

## Arjun M. Heimsath

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### Education

B.S.	1989	Yale College (Honors, Mechanical Engineering)
M.S.	1993	Yale University, School of Forestry and Environmental Studies
Ph.D.	1999	University of California, Berkeley (Geology)

### Relevant Positions

2007-Present	Associate Professor, School of Earth and Space Exploration, ASU
2000-2007	Assistant Professor, Dartmouth College
1999-2000	NSF Post-doctoral Fellow, Australian National University, Canberra
1989-1991	Water Development Engineer, US Peace Corps, Kenya

### Select Academic Honors

2007-2008	Guggenheim Fellowship: Soil Erosion and Sustainability
2006	Crosby Distinguished Lectureship, Massachusetts Institute of Technology
2004	Dartmouth College Junior Faculty Fellowship
2004	Presidential Early Career Award for Scientists and Engineers (PECASE)
2003-2007	NSF CAREER Award (5 yr) for research on Geomorphic Transport Laws
2001-2002	Jan De Ploey Prize for contributions to Process Geomorphology
1999-2000	NSF Post-doc Fellow (2 yr) for research on sediment transport rates
1995-1998	NASA Graduate Student Fellowship in Global Change Research
1994-1995	Switzer Environmental Graduate Fellowship

### Research Interests

Geomorphology; Tectonic geomorphology; digital terrain modeling; Quaternary climate changes; Carbon sequestration and the carbon budget; Exposure-age dating ( $^{10}\text{Be}$  &  $^{26}\text{Al}$ ); Glacial geomorphology; Erosion and cliff retreat; Natural hazard assessment and prediction (landslides); Weathering processes and rates;  $^{10}\text{Be}$  and  $^{26}\text{Al}$  concentrations and production rates; Optically stimulated luminescence (OSL) and short lived isotopes ( $^{210}\text{Pb}$ ,  $^7\text{Be}$ ,  $^{137}\text{Cs}$ ,  $^{241}\text{Am}$ ) toward sediment transport processes; Human impacts on the landscape.

### Field Experience

*Soil production and erosion:* California and Oregon Coast Ranges, Southeastern Australia, Northern Territories of Australia, South Africa, Nepal, Tibet, Chugach Range in Alaska (using cosmogenic  $^{10}\text{Be}$  and  $^{26}\text{Al}$  and topographic studies), South Africa.

*Bedrock weathering:* Southern Tibet, Nepal, Central and northern Australia, Southern California, Oregon Coast Range, Hubbard Brook, NH, Chugach Range in Alaska.

*Exposure age dating:* Southern Tibet, Nepal, Central Australia, Chugach Range in Alaska

*Optically stimulated luminescence:* Southeastern Australia

*Carbon Sequestration:* Southeastern Australia, northern California, Oregon Coast Range

*Quaternary Climate Changes:* Northern and southeastern Australia, Tibet, Nepal, China

*Human Impacts:* Central and coastal Kenya, South Africa, Indian Himalaya, Nepal Himalaya, Tibet, Oregon and California Coast Ranges.

### Personal

\* Hindi as a second language, fluency in kiSwahili and Nepali.

\* Rock climbing, mountaineering, triathlons, creative writing (poetry and stories).

## **Refereed Publications** (\* denotes student or post-doc author)

- DiBiase, R.A., Whipple, K.X., **Heimsath, A.M.**, and Ouimet, W.B. Landscape form and millennial erosion rates in the San Gabriel Mountains, CA. *Earth and Planetary Science Letters*, In Review.
- Amundson, R., Dietrich, W.E., Bellugi, D., Ewing, S., Nishiizumi, K., Chong, G., Ebling, A., Owen, J., Finkel, R., **Heimsath, A.M.**, and Caffee, M. Geomorphic evidence for the Late Pliocene onset of hyperaridity in the Atacama desert. *GSA Bulletin*. In Review.
- Kaste, J.M.\*, Bostick, B.C., **Heimsath, A.M.**, Steinnes, E., and Friedland, A.J. The dynamics of Al, Fe, and Mn in aging organic matter: Insight from  $^{210}\text{Pb}$  dating in the O horizon. *Geochimica et Cosmochimica Acta*, In Review.
- Pratt-Sitaula, B.A.\*, Burbank, D.W., **Heimsath, A.M.**, Humphrey, N., Oskin, M., Putkonen, J. Hypsometric control of asynchronous glacial advances in the Nepalese Himalaya. *Geology*. In Revision.
- Burke, B.\* **Heimsath, A.M.**, and Kaste, J.M.\*. Quantifying the spatial variability of chemical weathering across soil-mantled landscapes. *Geoderma*. In Revision.
- Heimsath, A.M.**, Hancock, G.R., and Fink, D., 2009. The ‘humped’ soil production function: Eroding Arnhem Land, Australia. *Earth Surface Processes and Landforms*. In press.
- Heimsath, A.M.**, Chappell, J., and Fifield, K., 2009. Eroding Australia: Rates and processes from Bega Valley to Arnhem Land. Geological Society of London, Special Publication. In press.
- Furbish, D.J., Haff, P.K., Dietrich, W.E., and **Heimsath, A.M.**, 2009. Statistical description of slope-dependent soil transport and the diffusion-like coefficient. *J. of Geophysical Research*, In press.
- O’Farrell, C.R.\* , **A.M. Heimsath**, D.E. Lawson, L.M. Jorgensen\*, E.B. Evenson, and G. Larson., 2009. Above the glacier: non-glacial erosion rates and processes feeding the Matanuska Glacier, Alaska. *Earth Surface Processes and Landforms*. In Press.
- Dixon, J.L.\* , **Heimsath, A.M.**, Kaste, J.M.\* , and Amundson, R., 2009. Climate driven processes of hillslope weathering. *Geology*. In press.
- Dixon, J.L.\* , **Heimsath, A.M.**, and Amundson, R., 2009. The critical role of climate and saprolite weathering in landscape evolution. *Earth Surface Processes and Landforms*. DOI: 10.1002/esp.
- Cook, K.L.\* , Whipple, K.X., **Heimsath, A.M.**, and Hanks, T., 2009. Rapid incision of the Colorado River in Glen Canyon – insights from channel profiles, local incision rates, and modeling of lithologic controls. *Earth Surface Processes and Landforms*. DOI: 10.1002/esp. 1790.
- Burke, B\* **A.M. Heimsath**, J. Chappell, and K. Yoo\*, 2009. Weathering the escarpment: Chemical and physical rates and processes, southeastern Australia. *Earth Surface Processes and Landforms*. DOI: 10.1002/esp.1764.
- Heimsath, A.M.** and McGlynn, R.S.\* , 2008. Quantifying headwall retreat rates in the Nepal High Himalaya. *Geomorphology*, **97**(1-2): 5-23. DOI:10.1016/j.geomorph.2007.02.046.
- Pratt-Sitaula, B.A.\* , Garde, M.\* , Burbank, D.W., Oskin, M., **Heimsath, A.M.**, and Gabet, E. 2007. Bedload ratio, regional erosion rate, and rapid bedrock incision from Himalayan landslide-dam lake record. *Quaternary Research*, **68**: 111-120.
- Harkins, N.\* , Kirby, E., and **Heimsath, A.M.**, 2007. Transient fluvial incision in the headwaters of the Yellow River, northeastern Tibet, China. *J. of Geophysical Research*. **112**: F03S04.
- Kirby, E., Johnson, C.\* , Furlong, K., and **Heimsath, A.M.**, 2007. Transient channel incision along Bolinas Ridge, California: Evidence for differential rock uplift adjacent to the San Andreas Fault. *J. of Geophysical Research*, **112**, F03S07.
- Yoo, K.\* , R. Amundson, **A. M. Heimsath**, W. E. Dietrich, and G. H. Brimhall, 2007. Integration of geochemical mass balance with sediment transport to calculate rates of soil chemical weathering and transport on hillslopes. *J. of Geophysical Research*, **112**: F02013.

