

**Kenneth W. W. Sims**

Associate Scientist  
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**EDUCATION**

Ph.D., Department of Geology and Geophysics, University of California, Berkeley, 1995  
Thesis Advisor: Donald J. DePaolo

M.Sc., Institute of Meteoritics, Department of Geology, University of New Mexico, 1989  
Thesis Advisors: Klaus Keil, Horton Newsom

B.A., Colorado College, Cum Laude, with Honors in Geology, 1986

**PROFESSIONAL EXPERIENCE****Woods Hole Oceanographic Institution, Woods Hole, Massachusetts**

Associate Scientist with Tenure, Department of Geology and Geophysics (2007–present)  
Associate Scientist, Department of Geology and Geophysics (2002–2007)  
Assistant Scientist, Department of Geology and Geophysics (1997–2002)  
Postdoctoral Scholar, Department of Geology and Geophysics (1995–1997)

**Institut Universitaire Européen de la Mer (IUEM), Brest, France**

Visiting CNRS Fellow (2002)

**Los Alamos National Laboratory, Los Alamos, New Mexico**

Guest Scientist, Isotope and Nuclear Chemistry Group (1996–2005)  
Graduate Research Associate, Isotope Geochemistry Group (1991–1995)  
Graduate Research Associate, Environmental Chemistry Group (1987–1991)

**University of California, Berkeley, California**

Research Assistant, Berkeley Center for Isotope Geochemistry (1991–1995)  
Teaching Assistant, Department of Geology and Geophysics (1991–1994)

**University of New Mexico, Albuquerque, New Mexico**

Research Assistant, Institute of Meteoritics (1987–1989)  
Teaching Assistant, Department of Geology (1987–1989)

**AWARDS and FELLOWSHIPS**

Mellon Independent Study Awards, Woods Hole Oceanographic Institution (1999; 2001; 2006; 2008)  
Postdoctoral Scholar Fellow, Woods Hole Oceanographic Institution (1995–1997)  
IGPP Graduate Study Grant, Institute of Geophysics and Planetary Physics, UC Berkeley (1991–1995)  
Outstanding Graduate Student Instructor, University of California, Berkeley (1992)  
Estwing Outstanding Senior, Colorado College (1986)  
Getty Oil Fellowship, Colorado College (1984–1985)

**RESEARCH INTERESTS**

Application of U-series disequilibria, radiogenic isotope geochemistry, major- and trace- element geochemistry and the principles of physics and chemistry to a variety of fundamental problems in Earth and planetary sciences, including: accretionary and core-formation history and processes in planets; the origin and evolution of the Earth's mantle and continental crust; the generation and transport of basaltic magma; the development and evolution of volcanic systems; magma degassing; volcanic hazard assessment; radiometric methods for dating igneous and sedimentary rocks; geo-archeology; and, isotope hydrology.

## **EDUCATIONAL ACTIVITIES**

### **WHOI Classes and Seminars:**

Solid Earth Geochemistry (2003, 2005, 2007)  
Introduction to Isotope Chemistry (2003-present)  
Introduction to Marine Geology and Geophysics (2002-present)  
WHOI Geochemistry Seminar (1996 – 2003)  
WHOI Geodynamics Seminar “Climate: Forcing, Responses, Geo-engineering” (Spring 2009)

### **WHOI Students and Postdocs Advised/Supervised/Committees:**

#### *Advised*

Chris Waters, Ph.D. Candidate, February 2007  
Lynne Elkins, Ph.D. Candidate, August 2005  
Evelyn Mervine, Second-year student, 2006  
Sylvain Pichat, WHOI Postdoctoral Investigator, 2002-2003  
Mathew Jull, WHOI Postdoctoral Investigator, 1998-2002

#### *Supervised*

Christian Miller, Ph.D. Candidate (Thesis Advisor: Bernhard Puecker-Ehrenrink)  
Matt Jackson, MIT/WHOI (Thesis Advisor: Stan Hart), Ph.D. 2007  
Jeff Standish, MIT/WHOI (Thesis Advisor: Henry Dick), Ph.D. 2005  
Alberto Saal- MIT/WHOI (Thesis Advisor: Stan Hart), Ph.D. 1998

