

The following application was submitted to the MARGINS Office:

Name:

Thomas Dunne

Category: Professor

Address:

Bren School of Env'tl. Sci. & Mgmt.
University of California Santa Barbara

Santa Barbara, CA 93106-5131
USA

E-mail: tdunne@bren.ucsb.edu

Phone: 1-805-565-0981

Fax: 1-805-893-7612

Statement of interest:

I would like to apply for travel support to the Margins Workshop on May 4-9, 2003. I was a member of the program planning group for the Quinalt MARGINS workshop. My long-term interest is in field and modeling studies of the dispersal of sediment from orogens through foreland basins to the ocean, and I am interested in exploring opportunities for combining my approaches with those of researchers in the Waipoa dispersal system. Since the Quinalt workshop, I have been working on the erosion of the Bolivian Andes and fluvial transport of the resulting sediment across the foreland basin of Eastern Bolivia, in collaboration with Elizabeth Safran, Rolf Aalto, and Paul Bierman. I also study the transport of sediment along the Sacramento R., California, including the way that sediment is exchanged between channel and floodplain environments, such as oxbow lakes, sloughs, and flood basins. Our studies involve measuring sediment release from the orogen over a range of time scales (fission track analysis in apatites, cosmogenic ^{10}Be and ^{26}Al , modern sediment sampling), documenting rates and styles of floodplain sedimentation (^{210}Pb and stratigraphy reconstructed with a variety of markers), and mathematical modeling of mountain erosion (with Safran in the Andes) and channel sediment transport and export to the floodplain (with Aalto in the Beni and Mamore Rivers and Singer in the Sacramento R.) Aalto and I have been corresponding with Murray Hicks about combining his analysis of erosion rates in New Zealand with our analysis of erosion of similar lithologies in the Andes. I would also like to further that discussion at the workshop.

Short resume:

THOMAS DUNNE: CURRICULUM VITAE

Professor, Donald Bren School of Environmental Science and Management, and Department of Geological Sciences, Bren Hall, University of California, Santa Barbara, CA 93106.
Tel. 805-565-0981; Fax 805-893-7612; Email tdunne@bren.ucsb.edu

EDUCATION B.A. 1964 Cambridge Univ., UK; Ph.D. 1969 Johns Hopkins University (Geography)

APPOINTMENTS 1969-73 Assistant Prof., Dept of Geography, McGill University, Montreal and Univ. of Nairobi, Kenya; 1973-1995 Assistant, Associate, and Professor Department of Geological Sciences, Univ. of Washington, Seattle; 1995- Professor of Geological Sciences and of Environmental Science and Management, Univ. of California Santa Barbara.

HONORS Fulbright Scholar, 1964; Robert E. Horton Award, American Geophysical Union, 1987; National Academy of Sciences, 1988; Fellow, American Geophysical Union, 1989; Guggenheim Fellowship, 1989; American Academy of Arts and Sciences, 1993; Fellow, California Academy of Sciences, 1996; National Research Council Wolman Distinguished Lecturer, 1997; National Academy of Sciences Warren Prize for Fluvial Geology, 1998; Bren School Distinguished Faculty Teaching Award, 2002; American Geophysical Union Langbein Lecturer, 2003.

CURRENT RESEARCH INTERESTS

Hydrology, sediment transport, and sedimentation in river channels and floodplains
Field studies and modeling of river-basin sediment budgets.
Field and theoretical studies of drainage basin and hillslope evolution

RECENT RELEVANT PUBLICATIONS

L.A.K. Mertes, T. Dunne, and L.A. Martinelli, Channel-floodplain geomorphology along the Solimões-Amazon River, Brazil, Geological Society of America Bulletin, 108, 1089-1107, 1996.

T. Dunne, L.A.K. Mertes, R.H. Meade, J.E. Richey, and B.R. Forsberg, Exchange of sediment between the channel and floodplain of the Amazon River in Brazil, Geological Society of America Bulletin, 110, 450-467, 1998.

Alsdorf, D.E., J.M. Melack, T. Dunne, L.A.K. Mertes, L.L. Hess, and L.C. Smith, Interferometric radar measurements of water level changes on the Amazon flood plain, Nature, 404, 174-177, 2000.

Singer, M. B., and T. Dunne, Identifying eroding and depositional reaches-of-valley by analysis of suspended-sediment transport in the Sacramento River, California, Water Resources Research, 2001.

Aalto, R., Dunne, T., Nittrouer, C. A., Maurice-Bourgoin, L., and Montgomery, D. R., Fluvial transport of sediment across a pristine tropical foreland basin: channel-flood plain interaction and episodic flood plain deposition, in Dyer, F. J., Thoms, M. C., and Olley, J. M., eds., The Structure, Function and Management

Implications of Fluvial Sedimentary Systems: Wallingford, UK, IAHS Press, p. 339-344, 2002.

Aalto, R., Dunne, T., and Guyot, J. L., Geomorphic controls on Andean denudation rates: *Journal of Geology*, 2003 in press.

OTHER RECENT PUBLICATIONS

T. W. Biggs, T. Dunne, T. F. Domingues, and L. A. Martinelli, The relative influence of natural watershed properties and human disturbance on stream solute concentrations in the southwestern Brazilian Amazon basin, *Water Resources Research*, 38, 25/1-25/16. (DOI 10. 1029/2001 WR 000271), 2002.

D. V. Malmon, T. Dunne, and S. L. Reneau, Predicting the fate of sediment and pollutants in river floodplains, *Environmental Science and Technology*, 36(9), 2026-2-32, 2002

E.J. Gabet and T. Dunne, Landslides on coastal sage-scrub and grassland hillslopes in a severe El Niño winter: the effects of vegetation conversion on sediment delivery, *Geol. Soc. America Bull.*, 114, 983-990, 2002.

C. M. Birkett, L. A. K. Mertes, T. Dunne, M. H. Costa, and M. J. Jasinski, Surface water dynamics in the Amazon basin: application of satellite radar altimetry, *Jour. Geophysical Research Atmospheric Sciences*, 2002.

E. J. Gabet and T. Dunne, Sediment detachment by rain power, *Water Resources Research*, 38, 2002.

- - - - - * - - - - -

ABSTRACT

Title:

Authors:

Abstract:

Wish to include graphics:

Server protocol: HTTP/1.0

Remote host: 206-72-78-232.dsl.dock.net

Remote IP address: 206.72.78.232