- Kaste, J.M.\*, **Heimsath, A.M.** and Bostick, B. C., 2007. Short-term soil mixing quantified with fallout radionuclides. *Geology*, **35**(3): 243-246.
- Salant, N.L.\*, Renshaw, C.E., Magilligan, F.J., Kaste, J.M.\*, Nislow, K.H., and **Heimsath, A.M.**, 2007. The use of short-lived radionuclides to quantify transitional bed load transport in a regulated river. *Earth Surface Processes and Landforms*, **32**: 509-524.
- Burke, B\* and **Heimsath, A.M.**, and White, A.F., 2007. Coupling chemical weathering with soil production across soil mantled landscapes. *Earth Surface Processes and Landforms*. **32**: 853-873.
- O'Farrell, C.R.\*, **Heimsath, A.M.**, and Kaste, J.M.\*, 2007. Quantifying hillslope erosion rates and processes for a coastal California landscape over varying timescales. *Earth Surface Processes and Landforms*, **32**: 544-560.
- Magilligan F.J., Salant, N.L.\*, Renshaw, C.E., Nislow, K.H., **Heimsath, A.M.**, and Kaste, J.\*, 2006, Evaluating the impacts of impoundment on sediment transport using short-lived fallout radionuclides, In: *Sediment Dynamics and The Hydromorphology of Fluvial Systems* (Ed. Rowan, J. and Werrity, A.), The International Association of Hydrological Sciences (IAHS) Special Publication 306, IAHS Press, Wallingford, UK, pp. 159-165.
- Kaste, J.M.\*, Bostick, B.C., and **Heimsath, A.M.** 2006. Determining  $^{234}\text{Th}$  and  $^{238}\text{U}$  in rocks, soils, and sediments via the doublet gamma at 92.5 keV. *Analyst*, **131**(6): 757-763.
- Heimsath, A.M.**, 2006. Eroding the land: Steady-state and stochastic rates and processes through a cosmogenic lens. In Siame, L.L., Bourles, D.L., and Brown, E.T. (eds.), Application of cosmogenic nuclides to the study of Earth surface processes: the practice and the potential. *GSA Special Paper 415*, p. 111-129, DOI 10.1130/2006.2415(07).
- Kaste, J.M.\*, **Heimsath, A.M.**, and Hohmann, M., 2006. Quantifying sediment transport across an undisturbed prairie landscape using Caesium-137 and high-resolution topography. *Geomorphology*, **76**: 430-440.
- Heimsath, A.M.**, Chappell, J., Finkel, R.C., Fifield, K., and Alimanovic, A., 2006. Escarpment erosion and landscape evolution in southeastern Australia. *Geological Society of America Special Paper 398*, p. 173-190. doi: 10.1130/2005.2398(10).
- Heimsath, A.M.**, Furbish, D.J., and Dietrich, W.E., 2005. The illusion of diffusion: Field evidence for depth dependent sediment transport. *Geology*, **33**(12): 949-952.
- Yoo, K.\*, Amundson, R., **Heimsath, A.M.**, and Dietrich, W.E., 2005. A process based model linking pocket gopher (*Thomomys bottae*) activity to sediment transport and soil thickness. *Geology*, **33**(11): 917-920.
- Niemi, N., Oskin, M., Burbank, D., and **Heimsath, A.M.**, 2005. Effects of bedrock landsliding on cosmogenically determined erosion rates. *Earth and Planetary Science Letters*, **237**: 480-498.
- Yoo, K.\*, Amundson, R., **Heimsath, A.M.**, and Dietrich, W.E., 2005. Erosion of upland hillslope soil organic carbon: Coupling field measurements with a sediment transport model, *Global Biogeochemical Cycles*, **19**, GB3003, doi:10.1029/2004GB002271.
- Garvin, C.\*, Hanks, T.C., Finkel, R.C., and **Heimsath, A.M.**, 2005. Episodic incision of the Colorado River in Glen Canyon, Utah. *Earth Surface Processes and Landforms*, **30**(8): 973-984.
- Yoo, K.\*, Amundson, R., **Heimsath, A.M.**, and Dietrich, W.E., 2005. Spatial patterns of soil organic carbon on hillslopes: Integrating geomorphic processes and the biological C cycle. *Geoderma*, **130**(1-2): 47-65.
- Wobus, C.\*, **Heimsath, A.M.**, Whipple, K.X., Hodges, K., 2005. Active surface thrust faulting in the Central Nepalese Himalaya. *Nature*, **434**: 1008-1011.
- Pratt-Situala, B.\*, Burbank, D.W., **Heimsath, A.M.**, and Ojha, T., 2004. Landscape disequilibrium on 1,000 to 10,000 year scales: Marsyandi River, Nepal, central Himalaya. *Geomorphology*, **58**(1-4): 223-241.