### **WHOI Guest Students, Postdocs and Visiting Scientists:**

Sylvain Pichat, École Normale Supérieure de Lyon (Thesis Advisor: Francis Albarede), Ph.D. 2001  
Ramananda Chakrabarti, University of Rochester, N.Y. (Thesis Advisor: Asish Basu), Ph.D. 2006  
Sarah Aciego, University of California, Berkeley, (Thesis Advisor: Don DePaolo), Ph.D. 2006  
Darren Tolstrup, University of California, Santa Cruz, Ph.D. Candidate (Thesis Advisor: Jim Gill)  
Peter Kelly, New Mexico Institute of Technology (Thesis Advisor: Philip Kyle), M.Sc. 2006  
Chris Wyatt, University of South Carolina, Ph.D. Candidate (Thesis Advisor: Gene Yogodzinski)  
Elizabeth Head, Michigan Tech University, Ph.D. Candidate (Thesis Advisor: Bill Rose, Simon Carn)  
Frank Tepley, University of Illinois, Urbana, visiting Postdoctoral Investigator  
Mark Reagan, University of Iowa, Professor  
Kari Cooper, University of California, Davis, Assistant Professor  
Jennifer Garrison, University of Iowa, Margins Postdoctoral Fellow

### **Teaching Assistantships:**

Theoretical Geochemistry, Igneous Petrology, Geodynamics (University of California, Berkeley)  
Optical Mineralogy, Mineralogy/Crystallography (University of New Mexico)  
Igneous Petrology, Geochemistry, Mineralogy/Crystallography, Intro to Geology (Colorado College)

## **FIELD EXPERIENCE and CRUISE PARTICIPATION**

Nyirangongo, Nyamuragira, DR Congo (2007; *January or June 2009*)  
Mt. Etna, Italy (2004; 2005; 2006; *August 2009*)  
Stromboli, Italy (2006)  
Vulcan Masaya, Nicaragua (2003; 2006)  
9-10°N East Pacific Rise, RV Atlantis, with DSV Alvin (2001; 2004)  
Hekla, Thjeistarykur, Krafla, Iceland (1999; 2003)  
Mt. Erebus, Antarctica (austral summers 1988-89; 1989-90; 1990-91; 1993-94; 1994-95; 2002-03)  
Oman Ophiolite, Oman (1997, *January, 2009*)  
Kilauea, Mauna Loa, Hualalai, Mauna Kea and Haleakala, Hawaii (1992; 1993; 1997; 2008)  
Transantarctic Mountains, Antarctica (austral summers 1991-92; 1995-96)  
NASA Erebus Robotics Development Study, Mt. Erebus, Antarctica (austral summer, 1992-93)  
Jemez Volcanic Field, New Mexico (1985; 1986)

## **INVITED KEYNOTE AND PLENARY TALKS**

### **Titles listed below in “Presented Papers with Published Abstracts”**

Keynote speaker, Goldschmidt, Cologne, Germany, 2007  
Keynote speaker, International Conference on Evolution, Transfer and Releases of Magmas and Volcanic Gases, Academia Sinica, Taipei, 2007  
Keynote speaker, IAVCEI, Guangzhou, China, 2006  
Keynote speaker, Goldschmidt, Moscow Idaho, USA, 2005  
Plenary Lecture, UCSC Keck Laboratory Dedication and Symposium on Isotope Analysis, 2004  
Invited talk, Spring EGS/AGU/EUG, Nice, France, 2003  
Keynote speaker, Goldschmidt, Davos, Switzerland, 2002  
Keynote speaker, Goldschmidt, Oxford, UK, 2000  
Invited AGU talks: 1995; 1996; 1999; 2006; 2007

