands except Ni'ihau, Galapagos Islands, Cascades (Mt. St. Helens, Mt. Shasta, Crater Lake volcanoes), Chile (Villarrica), Costa Rica (Arenal Volcano), Japan (Oshima Volcano), Iceland, Canary Islands, Azores, Eastern California, Nevada, Wyoming, Idaho, Indonesia, Antarctica, Peru, Philippines, Australia, New Zealand

Marine Experience

Chief Scientist, No. Hawaiian Island JASON2 Expedition, 2007, R/V MOANA WAVE

Petrologist, Hawaii Ocean Bowl, Hawai'i, 2005, R/V MOANA WAVE

Chief Scientist, Mauna Loa JASON II Cruise, Hawai'i, 2002, R/V T. THOMPSON

Chief Scientist, Mauna Loa Cruise, Hawai'i, 1999, R/V MOANA WAVE

Petrologist and Diver, Shinkai 6500 Hawai'i Cruise, 1999, R/V YOKOSUKA

Chief Scientist, PISCES V Loihi-Mauna Loa Cruise, Hawai'i, 1998, R/V K-O-K

Petrologist, Koolau-Molokai Cruise with ROV KAIKO, Hawai'i, 1998, R/V KAIREI

Chief Scientist, PISCES V Loihi Cruise, Hawai'i, 1997, R/V K-O-K

Chief Scientist, Loihi-Mauna Loa Cruise, 1992, M/V LANEY CHOUSET

Igneous Petrologist, ODP Leg 136, Hawai'i, 1991, JOIDES RESOLUTION

Chief Scientist, PISCES V Loihi Cruise, Hawai'i, 1991 R/V KILA

Chief Scientist, PISCES V Mauna Loa Cruise, Hawai'i, 1991, R/V KILA

Chief Scientist, PISCES V Loihi Cruises, Hawai'i, April and Sept., 1990 R/V KILA

Chief Scientist, PISCES V Mahukona Cruise, Hawai'i, 1990 R/V KILA

Chief Scientist, ALVIN Loihi Cruise, Hawai'i, 1987, R/V ATLANTIS II

Chief Scientist, Hawaiian Glasses Cruise, 1983, R/V KANA KEOKI

Petrologist, Line Islands Cruise, 1979, R/V KANA KEOKI

Core Logging Experience

Core Logging Supervisor and Chief Logger, Hawai'i Scientific Drilling Project, 2004-7

Principal Investigator, Koolau Scientific Drilling Program, 2000

Core Logging Supervisor and Chief Logger, Hawai`i Scientific Drilling Project, 1999
Petrologist, Scientific Observation Holes, State of Hawai`i- Final Project Reports, 1998
Chief Logger, Hawai`i Scientific Drilling Project Pilot Hole, 1993
Petrologist, Ocean Drilling Program Leg 136, 1991
Geologist, Mad River Dam Drilling Project, Army Corps of Engineers, 1971

Previous Court and Commission Testimony

Kona Electric Plant Expansion Project, Hawai`i County Land Use Commission, 2005
Wa`ahila Ridge Powerline, Hawai`i State Special Commission, 2003
Wa`ahila Ridge Powerline, Department of Land and Natural Resources Hearing, 2002
Kalihi Drilling Project, Honolulu Water Well Drilling Commission, 2001
Riviera Estates Development, Hawai`i County Land Use Commission, 1985