Dietrich, W.E., Bellugi, D., **Heimsath, A.M.**, Roering, J.J., Sklar, L., and Stock, J.D., 2003. Geomorphic Transport laws for predicting landscape form and dynamics. In *Prediction in Geomorphology*, Wilcock, P. and Iverson, R. (eds), American Geophysical Union monograph No. 135, Washington, D.C., p. 103-132.

**Heimsath, A.M.** and Farid, H., 2003. "Hillslope topography from unconstrained photographs" by A.M. Heimsath and Hany Farid – Reply. *Mathematical Geology*, **35**(3): 351-352.

**Heimsath, A.M.** and Farid, H., 2002. Hillslope topography from unconstrained photographs. *Mathematical Geology*, **34**(8): 929-952.

Pratt, B.\*, Burbank, D.W., **Heimsath, A.M.**, and Ojha, T., 2002. Alluviation during Early Holocene strengthened monsoons, Central Nepal Himalaya. *Geology*, **30**(10): 911-914.

**Heimsath, A.M.**, Chappell, J.C., Spooner, N.A., Questiaux, D.G., 2002. Creeping soil. *Geology*. **30**(2): 111-114.

**Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 2001. Stochastic processes of soil production and transport: erosion rates, topographic variation and cosmogenic nuclides in the Oregon Coast Range. *Earth Surface Processes and Landforms*, **26**: 531-552.

**Heimsath, A.M.**, Chappell, J.C., Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 2001. Late Quaternary erosion in southeastern Australia. *Quaternary International*, **83-85**: 169-185.

Braun, J., **Heimsath, A.M.**, Chappell, J.C., 2001. Sediment transport mechanisms on soil mantled landscapes. *Geology*, **29**(8): 683-686.

**Heimsath, A.M.**, Chappell, J.C., Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 2000. Soil production on a retreating escarpment in southeastern Australia. *Geology*, **28**(9): 787-790.

**Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 1999. Cosmogenic nuclides, topography, and the spatial variation of soil depth. *Geomorphology*, **27**(1/2): 151-172.

**Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 1997. The soil production function and landscape equilibrium. *Nature*, **388**: 358-361.

### **Other Publications**

**Heimsath, A.M.**, and Ehlers, T., 2005. Quantifying Rates and Timescales of Geomorphic Processes. Editorial, *Earth Surface Processes and Landforms*, **30**(8): 917-922. (Editorial)

**Heimsath, A.M.**, 2004. *Swayambu's Shadow & Walking the Dusty Road* (poems), and *The Inner Gorge & Manasalu's Cloud* (photos), Woodsmoke, Spring.

**Heimsath, A.M.**, 2001. *Courtyard*. Seedhouse Literary Journal, Fall Volume. (poem).

**Heimsath, A.M.**, 2000. Himalayan Erosion. *Seminar*, **486**: 19-25. (essay).

**Heimsath, A.M.**, 2000. Human Impacts on Ancient Environments. Book Review. *Society for Archaeological Sciences Bulletin*, **23**(2):16-18.

**Heimsath, A.M.**, 1993. A comparison of stream flow from agricultural and forested watersheds in the Middle Hills, Nepal. Working Paper #63, Tropical Resources Institute, Yale, New Haven. 62 p.

### **Non-science**

*Mesa Refuge*: Writing Refuge Fellowship, Common Council Foundation, Pt. Reyes, CA, Fall, 2003.

Books in progress: *Himalayan Wanderer* (essays) and *Walking the Horizontal Well* (poems).

Poems, essays and short stories are always in progress and submitted periodically for publication.

Landscape Photography taken and submitted, published periodically.

### **Scientists with whom the I've had a collaboration in the past 48 months**

William E. Dietrich, Kunihiro Nishiizumi, Ronald Amundson (UCB)  
Doug Burbank (UC Santa Barbara), Robert C. Finkel (Lawrence Livermore Nat'l Lab)  
John Chappell, Jean Braun, Ed Rhoades (ANU)  
Garry Willgoose and Greg Hancock (The University of Newcastle)  
Ben Bostick, Hany Farid, Frank Magilligan (Dartmouth)  
Kip Hodges and Kelin Whipple (MIT, now at Arizona State University)  
Devendra Lal (UC San Diego – SCRIPPS); Eric Kirby (Penn State)

**Post-Doc collaborator:** John Chappell, Australian National University

**Ph.D. advisor:** William E. Dietrich, University of California, Berkeley

**M.S. advisor:** Paul K. Barten, Yale University

### **Selected Grant Support**

#### **Current**

NSF - Earth Sciences Geology and Paleontology: (dual-PI w/ Whipple, ASU):

*Tectonics and Topography in the Transverse Ranges: Landscape Response to Rock Uplift Rate across the Transition from Soil-Mantled to Rocky Slopes.*

36 months, 07/01/05 - 06/30/08, \$257,477 (Dartmouth) – In extension

#### **Past**

NSF – Earth Sciences Geology and Paleontology:

*CAREER – Quantifying erosional processes on upland landscapes.*

60 months, 01/31/03 – 01/31/09, \$428,541 – Went into extension.

NSF – Ecosystem Studies Program Collaborative Research (dual-PI w/ Amundson, UCB):

*Erosional removal and redistribution of organic carbon in undisturbed upland ecosystems.*

36 months, 07/01/02 – 06/30/06, \$217,600 (Dartmouth, in extension).

NSF – Geography, as co-PI (lead PI – Magilligan, Dartmouth):

*The Impacts of Flow Regulation By Dams on the Physical and Ecological Characteristics Of Rivers.*

24 months, 07/01/03 – 06/30/05, \$244,000 (Total, in extension).

NSF – Continental Dynamics Program, as co-PI (lead PI – Burbank, UCSB):

*Geomorphic-Geodynamic coupling at the orogen scale: a Himalayan transect in Central Nepal.*

48 months, 01/01/00 – 12/31/04, \$306,402 (Dartmouth). Extended with a \$16,432 supplement.

US Army Corps of Engineers – Cold Regions Research and Engineering Laboratory:

*Radionuclide Analysis of Soils from an Undisturbed Prairie LTER Field Site.*

12 months, 08/01/03 – 07/31/04, \$48,326.