## **INVITED DEPARTMENT COLLOQUIUM TALKS**

Oxford University, UK (*November, 2008*)  
University of Iowa, IA (*November, 2008*)  
Michigan Tech University (September 2008)  
Boston University, MA (November, 2006)  
Air Force Academy, CO (March, 2000; September, 2006)  
Harvard University, MA (April, 1999; March, 2002; December, 2005)  
Dartmouth College, NH (November, 2004)  
University of Wyoming, WY (April, 2003; Sept 2008)  
University of Mainz, Germany (March, 2003)  
Institut Universitaire Européen de la Mer (IUEM), Brest, France (October, 2002)  
University of Bristol, UK (October, 2001; *November 2008*)  
École Normale Supérieure, Lyon, France (November, 1999; March, 2001)  
Massachusetts Institute of Technology, MA (April, 2001; November 2005)  
Colorado College, CO (September, 1996; October, 2001)  
Brown University, RI (March, 1999)  
University of Rochester, NY (March, 1999)  
Institute of Geophysics and Planetary Physics, Los Alamos, NM (March, 1998; 2002)  
Department of Terrestrial Magnetism, Carnegie, Washington DC (October, 1997)  
New Mexico Institute of Technology and Mining, NM (April, 1997)  
University of Hawaii, HI (April, 1993; March, 1997)  
University of Maine, ME (November, 1996)  
University of Rhode Island, RI (October, 1996; October 2001)  
University of Florida, FL (April, 1996)  
Florida State University, FL (April, 1996)  
Hawaiian Volcano Observatory, HI (April, 1993; 1994)  
University of Arizona, AZ (February, 1993)

## **PROFESSIONAL ACTIVITIES**

WHOI Scientific Staff Executive Committee (2007-present)  
WHOI Radiation Safety Committee (2004-present)  
WHOI Geology and Geophysics Safety Committee (2002-present)  
WHOI ICPMS/PIMMS Oversight Committee (2001–present; currently “Committee Chair”)  
WHOI Post-Doctoral Mentoring Committee (2006-present)  
WHOI Geology and Geophysics, Internal Merit Review Committee (2002; 2003)  
WHOI Geology and Geophysics “Space Committee” (2004, 2008)  
Convecting Mantle Symposium, Goldschmidt Intern. Program Committee, Melbourne, AUS, 2006  
Session Organizer and Convener, Goldschmidt 2006, “*Integrated Studies of MORB Petrogenesis: Sources, Melting Processes, and Timescales.*”  
Participant RIDGE Y2K Implementation Plan Workshop, Albuquerque, NM, 2002  
Invited Discussion Leader RIDGE Y2K Educational Workshop, Long Beach, CA, 2002  
Session Chair, Fall AGU, 1997, “*Volcanology II: Timing of Magmatic Processes.*”

Session Organizer and Convener, Goldschmidt, 1999, *"Mantle Melting: Sources, Timescales, Melt Migration and Melt-solid Interaction."*  
Session Chair, MELT Workshop, 1996

### **PROFESSIONAL AFFILIATIONS**

Geological Society of America, Member (2005-present)  
American Geophysical Union, Life Member (1994-present)  
IAVCEI, Life Member (2007-present)

### **COMMUNITY SERVICE**

Rocky Mountain Field Institute, Member of the Board of Directors (1996-present) <http://www.rmfi.org/>  
Ritt Kellogg Memorial Fund, Colorado College, Advisory Committee (1999- present; Chair, 2000-2007)  
<http://www.rittkelloggfund.org>  
Big Brothers & Big Sisters of Cape Cod and the Islands, Member of the Board of Directors (1996-2001)

### **PUBLIC OUTREACH, EDUCATION AND SERVICE**

Featured scientist in children's book "Lava Scientists: Careers on the Edge of Volcanoes." Enslow Publishers Inc., 2009 (author Sara Latta) <http://www.saralatta.com/>  
New Scientist, July 2008, "Into the Mouth of Hell."  
Oceanus, Fall, 2006, *"Into the 'Mouth of Hell': A journey into the crater of an active volcano."*  
<http://www.whoi.edu/oceanus/viewArticle.do?id=13350&sectionid=1000>  
Popular Mechanics, SA, November, 2006, *"Into the 'Mouth of Hell'."*  
National Geographic Magazine, October, 2004, *"Sniffing for Clues to the Dinosaurs Demise."*  
Miracle Continent Antarctica- Mt Erebus. Initially Broadcast on NHK Public Television, Japan, 2001  
Senior Citizen and Elementary, Middle and High School Lectures on Volcanology and Geology  
High School Science Fair Judge, Falmouth MA, Berkeley CA, and Oakland CA

### **CORORATE AFFILIATIONS**

Opticad Corporation, Owner, 2008-present <http://www.opticad.com/apps.html>  
Opticad Corporation, Member of the Board of Directors (1990-present)

