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Research Soil Scientist

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Education

- Ph.D.** Ecology and Evolutionary Biology University of Colorado, Boulder, CO 2006
Committee Chair: Dr. Alan Townsend. Dissertation Title: Influence of tectonics and atmospheric deposition on nutrient sources to tropical forests of the Osa Peninsula, Costa Rica.
- B.S.** Biology, Virginia Tech, Blacksburg, VA 1996

Professional Experience

Research Soil Scientist , U.S. Geological Survey	10/2010-present
Adjunct Professor , Dept. of Geography, University of Denver	9/2012-present
Mendenhall Postdoctoral Fellow , U.S. Geological Survey	10/2008-10/2010
Post-doctoral Researcher , University of California, Santa Barbara	8/2006-10/2008
Biologist , Stable Isotope Laboratory, U.S. Geological Survey	4/2004-6/2006
Physical Science Technician , Stable Isotope Laboratory, U.S. Geological Survey	1/2001-4/2004
Contractor , Stable Isotope Laboratory, U.S. Geological Survey	5/1999-1/2001
Technician , Center for Environmental and Hazardous Materials Studies, Virginia Tech	9/1994-5/1996

Peer Reviewed Publications

Bern C.R., Breit, G.N., Healy, R.W., Zupancic, J., Hammack. R. 2013. Deep subsurface drip irrigation using coal-bed sodic water: Part I. Water and solute movement. *Agricultural Water Management*. doi:10.1016/j.agwat.2012.11.014

Bern C.R., Breit, G.N., Healy, R.W., Zupancic, J. 2013. Deep subsurface drip irrigation using coal-bed sodic water: Part II. Geochemistry. *Agricultural Water Management*. doi:10.1016/j.agwat.2012.11.013

Bern, C.R., Chadwick, O.A., Hartshorn, A.S., Khomo, L.M., Chorover, J. 2011. A mass-balance model to separate and quantify colloidal and solute redistributions in soil. *Chemical Geology*. doi:10.1016/j.chemgeo.2011.01.014

Bern, C.R. and White, A.F. 2011. A model for assessing, quantifying, and correcting for index element mobility in weathering studies. *Applied Geochemistry*. doi:10.1016/j.apgeochem.2011.03.016

Engle, M.A., **Bern, C.R.**, Healy, R.W., Sams, J.I., Zupancic, J.W., Schroeder, K.T. 2011. Tracking solutes and water from subsurface drip irrigation application of coalbed methane produced waters, Powder River Basin, Wyoming. *Environmental Geochemistry*. doi:10.1306/eg.03031111004

Bern, C.R. and Chadwick, O.A. 2010. Quantifying colloid mass redistribution in soils and other physical mass transfers. In Birkle, P. and Torres-Alvarado, I.S. (eds.) *Water-Rock Interaction*. pp. 765-768.

Bern, C.R., Brzezinski, M.A. Beucher, C., Ziegler, K., and Chadwick, O.A. 2010. Weathering, dust and biocycling effects on soil silicon isotope ratios. *Geochimica et Cosmochimica Acta*. doi:10.1016/j.gca.2009.10.046

Wanty,R.B., Verplanck, P.L., **Bern C.R.**, SanJuan, C., deWitt, E.H. Klein, T.L. Fey, D. Schmidt, T.S. Church, S.E.. Weathering rates in alpine catchments of central Colorado, USA. . In Birkle, P. and Torres-Alvarado, I.S. (eds.) Water-Rock Interaction. pp. 273-276

Bern, C. R. 2009. Soil chemistry in lithologically diverse datasets: The quartz dilution effect. *Applied Geochemistry*, 24: 1429-1437, doi: 10.1016/j.apgeochem.2009.04.013

Chadwick, O.A., Derry, L.A., **Bern, C.R.**, Vitousek, P.M. 2009. Changing sources of strontium to soils and ecosystems across the Hawaiian Islands. *Chemical Geology*, 267: 64-76, doi:10.1016/j.chemgeo.2009.01.009

Bern, C. R., and A. R. Townsend. 2008. Accumulation of atmospheric sulfur in some Costa Rican soils, *J. Geophys. Res.*, 113, G03001, doi:10.1029/2008JG000692

Stegall, V. K., S. D. Farley, L. D. Rea, K. W. Pitcher, R. O. Rye, C. L. Kester, **C. R. Bern**. 2008. The discrimination of carbon and nitrogen isotopes from milk to serum and vibrissae in Alaska Steller sea lions (*Eumetopias jubatus*). *Can. J. Zool.* 86(1): 17-23.

Bern, C. R., S. Porder and A. R. Townsend. 2007. Erosion and landscape development decouple strontium and sulfur in the transition to dominance by atmospheric inputs. *Geoderma* 142: 274-284, doi:10.1016/j.geoderma.2007.08.016

Bern, C. R., A. R. Townsend, and G. L. Farmer. 2005. Dominance of parent-material strontium in a tropical forest on highly weathered soils. *Ecology* 86(3): 626-632. doi:10.1890/03-0766

Farmer, A. H., M. Abril, M. Fernandez, J. Torres, C. Kester, and **C. Bern**. 2004. Using stable isotopes to associate migratory shorebirds with their wintering locations in Argentina. *Ornitologia Neotropical* 15: 337-384.

Iko, W. M., C. L. Kester, **C. R. Bern**, R. C. Stendell, and R. O. Rye. 2003. Isotope variations in white-tailed kites from various habitats in California: possible limitations in assessing prey utilization and population dynamics. *Isotopes Environ. Health Stud.* 39(2): 159-167.

Farmer, A. H., R. Rye, G. Landis, **C. Bern**, C. Kester, and I. Ridley. 2003. Tracing the pathways of Neotropical migratory shorebirds using stable isotopes: A pilot study. *Isotopes Environ. Health Stud.* 39(2): 169-177.

Publications in Review

Khomo, L., Chadwick, O.A., **Bern, C.R.**, Hartshorn, A.S., Rogers, K.H. *In review* Chemical transfers along slowly eroding catenas developed on granitic cratons in southern Africa. *Geoderma*.