Australian Research Council (ARC), as Partner Investigator (w/ Willgoose and Hancock):

*Quantifying the impact of weathering on long-term erosion and soil development.*

36 months, 01/01/01 – 12/31/03, ~\$45,000.

NSF – Postdoctoral Research Fellowship:

*Optically stimulated luminescence and topography to quantify hillslope sediment transport laws.*

01/01/99 – 6/30/00, \$72,000

*Graduate studies at UC Berkeley, w/ PI Bill Dietrich.*

NASA graduate fellowship for Global Change research, \$45,000, plus Switzer Environmental Fellowship (\$10,000) to support graduate research with cosmogenic radionuclides toward quantifying the soil production function. Assisted PI Dietrich in writing successful grant proposals to several agencies, including NSF, IGPP and CalSpace for this work. Total funds raised over 5 years ~ \$500,000.

### **Graduate Student Advising:** (thesis topics listed at end)

*At Arizona State University*

Matt Jungers, Roman DiBiase, Jeni McDermott, Byron Adams, Nathan Toke (PhD); Megan Muretta, Kelli Wakefield, Melinda Shimizu (MS)

*At Dartmouth*

Ben Burke, Jean Dixon, James Kaste (PhD); Elizabeth Johnson, Joel Byersdorfer, Cris Garvin, Robert McGlynn, Colin O'Farrell (MS); Beth Pratt-Sitaula (UCSB, MS; PhD); Kyungsoo Yoo (UCB, PhD); Cameron Wobus (MIT, PhD); Feixin Huang (Chinese Academy of Sciences, Dept. of Geology, PhD).

### **Undergraduate Student Advising:**

*At Arizona State University*

Joseph Walsh

*At Dartmouth*

Carmen Springer, Laura Jorgensen, Deane Sommerville, Emily Leshner and Colin O'Farrell (Honors theses), Alex Hamlin (independent Senior research project in NH), Deane Sommerville and Layne Moffett (independent research project in New Zealand).

### **Conference Abstracts Published**

*(Not including numerous abstract publications that have colleagues as first authors)*

- Heimsath, A.M.**, 2008. *INVITED*. Quantifying erosion rates and processes across upland landscapes. *Proceeding of the British Society for Geomorphology Annual Meeting*.
- Heimsath, A.M.**, Chappell, J., Hancock, GR, Fifield, K., and Fink, D., 2008. Eroding Australia: Slowly. *Geochimica Cosmochimica Acta*, **72**: A363. *Supplement to Goldschmidt Conference*.
- Heimsath, A.M.**, 2008. *INVITED*. Erosion rates and processes across two trans Himalayan transects in central Nepal. *Himalayan Geology*, **29**-p28. *Proceedings of Himalayan Geology Annual Meeting*.
- Heimsath, A.M.**, 2007. *INVITED*. Hillslope processes and the delivery of sediment to the channel. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2007 annual meeting*.
- Heimsath, A.M.**, 2007. From Australia to Nepal: Detrital cosmo from the ends of the Earth. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2007 annual meeting*.
- Heimsath, A.M.**, Kaste, J.M., Burke, B.C., Dixon, J.L. and Byersdorfer, J., 2007. Coupling physical and chemical weathering processes across upland landscapes. *GSA Abstracts with Programs, Transects of 2007 Annual Meeting*.
- Heimsath, A.M.**, 2006. *INVITED*. Quantifying soil production and transport processes. *GSA Pardee Keynote Symposia, Annual meeting of the Geological Society of America, Fall 2006*.
- Heimsath, A.M.** and Burke, B.C.\*, 2006. *INVITED*. Eroding an escarpment: quantifying physical and chemical processes across the Great Escarpment of southeastern Australia. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2006 annual meeting*.

- Heimsath, A.M.**, 2006. Eroding the land: Steady-state and stochastic rates and processes through a cosmogenic lens. *Geochimica et Cosmochimica Acta, Special Supplement, 16<sup>th</sup> Annual V.M. Goldschmidt Conference, Melbourne, Australia.*
- Heimsath, A.M.**, Furbish, D.J., and Dietrich, W.E., 2005. *INVITED*. The transience of soil mantled landscapes: Quantifying sediment transport processes. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2005 annual meeting.*
- Heimsath, A.M.**, 2005. *INVITED*. Coupling physical and chemical processes across upland landscapes. *Geochimica et Cosmochimica Acta, Special Supplement, 15<sup>th</sup> Annual V.M. Goldschmidt Conference, Moscow, Idaho.*
- Heimsath, A.M.** and Wobus, C.\*, 2004. Erosion rates and processes across two trans Himalayan transects in central Nepal. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2004 annual meeting.*
- Heimsath, A.M.**, 2004. *INVITED*. Eroding the Himalaya: Cosmogenic Pushing the Limits of Cosmogenic Nuclides. *Transactions from the 32<sup>nd</sup> IGC annual meeting, Florence, Italy, August.*
- Heimsath, A.M.**, 2004. *INVITED*. From Manang to Mugling: Cosmogenic Nuclides and Erosion Rates Across a Transect of the Nepal Himalaya. *Transactions from the 1<sup>st</sup> annual AOGS annual meeting, Singapore, July.*
- Heimsath, A.M.** and Chappell, J, 2003. Escarpment erosion and landscape evolution in southeastern Australia. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2003 annual meeting.*
- Heimsath, A.M.** and Farid, H., 2002. Hillslope topography from unconstrained photographs. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2002 annual meeting.*
- Heimsath, A.M.**, 2002. *INVITED*. Simple hillslope erosion narrated by complex methods. *Geochimica et Cosmochimica Acta, Special Supplement, 12<sup>th</sup> Annual V.M. Goldschmidt Conference, Davos, Switzerland.*
- Heimsath, A.M.**, 2001. *INVITED*. Sediment production and transport on hilly landscapes. *Transactions of the Geological Society of America, Annual Fall Meeting, 2001, Boston, MA.*
- Heimsath, A.M.**, Chappell, J.C., Spooner, N.A., Questiaux, D.G., 2001. Creeping soil by optically stimulated luminescence and cosmogenic nuclides. *EOS Supplement, Transactions of the American Geophysical Union, Spring 2001 meeting.*
- Braun, J., **Heimsath, A.M.**, and Chappell, J.C., 2000. On the nature of sediment transport mechanisms on hillslopes. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2000 meeting.*
- Heimsath, A.M.**, and Chappell, J.C., 2000. Bedrock erosion and soil production rates determined with cosmogenic <sup>26</sup>Al and <sup>10</sup>Be in Australia. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2000 meeting.*
- Heimsath, A.M.**, and Chappell, J.C., 2000. Soil production, bedrock erosion, and river incision rates in SE Australia. Quaternary Studies Meeting. Regional analysis of Australian Quaternary Studies: strengths, gaps, and future directions, Australian National University, Canberra.
- Heimsath, A.M.**, Chappell, J.C., Spooner, N., and Dietrich, W.E., 1999. Erosion Laws by Optically Stimulated Luminescence and Cosmogenic Nuclides in Southeastern Australia. *EOS Supplement, Transactions of the American Geophysical Union, Fall 1999 meeting.*
- Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., Finkel, R.C., 1998. Soil production and transport in the Marin Headlands. First symposium on current research in GGNRA. USDI, National Park Service.
- Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., Finkel, R.C., and Chappell, J.C., 1998. Soil production, bedrock erosion rates, and landscape evolution on Australia's Southeastern Tablelands. *EOS Supplement, Transactions of the American Geophysical Union, Spring 1998 meeting.*

- Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 1997. Topography, soil depth, and cosmogenic nuclides in Australia and California: the soil production function. *EOS Supplement, Transactions of the American Geophysical Union, Fall 1997 Annual Meeting*.
- Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 1997. Cosmogenic nuclide and geomorphic determination of soil production in Northern California and Coastal Oregon. *AAG Supplement, Annual Meeting of the American Association of Geographers, Spring 1997*.
- Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 1996. Soil production and landscape equilibrium: hillslope analysis using cosmogenic nuclides in Northern California and Coastal Oregon. *EOS Supplement, Transactions of the American Geophysical Union, Fall 1996 Annual Meeting*.
- Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 1996. The soil production function: cosmogenic nuclides, soil depth and topography in the Oregon Coast Range and Marin County, California. *GSA transactions, Annual meeting of the Geological Society of America, Fall 1996*.
- Heimsath, A.M.**, Dietrich, W.E., Nishiizumi, K., and Finkel, R.C., 1995. Soil depth, topography, biota, and climate change: results from two field-based methods. *EOS Supplement, Transactions of the American Geophysical Union, Spring Meeting 1995*.

### **Conference Abstracts with students or post-docs as first authors (noted by\*)**

- Dixon, JL\*, **Heimsath, AM**, and Amundson, R, 2008. Saprolite and the evolution of upland landscapes - Links between erosion and weathering in Sierra Nevada, CA. *Geochimica Cosmochimica Acta*, 72:A220.
- Hartshorn AS\*, **Heimsath AM**, Chadwick OA, 2008. Maximum granite catena differentiation. *Geochimica Cosmochimica Acta*, 72:A355.
- Dixon, JL\*, **Heimsath, AM**, and Amundson, R, 2008. Delving deeper: how saprolite and chemical weathering influence the expression of climate on surface shaping processes. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2008 annual meeting*.
- DiBiase, RA\*, **Heimsath, AM**, and Whipple, KX, 2008. Hillslope angle, channel steepness and millennial erosion rates in the San Gabriel Mountains, CA. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2008 annual meeting*.
- Dixon, JL\*, **Heimsath, AM**, Burke, BC\*, and Amundson, R, 2007. The role of saprolite weathering in landscape evolution. *GSA Abstracts with Programs, Transects of 2007 Annual Meeting*.
- Johnson, E\*, **Heimsath, AM**, and Dade, WB, 2007. Rock matters: lithologic controls on landscape evolution. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2007 annual meeting*.
- Dixon, JL\*, **Heimsath, AM**, Finnegan, D, and Amundson, R, 2007. Erosion processes, morphometrics and the influence of climate on upland soil-mantled landscape. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2007 annual meeting*.
- Kaste JM\*, **Heimsath AM**, Bostick BC, Steinnes E, and Friedland AJ, 2007. Forest canopy contributions to the weathering profile. *GSA Abstracts with Programs*, 39: #10-2.
- Dixon, J.L. \*, **Heimsath, A.M.**, and Amundson, R., 2006. Climate driven tradeoffs in chemical and physical landscape denudation. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2006 annual meeting*.
- Wobus, C. \*, Whipple, K.X., Hodges, K.V., and **Heimsath, A.M.**, 2006. Locating active structures in the central Nepalese Himalaya: Applications of detrital  $^{40}\text{Ar}/^{39}\text{Ar}$  thermochronology and cosmogenic radionuclides. *EOS Supplement, Transactions of the American Geophysical Union*.
- Burke, B.C. \*, **Heimsath, A.M.**, and White, A.F., 2006. Quantifying chemical and physical weathering across the passive margin escarpment of southeastern Australia. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2006 annual meeting*.