**For CLIMBING RESUME and OUTDOOR EDUCATION AND GUIDING EXPERIENCE see:**  
<http://www.whoi.edu/page.do?pid=26841>

## PUBLICATIONS

### Refereed Journal And Book Articles

- 38) Waters, C.L. K. W.W. Sims, M. R. Perfit, J. Blichert-Toft, and J. Blusztajn (submitted). “Linking volcanic resurfacing and magmatic cycling: evidence from isotopically enriched basalts at 9-10°N East Pacific Rise.” Submitted to *Geochim. Cosmochim. Acta*.
- 37) Standish, J.J. and K.W.W. Sims (submitted). “*Young Volcanism and Rift Valley Construction at an Ultraslow Spreading Ridge.*” Submitted to *Nature Geoscience*.
- 36) Kelly, P.J., P.R. Kyle, N.W. Dunbar, and K.W.W. Sims (2008). “*Geochemistry and mineralogy of the phonolite lava lake, Mount Erebus volcano, Antarctica: 1972 – 2004 and comparison with older lavas.*” Invited article submitted to special volume on Mt Erebus in *Journal of Volcanology and Geothermal Research* (In press).
- 35) Sims, K.W.W., J. Blichert-Toft, P.R. Kyle, S. Pichat, J. Bluzstajn, P.J. Kelly, L.A. Ball, and G. D. Layne (2008). “*A Sr, Nd, Hf, and Pb isotope perspective on the genesis and long-term evolution of alkaline magmas from Erebus volcano, Antarctica.*” Invited article for special volume on Mt Erebus in *Journal of Volcanology and Geothermal Research* (In press).
- 34) Reagan, M.K., S. Turner, M.K. Legg, K.W.W. Sims and V.L. Hards (2008). “*<sup>238</sup>U and <sup>232</sup>Th decay series constraints on the timescales of crystal fractionation to produce the phonolite erupted in 2004 near Tristan da Cunha, South Atlantic.*” *Geochim. Cosmochim. Acta*, 72, 17, 4367-4378.
- 33) Sims, K.W.W., S.R. Hart, M.K. Reagan, J. Blusztajn, H. Staudigel, R.A. Sohn, G.D. Layne, L.A. Ball and J. Andrews (2008). “*<sup>238</sup>U-<sup>230</sup>Th-<sup>226</sup>Ra-<sup>210</sup>Pb-<sup>210</sup>Po, <sup>232</sup>Th-<sup>228</sup>Ra and <sup>235</sup>U-<sup>231</sup>Pa constraints on the ages and petrogenesis of Vailulu and Malumalu Lavas, Samoa.*” *Geochemistry, Geophysics and Geosystems*, 9, Q04003, doi:10.1029/2007GC001651
- 32) Sims, K.W.W., J. Gill, A. Dossetto, D. Hoffmann, C.C. Lundstrom, R. Williams, L.A. Ball, D. Tollstrup, S.P. Turner, J. Prytulak, J. Glessner, J.J. Standish, and T. Elliott (2008). “*An inter-laboratory assessment of the Th Isotopic Composition of Synthetic and Rock standards.*” *Geostandards and Analytical Research*, 32, 1, 65-91.
- 31) Elkins, L., G.A. Gaetani, and K.W.W. Sims (2008). “*Partitioning of U and Th during garnet pyroxenite melting: constraints on sources of alkaline ocean island basalts.*” *Earth and Planetary Science Letters*, 265, 270-286, doi:10.1016/j.epsl.2007.10.034.
- 30) Ball, L.A., K.W.W. Sims, and J. Schwieters (2008). “*Measurement of <sup>234</sup>U/<sup>238</sup>U and <sup>230</sup>Th/<sup>232</sup>Th in volcanic rocks using the Neptune PIMMS.*” *Journal Analytical Atomic Spectrometry*, 23, 173-180. doi: 10.1039/b703193a
- 29) Turner, S.P., K.W.W. Sims, and M.K. Reagan (2007). “*A <sup>210</sup>Pb-<sup>226</sup>Ra-<sup>230</sup>Th-<sup>238</sup>U study of Klyuchevskoy and Bezymianny volcanoes, Kamchatka.*” *Geochimica Cosmochimica Acta*, 71, 4771-4785. doi: 10.1016/j.gca.2007.08.006.
- 28) Giammanco, K.W.W. Sims and M. Neri (2007). “*Shallow rock stresses and gas transport at Mt. Etna (Italy) monitored through <sup>220</sup>Rn, <sup>222</sup>Rn and soil CO<sub>2</sub> emissions in soil and fumaroles.*” *Geochemistry, Geophysics and Geosystems*, 8, Q10001, doi:1029/2007GC00164
- 27) Moune, S., F. Faure, P.-J. Gauthier, and K.W.W. Sims (2007). “*Pele’s hairs and tears: natural probe of volcanic plume.*” *Journal of Volcanology and Geothermal Research*, 164, 244-253, doi:10.1016/j.jvolgeores.2007.05.07.

