



ELIZABETH KING

Oregon State University, College of Earth, Ocean, and Atmospheric Sciences

Degree:

B.S. Marine Science and Earth Science, Boston University

Advisor:

Julie Pett-Ridge, Ph.D.

Scholar Award Donor:

Caron and Larry Ogg

About the Scholar:

Elizabeth's seeks to understand the biogeochemical processes of elements by using non-traditional stable isotopes as a way to tease apart the various ways that soil is formed. Currently, she is using molybdenum isotopes as a tracer of weathering processes and soil formation on Hawaiian soils. Chemical weathering processes free many elements that are bound up in terrestrial rocks. Once dissolved, these elements are free to cycle through soils, the atmosphere, water, and biology until they are eventually buried. A changing global climate may alter the partitioning of elements into these reservoirs and affect processes such as burial rates and biological uptake. Understanding lithosphere-hydrosphere dynamics and their sensitivity to paleoclimate conditions is key to a comprehensive understanding of the effects of climate change.

Benefits to Society:

Using non-traditional stable isotopes is a way to tease apart the processes that lead to soil formation, especially the linkages between terrestrial and marine environments and how processes on land can ultimately determine both what is delivered to the ocean and the kinetics of these transfers. Chemical weathering processes free many elements that are bound up in terrestrial rocks. Once dissolved, these elements are free to cycle through soils, the atmosphere, water, and biology until they are eventually buried. A changing global climate may alter the partitioning of elements into these reservoirs and affect processes such as burial rates and biological uptake. Understanding lithosphere-hydrosphere dynamics and their sensitivity to paleoclimate conditions is key to a comprehensive understanding of the effects of climate change.

Awards and Honors:

Summa cum laude, Boston University

Boston University Marine Program Award for Excellence

Distinguished Graduate in Marine Science, Department of Biology, Boston University

Publications and Posters:

King, E. and Pett-Ridge, J. (2014) *Pedogenic molybdenum fractionation*, Hawaii Ecosystems Project Annual Meeting, Hilo, HI.

King, E., Thompson, A., Hodges, C., and Pett-Ridge, J. (2014) *Investigating molybdenum availability across a Hawaiian climate gradient*, Goldschmidt Conferences, Sacramento, CA.

King, E. (2014) *Understanding weathering processes across spatial and temporal scales*, CEOAS Seminar Series, Corvallis, OR.

King, E. and Pett-Ridge, J. (2013) *Investigating molybdenum fractionation across a Maui climate gradient*, Hawaii Ecosystems Project Annual Meeting, Hilo, HI.