- Dixon, J.L.\* , **Heimsath, A.M.**, Amundson, R., and Kaste, J.M.\* , 2006. Deconstructing the climate-erosion connection. *GSA Transactions, Annual meeting of the Geological Society of America.*
- Harkins, N.\* , Kirby, E., and **Heimsath, A.M.**, 2006. Spatially averaged sediment TCN concentrations describe steady-state and transient landscape process in NE Tibet. *GSA Transactions, Annual meeting of the Geological Society of America.*
- Hartshorn, A.\* , Khomo, L.\* , Chadwick, O.A., Rogers, K., Kurtz, A., **Heimsath, A.M.**, 2005. Hillslope Chromatography in Savannas. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2005 annual meeting.*
- Khomo, L.\* , Hartshorn, A.\* , Chadwick, O.A., Rogers, K., Kurtz, A., **Heimsath, A.M.** , 2005. Chemical and Physical Weathering of Granites in a Semi-Arid Savanna. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2005 annual meeting.*
- Dixon, J.L.\* , **Heimsath, A.M.**, Kaste, J.M.\* , and Amundson, R., 2005. Climate does matter: Quantifying rates and processes for a southern California climate gradient. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2005 annual meeting.*
- Harkins, N.\* , Kirby, E., **Heimsath, A.M.**, and Kline, K., 2005. Transient fluvial incision in the upper reaches of the Yellow River: Base-level fall or differential rock uplift? *EOS Supplement, Transactions of the American Geophysical Union, Fall 2005 annual meeting.*
- O'Farrell, C.R.\* , **Heimsath, A.M.**, Lawson, D.E., Jorgensen, L.H.\* , Evenson, E.B., and Larson, G., 2005. Above the glacier: Non-glacial erosion rates and processes feeding the Matanuska Glacier, Alaska. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2004 annual meeting.*
- Byersdorfer, J.P.\* , Burke, B.C.\* , **Heimsath, A.M.**, and Dade, W.B., 2005. Resisting erosion: Quantifying controls on soil production. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2005 annual meeting.*
- Pratt-Sitaula, B.A.\* , Burbank, D.W., **Heimsath, A.M.**, Humphrey, N., Oskin, M., and Putkonen, J., 2005. Climate and glaciation in the Nepalese Himalaya. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2005 annual meeting.*
- Wobus, C.\* , K.V. Hodges, K.X. Whipple and **Heimsath, A.M.**, 2005. Climate and tectonics in the central Nepalese Himalaya: Is there a connection? *Abstracts with Programs - Geological Society of America, transaction of Fall 2005 annual meeting, Vol. 37, No. 7.*
- Garvin, C.\* , Hanks, T., Finkel, R.C., and **Heimsath, A.M.**, 2005. Episodic incision of the Colorado River in Glen Canyon, Utah. *Abstracts with Programs - Geological Society of America, transaction of Fall 2005 annual meeting, Vol. 37, No. 7.*
- Wobus, C.\* , K.V. Hodges, K.X. Whipple and **Heimsath, A.M.**, 2005. Keynote: Climate and tectonics in the central Nepalese Himalaya: Is there a connection? Earth System Processes 2 meeting, Calgary, Canada.
- B.A. Pratt-Sitaula\* , D.W. Burbank, **A.M. Heimsath**, and E. Gabet, 2005. Impacts of climate change on surface processes, Nepal Himalaya. 20<sup>th</sup> Himalaya-Karakoram-Tibet Workshop Aussois, France, April, 2005.
- M. Garde\* , B.A. Pratt-Sitaula\* , D.W. Burbank, M. Oskin, and **A.M. Heimsath**, 2004. Triple whammy: Mid-Holocene landslide dam yields suspended load-bedload ratio, regional erosion rate, and bedrock incision rate, central Nepal Himalaya. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2004 meeting.*
- O'Farrell CR\* , **Heimsath AM**, Kaste JM\* , 2004. Quantifying Hillside Erosion Rates in California Over Varying Timescales. *Eos Trans. AGU, 85(47), Fall Meet. Suppl., Abstract H51C-1138.*
- Wobus, C.\* , K.V. Hodges, K.X. Whipple and **Heimsath, A.M.**, 2004. Erosion and Exhumation in the Himalaya over millennial to million-year timescales. *Abstracts with Programs - Geological Society of America, transaction of Fall 2004 annual meeting.*

- Yoo, K.\* , Amundson, R., **Heimsath, A.M.** and Dietrich, W.E., 2004. The Topographic Control of Chemical Weathering in Hillslope Soils. *Abstracts with Programs - Geological Society of America, transaction of Fall 2004 annual meeting.*
- Burke, B.C.\* and **Heimsath, A.M.**, 2004. *INVITED*. Chemical Weathering Across A Passive Margin Escarpment, Southeastern Australia. *Abstracts with Programs - Geological Society of America, transaction of Fall 2004 annual meeting.*
- Kaste., J.M.\* , **Heimsath, A.M.**, and Hamlin, A.\* , 2003. Using Fallout Radionuclides and High-Resolution Survey Data to Study the Erosion of Recently Exposed Lake Deposits in New Hampshire. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2003 meeting.*
- McGlynn, R.\* and **Heimsath, A.M.**, 2003. Quantifying Erosion in the Nepal High Himalaya *EOS Supplement, Transactions of the American Geophysical Union, Fall 2003 meeting.*
- Pratt-Sitaula, B.A.\* , Burbank, D.W., **Heimsath, A.M.**, and Putkonen, J., 2003. Significant glacial advance during Younger Dryas, Annapurna region, Nepal. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2003 meeting.*
- Yoo, K.\* , Amundson, R., **Heimsath, A.M.** and Dietrich, W.E., 2003. Non-steady State Soil Organic Carbon Storage in Undisturbed Watersheds Due to Diffusive Sediment Transport. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2003 meeting.*
- Burke, B.C.\* and **Heimsath, A.M.**, 2003. Variations in saprolite chemical weathering signatures. *Abstracts with Programs - Geological Society of America, transaction of Fall 2003 annual meeting.*
- Burke, B.C.\* and **Heimsath, A.M.**, 2002. Correlations Between Chemical Weathering and Soil Production in Soil-Mantled, Upland Landscapes, Central California. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2002 meeting.*
- Kaste, J.M.\* and **Heimsath, A.M.**, 2002. Using Short-Lived Fallout Radionuclides to Study Soil Mixing on Hillslopes in Different Climatic and Tectonic Settings. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2002 meeting.*
- Yoo, K.\* , Amundson, R., **Heimsath, A.M.**, and Dietrich, W.E., 2002. The quantitative interaction between biology and hillslope soil processes: a mathematical model focusing on pocket gophers (*Geomyidae*) as soil erosion agents. *Abstracts with Programs - Geological Society of America, transaction of Fall 2002 annual meeting.*
- Burke, B.C.\* and **Heimsath, A.M.**, 2002. Clay diagenesis and chemical weathering: a field example from a deep saprolite profile, central California. *Abstracts with Programs - Geological Society of America, transaction of Fall 2002 annual meeting.*
- Kaste JM\* , **Heimsath A.M.** and Friedland A.J., 2001. Inferring Hillslope Hydrology from the Distribution of Fallout Radionuclides. *EOS Supplement, Transactions, American Geophysical Union. Spring 2001 meeting.*
- McGlynn, R.\* and **Heimsath, A.M.**, 2001. Quantifying glacial erosion from a small alpine glacier in the Nepal Himalaya. *EOS Supplement, Transactions of the American Geophysical Union, Fall 2001 meeting.*
- Pratt, B.A.\* , Burbank, D.W. and **Heimsath, A.M.**, 2001. Alluviation during strengthened Asian monsoons, central Nepal Himalaya. *EOS Transactions AGU*, 82(47): 510.
- Pratt, B.A.\* , Burbank, D.W. and **Heimsath, A.M.**, 2001. Landscape disequilibrium on 1,000-10,000 year scales, Marsyandi River, Nepal, Central Himalaya. *Abstracts with Programs - Geological Society of America*, 33(6): 69.
- Yoo, K.\* , Amundson, R., **Heimsath, A. M.**, and Dietrich, W E., 2001. Soil organic carbon redistribution by geomorphic processes in an undisturbed zero order annual grassland watershed, California. *EOS Transactions AGU*, 82(47), Fall Meet. Supplement.
- Kaste, J.M.\* , **Heimsath, A.M.**, Friedland, A.J. 2001. Inferring Hillslope Hydrology from the Distribution of Fallout Radionuclides. *EOS Supplement, Transactions of the American Geophysical Union, Spring 2001 meeting.*