- 26) Sims, K.W.W., R.P. Ackert, Jr., F. Ramos, R.A. Sohn, M.T. Murrell, and D. J. DePaolo (2007). "Determining eruption ages and erosion rates of Quaternary basaltic volcanism from combined U-series disequilibria and cosmogenic exposure ages." *Geology*, vol 35, pp 471-474, doi:10.1130/G23381A.1.
- 25) Aciego, S.M., D.J. DePaolo, B.M. Kennedy, M.P. Lamb, K.W.W. Sims, and W. Dietrich (2007). "Combining [<sup>3</sup>He] cosmogenic dating with U-Th/He eruption ages using olivine in basalt." *Earth and Planetary Science Letters*, vol 254, number 3-4, pp 288-302, doi: 10.1016/j.epsl.2006.11.039.
- 24) Sims, K.W.W. and S. R. Hart (2006). "Comparison of Th, Sr, Nd and Pb Isotopes in Oceanic Basalts: Implications for Mantle Heterogeneity and Magma Genesis." *Earth and Planetary Science Letters*, vol 245, pp 743-761, doi: 10.1016/j.epsl.2006.02.030.
- 23) Sohn, R.A. and K.W.W. Sims (2005). "Bending as a mechanism for triggering off-axis volcanism on the East Pacific Rise." *Geology*, vol 33, number 2, 93-96, doi: 10.1130/G21116.1.
- 22) Pichat, S., K.W.W. Sims, R. François, J.F. McManus, S. Brown-Legger, and F. Albarède (2004). "Lower export production during glacial periods in the equatorial Pacific as derived from (<sup>231</sup>Pa/<sup>230</sup>Th) measurements in deep-sea sediments." *Paleoceanography*, vol 19, PA 4023.
- 21) Drakos, P., K.W.W. Sims, J. Riesterer, J. Blusztajn, and J. Lazarus (2004). "Chemical and Isotopic Constraints On Source-Waters and Connectivity Of Basin-Fill Aquifers in the Southern San Luis Basin, New Mexico." Invited, peer reviewed article for New Mexico Geological Society Guidebook, *Geology of the Taos Region*, pp 405-414.
- 20) Tepley, F. J. III, C.C. Lundstrom, K.W.W. Sims, and R. Hékinian (2004). "U-series Disequilibria in MORB From the Garrett Transform and Implications for Mantle Melting." *Earth and Planetary Science Letters*, vol 223, number 1-2, pp 79-97.
- 19) Sims, K.W.W., J. Blichert-Toft, D.J. Fornari, M.R. Perfit, S.J. Goldstein, P. Johnson, D.J. DePaolo, and P. Michaels (2003). "Aberrant Youth: Chemical and isotopic constraints on the young off-axis lavas of the East Pacific Rise." *Geochemistry, Geophysics, and Geosystems*, vol 4, number 10, p 8621, doi:10.1029/2002GC000443.
- 18) Reagan, M.K., K.W.W. Sims, J. Enrich, R.B. Thomas, H. Cheng, R.L. Edwards, G.D. Layne, and L.A. Ball (2003). "Old rhyolite progeny from young mafic parents in North American continental arcs." *Journal of Petrology*, vol 44, number 9, pp 1703-1726.
- 17) Bourdon, B. and K.W.W. Sims (2003). "U-series constraints on intraplate magmatism." In *Uranium Series Geochemistry*, eds. B. Bourdon, G.M. Henderson, C.C. Lundstrom and S.P. Turner; *Reviews in Mineralogy and Geochemistry*, vol 52, pp 215-253.
- 16) Cooper, K., S.J. Goldstein, K.W.W. Sims, and M.T. Murrell (2003). "Uranium-Series Chronology of Gorda Ridge Volcanism: New evidence from the 1996 Eruption." *Earth and Planetary Science Letters*, vol 206, number 3, pp 459-475, doi:10.1016/S0012-821X(02)01083-X.
- 15) Jull, M., P. Kelemen, and K.W.W. Sims (2002). "Melt migration and uranium series disequilibria: the combined effect of porous and conduit flow." *Geochimica et Cosmochimica Acta*, vol 66, number 23, pp 4133-4148.
- 14) Sims, K.W.W., S.J. Goldstein, J. Blichert-Toft, M.R. Perfit, P. Kelemen, D.J. Fornari, P. Michael, M.T. Murrell, S.R. Hart, D.J. DePaolo, G.D. Layne, and M. Jull (2002). "Chemical and isotopic constraints on the generation and transport of melt beneath the East Pacific Rise." *Geochimica et Cosmochimica Acta*, vol 66, number 19, pp 3481-3504, doi:10.1016/S0016-7037(02)00909-2.

