

Katherine A. Kelley



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Educational Background

Ph.D., Earth Sciences, Boston University, 2004

B.A., Geology, Macalester College, 1997

Areas of Specialization

My research presently focuses on three primary themes: 1) Material cycling at convergent margins; sediment and altered oceanic crust inputs vs. arc volcanic outputs 2) Magmatic volatile budgets and the effects of H₂O on mantle melting 3) The solid earth carbon cycle and stable isotope tracers of subduction processes. I am actively building a new, state-of-the-art laser-ablation ICP-MS lab at GSO, to be used for the analysis of trace elements and isotope ratios in silicate melt inclusions, minerals, and submarine glasses.

Recent Presentations

Kelley, K.A., Plank, T. (INVITED), Distribution of water in the mantle wedge of subduction zones. 15th Annual Goldschmidt Conference (2005)

Kelley, K.A., Hauri, E.H., Sisson, T.W. (INVITED), Water, decompression, and mantle melting at Galunggung, Indonesia. 15th Annual Goldschmidt Conference (2005)

The role of water during mantle melting and mass transfer at subduction zones. Invited lecture, Princeton University (2005)

Kelley, K.A., Hauri, E.H., Grönvold, K., McKenzie, D., Carbon isotopic evidence for two-component mixing in the Iceland mantle source. 14th Annual Goldschmidt Conference (2004)

Kelley, K.A., Plank, T., Newman, S., Stolper, E., Grove, T.L., Parman, S., and Hauri, E., Mantle Melting as a Function of Water Content in Arcs. American Geophysical Union (2003)

Recent Publications

Mantle melting as a function of water content beneath back-arc basins

Understanding cratonic flood basalts

Subduction Cycling of U, Th, and Pb

Composition of altered oceanic crust at ODP Sites 801 and 1149

Probing the Pacific's oldest MORB glass: mantle chemistry and melting conditions during the birth of the Pacific Plate