Yoo, K\*, Amundson, R., and **Heimsath, A.M.**, 2000. Soil carbon storage vs. erosion rates along two Australian toposequences. *Transactions of the Ecological Society of America Annual Meeting*, Snowbird, Utah.

### **Select other outreach activities**

**Invited speaker**, *Eroding Australia .... Slowly: Equilibrium Landscapes and the “humped” Soil Production Function*, University of Arizona, Department of Geosciences, Spring 2009.

**Invited speaker**, *Quantifying erosion rates and processes across upland landscapes*. Utah State University, College of Natural Resources, Fall 2008.

**Invited speaker**, *Rock, water, sci-soils: Roshamboing the Earth’s surface*. University of Arizona, Department of Soil, Water and Environmental Science, Spring 2008.

**Invited speaker**, *Eroding the Earth: Quantifying Surface Processes and Why We Care*, Arizona State University, School of Earth and Space Exploration, Spring 2007.

**Invited speaker**, *The Earth is Changing: Erosion and Landscape Evolution Through a Multidimensional Lens*, Univ. of California, Santa Barbara, Dept. of Geography, Spring, 2007.

**Invited speaker**, *Eroding the Earth: Quantifying Surface Processes and Why We Care*. University of Edinburgh, School of Geosciences, Spring 2007.

**Invited speaker**, *Evolving the Land: Climate, Tectonics and Erosional Processes*. University of Glasgow, Department of Geographical and Earth Sciences, Winter, 2006.

**Invited speaker**, *Cosmogenic nuclides and Earth Surface Processes*. MIT, Dept. of Earth and Planetary Sciences, Spring, 2006.

**Invited speaker**, *Eroding the Earth: Quantifying Surface Processes and Why We Care*. Johns Hopkins University, Department of Geography and Environmental Sciences, Spring, 2006.

**Invited speaker**, *The Earth is Eroding: Quantifying Rates and Processes*. Harvard University, Department of Earth and Planetary Sciences, Winter, 2006.

**Invited speaker**, *Cosmogenic Nuclides, Topography, Erosion: Field Studies in Cool Places*. University of Washington, Quaternary Research Center, Spring, 2005.

**Invited speaker**, *Erosion, Climate, Topography: tales from the field*. University of California, Santa Barbara, Department of Geological Sciences, Fall, 2004.

**Invited speaker**, *Tor Spotting, Worrying Wombats and Stochastic Processes: cosmogenic nuclides and landscape evolution*. Centre Européen de Recherche et d’Enseignement de Géosciences de l’Environnement (CEREGE), Aix-en-Provence, France. Summer, 2004.

**Invited speaker, paired talks:** *The “topography” part: Quantifying hillslope processes and rates*. And, *Untangling the land: Process studies across soil-mantled landscapes*. Stanford University, Department of Geological and Environmental Studies. Spring, 2004.

**Invited speaker**, *Tor spotting and worrying wombats: landscape evolution through a multidimensional lens*. Cornell University, Department of Geology. Winter, 2004.

**Invited speaker**, *Eroding the Land*. Pennsylvania State University, Department of Geosciences. Fall, 2003.

**Invited speaker**, *The Soil Production Function and Landscape Equilibrium*, Boston University, Department of Geology, Fall 2003.

**Invited speaker**, *Geomorphic transport laws: cosmogenic nuclides, topography, and exciting landscapes*, Columbia University, Lamont-Doherty Earth Observatory, Fall 2003.

**Invited speaker, paired talks:** *Do we care how quickly landscapes erode? And Examining erosional processes: geochemistry and field studies across landscapes*. University of Colorado, Department of Geological Sciences, Winter 2003.

**Invited speaker/scholar, paired seminars:** *Geochemistry and Erosional processes: studies of soil mantled landscapes* and *How quickly do landscapes erode?* Jan DePloey Prize, Laboratory for Experimental Geomorphology, K.U. Leuven, Belgium. Fall 2002.

**Invited speaker**, *Eroding Landscapes*. University of Vermont, Department of Geology, Fall 2002.

- Invited speaker**, *Eroding Landscapes: A Story Narrated by Cosmogenic Isotopes and Optically Stimulated Luminescence*. Florida State University, Department of Geological Sciences/Center for Earth Surface Processes Research, Spring 2002.
- Invited speaker**, *Erosion from a small alpine glacier, Central Nepal Himalaya*. Department of Hydrology and Meteorology, Kathmandu, Nepal, Fall 2001.
- Invited speaker**, *Cosmogenic nuclides, erosion, and landscape evolution*. Yale University, Department of Geology and Geophysics, Spring 2001.
- Invited speaker**, *Soil Production, bedrock erosion, and landscape evolution*. Commonwealth Science and Industrial Research Organization (CSIRO) Arid Region Research Laboratory, Spring 2000.
- Invited Speaker**, *The Soil Production Function*. Department of Geology and Geophysics, UC Berkeley, Spring Seminar Series, 1999.
- Invited speaker**, *Wombats, Soil Depth, Topography, and Cosmogenic Nuclides in Bedrock*. CSIRO Land and Water Divisional Seminar, Fall, 1997, Canberra, Australia.
- Speaker**, *Cosmogenic Nuclides and Soil Production*. Earth System Evolution Workshop, organized by The Canadian Institute for Advanced Research. July 22, 1997, The Australian National University.
- Visiting Scholar**, *The Myth of Environmental Degradation in the Himalaya*. Environment and Policy Institute, The East-West Center, University of Hawaii, Manoa. December, 1992.
- Invited Speaker**, *Anthropogenic versus natural erosion in the Nepal Himalaya*. Center for South and Southeast Asian Studies, U.C. Berkeley, Fall 1992 Speakers Program.