- 13) Choi, M.S., R. Francois, K.W.W. Sims, M.P. Bacon, S. Legger-Brown, A.P. Fler, L.A. Ball, D. Schneider and S. Pichat (2001). “*Rapid determination of  $^{230}\text{Th}$  and  $^{231}\text{Pa}$  in seawater by Inductively coupled plasma mass spectrometry.*” *Marine Chemistry*, vol 76, pp 99-112.
- 12) Layne, G.D. and K.W.W. Sims (2000). “*Analysis of  $^{232}\text{Th}/^{230}\text{Th}$  in volcanic rocks by Secondary Ionization Mass Spectrometry.*” *International Journal of Mass Spectrometry*, vol 203, number 1-3, pp 187-198.
- 11) Hart, S.R., H. Staudigel, A.A.P. Koppers, J. Blusztajn, E.T Baker, R. Workman, M. Jackson, E. Hauri, K.W.W. Sims, D.J. Fornari, A. Saal and S. Lyons (2000). “*Vailulu’u Undersea Volcano: The New Samoa.*” *Geochemistry, Geophysics, and Geosystems*, vol 1, Paper number 2000GC000108.
- 10) Sims, K.W.W., M.T. Murrell, D.J. DePaolo, W.S. Baldrige, S.J. Goldstein, D. Clague and M. Jull (1999). “*Porosity of the melting zone and variations in the solid mantle upwelling rate beneath Hawaii: Inferences from  $^{238}\text{U}$ - $^{230}\text{Th}$ - $^{226}\text{Ra}$  and  $^{235}\text{U}$ - $^{231}\text{Pa}$  disequilibria.*” *Geochimica et Cosmochimica Acta*, vol 63, number 23, pp 4119-4138, doi: 10.1016/S0016-7037(99)00313-0 (*invited paper for a Special volume in honor of Claude Allegre*).
- 9) Stracke, A., V.J.M. Salters and K.W.W. Sims (1999). “*Assessing the role of pyroxenite in the source of Hawaiian basalts: Hf-Nd-Th isotope evidence.*” *Geochemistry, Geophysics, and Geosystems*, vol 1, Paper number 1999GC0000013.
- 8) Sims, K.W.W. and D.J. DePaolo (1997). “*Inferences about mantle magma sources from incompatible element concentration ratios in oceanic basalts.*” *Geochimica et Cosmochimica Acta*, vol 61, number 4, pp 765-784, doi: 10.1016/S0016-7037(96)00372-9.
- 7) Newsom, H.E., K.W.W. Sims, P.D. Noll, W.L. Jaeger, S.A. Maehr, and T.B. Bassera (1996). “*The depletion of W in the bulk-silicate Earth: constraints on core formation.*” *Geochimica et Cosmochimica Acta*, vol 60, number 7, pp 1155-1169.
- 6) Sims, K.W.W., D.J. DePaolo, M.T. Murrell, W.S. Baldrige, S.J. Goldstein, and D. Clague (1995). “*Mechanisms of magma generation beneath Hawaii and Mid-Ocean ridges: U-Th and Sm-Nd isotopic evidence.*” *Science*, vol 267, pp 508-512, doi: 10.1126/science.267.5197.508.
- 5) Newsom, H.E. and K.W.W. Sims (1991). “*Core formation during early accretion of the Earth.*” *Science*, vol 252, pp 926-933, doi: 10.1126/science.252.5008.926.
- 4) Sims, K.W.W., and E.S. Gladney (1991). “*Determination of As, Sb, W and Mo in silicate matrices by epithermal neutron activation and inorganic ion exchange.*” *Analytica Chimica Acta*, vol 251, pp 297-303.
- 3) Sims, K.W.W., H.E. Newsom, and E.S. Gladney (1990). “*Chemical fractionation during formation of the Earth’s core and continental crust: Clues from As, Sb, W and Mo.*” In *Origin of the Earth*, J. Jones and H.E. Newsom (eds.) New York : Oxford University Press; Houston, Lunar and Planetary Institute. 1990, ISBN 0-19-506619-7.
- 2) Sims, K.W.W., E.S. Gladney, C.C. Lundstrom, and N.W. Bower (1988). “*Elemental concentrations in Japanese silicate rock standards: a comparison with the literature.*” *Geostandards Newsletter*, vol 12, pp 379-389.
- 1) Cohen, A.S., D.S. Ferguson, P.M. Gram, S.L. Hubler, and K.W.W. Sims (1986). “*The Distribution of Coarse Grained Sediments in Modern Lake Turkana, Kenya: Implications for Clastic Sedimentation Models of Rift Lakes.*” In *Sedimentation in the African Rift Systems*, L.E. Frostik (ed.), Geologic Society of London, Special Publication 23, pp 212-223.

