

### *Curriculum vitae*

## Suzanne Prestrud Anderson

Department of Geological Sciences and Institute of Arctic and Alpine Research (INSTAAR)

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### Education

Ph.D., Geology, University of California, Berkeley 1995

M.S., Geology, University of Washington 1987

B.S. cum laude, Chemistry, University of Puget Sound, Tacoma, Washington 1979

### Positions held

*Professor*, Dept. of Geological Sciences, University of Colorado, Boulder 2019-present

*Fellow*, Institute of Arctic and Alpine Research, University of Colorado, Boulder 2009-present

*Assistant to Associate to Full Professor*, Dept. of Geography, University of Colorado, Boulder 2004-2018

*Visiting Professor*, Laboratory of HYdrology and GEOchemistry of Strasbourg (LHYGES)  
University of Strasbourg, France 2012

*Research Associate*, Institute of Arctic and Alpine Research, University of Colorado, Boulder 2003-2009

*Assistant Research Scientist*, Tectonics/CSIDE, UC Santa Cruz 1997-2003

*NSF Earth Sciences Post-doctoral Fellow*, University of Wyoming 1995-1997

### Honors and Awards

*Fellow*, American Geophysical Union 2021

*GK Gilbert Award in Surface Processes*, American Geophysical Union 2020

*Fellow*, Geological Society of America 2019

*Certificate of Recognition*, International Association of GeoChemistry (IAGC) 2012

*NASA Graduate Student Fellowship in Global Change Research* 1991-1994

### Professional Memberships

American Association for the Advancement of Science, American Geophysical Union, Geochemical Society, Geological Society of America, International Association of GeoChemistry, and International Glaciological Society

### Selected Publications

**Anderson, SP**, Kelly, PJ, Hoffman, N, Barnhart, K, Befus, K, and Ouimet, W (2021): Is this steady state?

Weathering and critical zone architecture in Gordon Gulch, Colorado Front Range. *In* Hydrogeology, Chemical Weathering, and Soil Formation, AGU Geophysical Monograph 257, ed. by AG Hunt, M Egli, and B Faybishenko, John Wiley & Sons, Inc., p. 231-252

Rossi, MW, Anderson, RS, **Anderson, SP** and Tucker, GE (2020): Orographic controls on sub-daily rainfall statistics and flood frequency in the Colorado Front Range, USA. *Geophys Research Letters* 47, e2019GL085086, doi: 10.1029/2019GL085086.

**Anderson, SP** (2019): Breaking it down: Mechanical processes in the weathering engine. *Elements* (15): 247-252, doi: 10.2138/gselements.15.4.247.

Anderson, RS, Rajaram, H, and **Anderson, SP** (2019): Climate driven co-evolution of weathering profiles and hillslope topography generates dramatic differences in critical zone architecture. *Hydrological Processes* 33(1): 4-19, doi: 10.1002/hyp.13307.

Von Voigtlander, J, Clark, MK, Zekkos, D, Greenwood, WW, **Anderson, SP**, Anderson, RS, and Godt, JW (2018): Strong variation in weathering of layered rock maintains hillslope-scale strength under high precipitation. *Earth Surface Processes and Landforms*, 43: 1183-1194, doi: 10.1002/esp.4290.

Mills, TJ, **Anderson, SP**, Bern, C, Aguirre, A, and Derry, LA (2017): Colloid mobilization and seasonal variability in a semi-arid, headwater stream. *J Environmental Quality* 46 (1): 88-95.