### **Synergistic/Committee Work**

- Associate Editor**, *Earth Surface Processes and Landforms*.  
Frontiers of Science Symposium: National Academy of Sciences/Japan Society for the Promotion of Science – Dec. 2005. Member of Organizing Committee for Dec. 2006 meeting. Co-Chair, 2007.  
Dartmouth Environmental Initiative: planning committee (Ongoing).  
Organize and Chair symposia at the American Geophysical Union (AGU), Goldschmidt geochemical conferences, as well as joint AGU – European Geophysical Union (EGU) international conferences – ongoing commitment.  
Guest Editor for two special issues of *Earth Surface Processes and Landforms*, 2004-2005:  
Quantifying Rates and Timescales of Geomorphic Processes.  
NSF-CAREER symposium on Research and Education: Sept. 2003.  
Software development (with Hany Farid, Dartmouth College) for free distribution that enables topographic map generation from hand-held photographs.  
Assisting with and appearing in two documentary films based on the collaborative research project in Nepal. Stephen Fisher directing and producing a Nova/Discovery Channel type programs.  
NSF-sponsored Science Initiative on CRONUS-Earth Project – Cosmic Ray Produced Nuclide Systematics on Earth: 2002-2004.  
NSF-sponsored MARGINS Science Initiative on Source-to-Sink: planning symposia, 2000-2001.  
Dickey Center for International Learning Steering Committee (2004-Present). Dartmouth Venture Fund Review Committee (2004-Present). Dartmouth Committee for Off-Campus Activities (2001-2003). Four faculty search committees.

### **Professional Affiliations/Membership**

American Geophysical Union  
Geological Society of America

Sigma Xi – The Scientific Research Society  
The Geochemical Society  
Union of Concerned Scientists

**Referee for the following selected journals:**

*Science, Nature, Geology, Earth and Planetary Sciences Letters, GSA Bulletin, American Geophysical Union Monographs, American Journal of Science, Environmental Science and Technology, Geomorphology, Annals of the Association of American Geographers, Catena, Journal of Geophysical Research – Earth Surface, Earth Surface Processes and Landforms (also as Guest Editor), Water Resources Research, Geoderma, Geochimica et Cosmochimica Acta*

**Referee for the following funding agencies**

US National Science Foundation, Austrian Science Foundation, Danish Agency of Sciences, US Dept. of Agriculture, NASA, Australian Research Council, Switzer Foundation/New Hampshire Charitable Trust, National Geographic, IGPP.

**Courses Taught and Offered**

*At Arizona State University*

Geology 101: *Introduction to Earth Sciences*  
School of Sustainability 110: *The Sustainable World*  
Geology 591: *Advanced Geomorphology Seminar*

*At Dartmouth College*

Earth Sciences 2: *Earth History*  
Earth Sciences 7: *Humans and the Environment*  
Earth Sciences 33 (including lab): *Earth Surface Processes and Landforms*  
Earth Sciences 88: *Culminating Experience Seminar*  
Earth Sciences 110, *Watershed Processes (Graduate and upper division undergraduate)*  
Earth Sciences 121 and 122: *Graduate Seminar in Geomorphology*  
Earth Sciences 46 (STRETCH); *Field Geomorphology (off-campus, taught in California)*.  
Earth Sciences 201: *Hillslope Processes: Advanced Geomorphic Concepts and Methods*

**Student Theses Supervised (To be updated)**

**Graduate**

Matt Jungers (PhD, in progress)  
Jean Dixon (PhD, 2008): *Coupling Climate with Erosion: Quantifying Erosion Rates and Processes Along Climate Gradients.*  
Ben Burke (PhD, 2006): *Examining Chemical Weathering in Soil Mantled Landscapes.*  
Jim Kaste (PhD, 2003): *Tracing the retention and redistribution of Pb and other particle-reactive atmospheric fallout in soils.*  
  
Elizabeth Johnson (MS, 2008): *Rock Matters: Lithologic Controls on Landscape Evolution.*  
Colin O'Farrell (MS, 2005): *Quantification of Non-glacial Sediment Inputs to the Glacial Sediment Budget of the Matanuska Glacier, Alaska.*  
Cris Garvin (MS, 2004): *Determining Incision Rates of the Colorado River in Glen Canyon Using Cosmogenic, U-series and OSL Methods.*  
Robert McGlynn (MS, 2003): *Headwall retreat in the Nepal Himalaya.*

### **Undergraduate**

Carmen Springer (BS, 2007): The Anthropogenic Effects on Increased Sedimentation Rates from Off-Road Vehicle Use in the Union Valley Watershed.

Laura Jorgenson (BS, 2005): Quantifying Non-glacial Suspended Sediment Flux into the Matanuska Glacier, Alaska.

Deane Sommerville (BS, 2005): Landslide quantification using hand-held digital photogrammetry.

Alex Hamlin (BS, 2003): Nose Job: A Study of Hillslope Morphology and Sediment Transport Laws on the Noses of Storr's Pond, NH.

Colin O'Farrell (BS, 2003): Quantification of short-term hillside erosion rates in coastal California.

Emily Leshar (BS, 2002): Landscape Development of the Santa Cruz Marine Terraces, California: a Test of Landscape Age.

### **External Advisor to:**

Beth Pratt-Situala (PhD, 2005, University of California, Santa Barbara)

Cameron Wobus (PhD, 2005, MIT)

Kyungsoo Yoo (PhD, 2004, University of California, Berkeley)

### **Undergraduate Lab Interns**

2001: Emily Leshar, Tim Bartholomaeus, Sora Kim, Alex Hamlin

2002: Allette Vayda, Ephraim Taylor, Deane Somerville, Vaibhav Rajan

2003: Laura Jorgensen, Lisa Melvin, Marta Darby, Barry Hashimoto

2004: Oceana Castaneda, Chris Farmer, Cara Foster, Paul Mozur, Alicia Cruz-Uribe

2005: Iona Woolmington, Sam Rust, Jonathan Kroft, Sarah Rosa, Elijah Rosen

2006: Elijah Rosen, James Marlow, Pam Phojanakong, Sam Rust

2008: Joseph Walsh, Allie Stern, Sean De Bruin