## Non-Peer Reviewed Publications And Consulting Reports From Ground Water Contracts

Drakos, P., J. Lazarus, J. Riesterer, K.W.W. Sims, and M. Hodgins (2006). “*Subsurface Stratigraphy, the Effects of Faults on Groundwater Flow, Chemical and Isotopic Constraints on Source-Waters and Connectivity of Basin-Fill Aquifers in the Southern San Luis Basin, New Mexico.*” Report of the 2006 Ground Water Summit, National Ground Water Association.

Sims, K.W.W. (2006). “*Geology of New Mexico.*” In Rock Climbing New Mexico by Dennis R. Jackson, Falcon Press Co., Inc, Helena Montana, ISBN 10:00-7627-3132-9.

Sims, K.W.W., and C. Barlow (2005). Various new routes on Huamashraju, The American Alpine Journal, “The World’s Most Significant Climbs”, 79, vol 47, pp 264-265. (Description of the first ascent of the West Face of Huamashraju (5,434 meters)).

Drakos, P., J. Lazarus, J. Riesterer, M. Hodgins and K.W.W. Sims (2005). “*Structural controls on ground water flow and recharge into the southern San Luis Basin near Taos, NM.*” USGS field report on San Luis basin Hydrology.

Drakos, P., J. Riesterer, J. Lazarus, and K.W.W. Sims (2003). “*Evaluation of Pumping Effects at Zuni Salt Lake in the Atarque Sandstone Aquifer from Fence Lake Mine.*” Unpublished Glorieta Geoscience, Inc. consulting report, 19 p. plus Appendices.

Sims, K.W.W. (1996). “*Geology of New Mexico and Texas.*” In Rock Climbing New Mexico and Texas by Dennis R. Jackson, Falcon Press Co., Inc, Helena Montana, ISBN 1-56044-483-5.

## Presented Papers With Published Abstracts (\* Invited And Keynote Talks)

74) Sims, K.W.W., B. Peucker-Ehrenbrink, T. Mather, D. Pyle, P.-J. Gauthier, A. Aiuppa (2008). “Importance of rhenium and noble metal volcanic fluxes in the global geochemical cycles.” IAVCEI 2008 General Assembly.

73) Mervine, E. M., K.W.W. Sims, J. Blichert-Toft, J. Blusztajn, and M. Jull (2008). “Geochemical Evidence for a Transient Change in Mantle Melting from the Deglaciation of Iceland.” IAVCEI 2008 General Assembly.