- Anderson, SW, **Anderson, SP**, and Anderson, RS (2015): Exhumation by debris flows in the 2013 Colorado Front Range storm, *Geology* 43 (5): 391-394, doi:10.1130/G36507.1.
- Anderson, RS, **Anderson, SP**, and Tucker, GE (2013): Rock damage and regolith transport by frost: An example of climate modulation of critical zone geomorphology. *Earth Surface Processes and Landforms* 38: 299-316, doi:10.1002/esp.3330. (Publ. online 18 Oct 2012).
- Anderson, SP**, Anderson, RS, and Tucker, GE (2012): Landscape scale linkages in critical zone evolution. *Comptes rendus- Geoscience* 344: 586-596, doi:10.1016/j.crte.2012.10.008.
- Hinckley, E-L, Ebel, BA, Barnes, RT, Anderson, RS, Williams, MW, and **Anderson, SP** (2014): Aspect control of water movement on hillslopes near the rain-snow transition of the Colorado Front Range, U.S.A. *Hydrological Processes* 28: 74-85, doi:10.1002/hyp.9549. (Publ. online 17 Oct 2012.)
- Riggins, SG, Anderson, RS, **Anderson, SP**, and Tye, AM (2011): Solving a conundrum of a steady-state hillslope with variable soil depths and production rates, Bodmin Moor, UK. *Geomorphology* 128: 73-84.
- Anderson, RS, and **Anderson, SP** (2010): *Geomorphology: The Mechanics and Chemistry of Landscapes*. Cambridge University Press, 340 pp.
- Bartholomaeus, TC, Anderson, RS, and **Anderson, SP** (2008) Response of glacier basal motion to transient water storage. *Nature Geoscience* 1: 33-37.
- Molnar, P.H., Anderson, R.S., and **Anderson, SP** (2007): Tectonics, fracturing of rock, and erosion. *J Geophys Research-Earth Surface* 112, F03014, doi:10.1029/2005JF000433, 12 pages.
- Skidmore, ML, **Anderson, SP**, Sharp, M, Foght, JM and Lanoil, BD, (2005): Comparison of microbial community compositions of two subglacial environments reveals a possible role for microbes in chemical weathering processes. *Applied Environmental Microbiology*, 71(11): 6986-6997.
- Anderson, SP** (2007): Biogeochemistry of glacial landscape systems. *Ann Rev Earth and Planet Sci* 35: 375.
- Anderson, SP**, Longacre, S, and Kraal, E (2003): Patterns of water chemistry and discharge in the glacier-fed Kennicott River: Evidence for subglacial water storage cycles. *Chem Geology* 202 (3-4): 297-312.
- Anderson, SP**, Walder, JS, Anderson, RS, Kraal, ER, Cunico, M., Fountain, AG, and Trabant, DC. (2003): Integrated hydrologic and hydrochemical observations of Hidden Creek Lake jökulhlaups, Kennicott Glacier, Alaska. *J Geophys Res- Earth Surface* 108(F1), 6003, doi:10.1029/2002JF000004
- Anderson, SP**, Dietrich, WE, and Brimhall, GH, Jr. (2002): Weathering profiles, mass balance analysis, and rates of solute loss: Linkages between weathering and erosion in a small, steep catchment. *Geological Society of America Bulletin* 114(9): 1143-1158.
- Evans, MJ, Derry, LA, **Anderson, SP**, and France-Lanord, C (2001): A hydrothermal source of radiogenic Sr to Himalayan rivers. *Geology* 29(9): 803-806.
- Anderson, SP**, Drever, JI, Frost, CD, and Holden, P (2000): Chemical weathering in the foreland of a retreating glacier. *Geochimica et Cosmochimica Acta* 64 (7): 1173-1189.
- Anderson, SP**, Dietrich, WE, Montgomery, DR, Torres, R, Conrad, ME, and Loague, K (1997): Subsurface flow paths in a steep, unchanneled catchment. *Water Resour Res* 33 (12): 2637-2653.
- Hallet, B, and **Prestrud, S** (1986): Dynamics of periglacial sorted circles in western Spitsbergen. *Quaternary Res* 26: 81-99, 10.1016/0033-5894(86)90085-2.

**Advising:** 5 post-docs, 4 PhD students, 7 Master's students, 12 undergraduate student theses

### Reviewing and Editorial Service

- Reviewer for National Research Council reports: "Landscapes on the Edge" (2010), "Challenges and Opportunities in Hydrologic Sciences" (2011)
- Guest editor, *Hydrological Processes* 2019 SI on "Water in the Critical Zone", with Ying Fan (Rutgers) and Gordon Grant (USFS/OSU).
- Guest Editor, *Chemical Geology* 2003 SI on "Controls on Chemical Weathering", with Alex Blum (USGS).

Associate Editor, *Arctic, Antarctic, and Alpine Research*, 2007-2011  
Editor, *Arctic, Antarctic, and Alpine Research*, 2004-2006.  
Associate Editor, *Journal of Geophys Res- Earth Surface*, 2002-2006.