72) Elkins, L.J., K.W.W. Sims, J. Prytulak, J. Blichert-Toft, N. Mattielli, T. Elliott, J. Blusztajn, S. Fretzdorff, C. Devey, S. Humphris, P. Kelemen, and J.-G. Schilling (2008). “Insights into melting processes beneath slow-spreading arctic ridges from U, Th, Ra, and Pa isotopes.” IAVCEI Conference Abstracts, Reykjavik, Iceland 2008 1125.

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## RESEARCH GRANTS

### National Science Foundation

K.W.W. Sims, S. Humphris, and M. Tivey, “U- and Th- decay series dating of hydrothermal deposits.” Submitted to NSF OCE, August 15, 2008, \$537,028.

K.W.W. Sims, “Collaborative Research: A  $^{210}\text{Pb}$  paradox?” NSF-EAR 083887800, \$145,900 (in collaboration with Mark Reagan).

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K.W.W. Sims, “A slow spreading ridge:  $^{238}\text{U}$  and  $^{230}\text{Th}$  excesses in Kolbeinsey Ridge basalts.” NSF OCE-0422278, \$290,687.

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K.W.W. Sims and M. Charette, “SGER: Melt Generation and Transport during Basalt Petrogenesis: Constraints from Measurements of  $^{227}\text{Ac}$ - $^{231}\text{Pa}$  Activity Ratios.” NSF OCE-0228677, \$57,006.

K.W.W. Sims, and D.J. Fornari, “Spatial and Temporal Variations in Mid-Ocean Ridge Basalt Geochemistry along and across the East Pacific Rise.” NSF OCE-0137325, \$179,630.

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K.W.W. Sims, S.R. Hart, G.E. Ravizza, B. Peucker-Ehrenbrink and M. Kurz, “Acquisition of a MC ICPMS for the Woods Hole Oceanographic Institution Dedicated to the Study of Earth and Ocean Sciences.” NSF OCE-0079733, \$547,011.

K.W.W. Sims, “Collaborative Research: U-Series Constraints on Rhyolite Genesis at Medicine Lake Volcano.” NSF EAR-0000886, \$41,262 (in collaboration with M. Reagan).

K.W.W. Sims, “Collaborative Research: A Coupled Geodynamic/Geochemical Study of the Hawaiian Plume.” NSF EAR-0001924, \$65,000 (in collaboration with D.J. DePaolo, J. Bryce, M. Jull and N. Ribe).

K.W.W. Sims, “Melt Generation and Transport Beneath Hawaii: Characterizing the Zero Age Plume.” NSF EAR-9909473, \$148,004.

K.W.W. Sims, S.R. Hart and D.J. Fornari, “U-Series Analyses of Young Lavas from the East Pacific Rise 9°48'N to 9°52'N: Using Lavas from the 1991 Eruption as a Baseline to Constrain the Nature and Timing of MORB Petrogenesis.” NSF OCE-9730967, \$180,890.

K.W.W. Sims, F. Albarede, and R. Francois, "U.S. (WHOI) -France (École Normale Supérieure) Cooperative Research: The Actinides Proxys of Nutrients and the Tuning of Thermohaline Circulation during the Last Glacial Maximum." NSF INT-9726941, \$48,000.

## WHOI

K.W.W. Sims, “Dating terrestrial carbonates in the Samail Ophiolite with implications for carbon sequestration.” WHOI Mellon Award, \$47,728.

M. Tivey and K.W.W. Sims, “Constraining the Age and Evolution of an Axial Volcanic Ridge on the Mid Atlantic Ridge.” Deep Ocean Exploration Institute, \$54,294.

K.W.W. Sims and O. Rouxel, “Using Nickel as a New Isotope Tracer of Oceanic Processes.” WHOI Mellon Award, \$48,875.

K.W.W. Sims and M. Jull, “Investigation of an Exposed Vertical Lava Sequence in a Post-Glacial Shield Volcano in the Northern Rift Zone of Iceland.” WHOI Mellon Award, \$30,000.

K.W.W. Sims and M. Charette, “Melt Generation and Transport during Basalt Petrogenesis: Constraints from Measurements of  $^{227}\text{Ac}$ - $^{231}\text{Pa}$  Activity Ratios.” WHOI Mellon Award, \$29,830.

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