

## Biographical Sketch - David G. Tarboton

January 2007

Professor, Utah Water Research Laboratory and Department of Civil and Environmental Engineering, Utah State University. Director of Utah State University Water Initiative. Adjunct Professor in Aquatic Watershed and Earth Resources and Geology departments.

Utah Water Research Laboratory

Department of Civil and Environmental Engineering

Utah State University

Logan, UT, 84322-4100

Phone: (435)-797-3172

Email: dtarb@cc.usu.edu

<http://www.engineering.usu.edu/dtarb/>

### Professional Preparation

Sc.D., Civil Engineering (Water Resources and Hydrology), Massachusetts Institute of Technology, September 1989.

M.S., Civil Engineering, Massachusetts Institute of Technology, May 1987.

Diploma in Datametrics, (Computer Science), University of South Africa, December 1984.

B.Sc Eng, Civil Engineering, University of Natal, Durban, South Africa, December 1981.

### Appointments

February 1990 to Present, Assistant to Associate to Full Professor, Utah Water Research Laboratory and Department of Civil and Environmental Engineering, Utah State University.

November 1997 to June 1998, Visiting scientist at the National Institute for Water and Atmospheric Research, Christchurch, New Zealand, while on sabbatical leave from Utah State University.

September-December 1989, Post Doctoral Associate, Department of Civil Engineering, Massachusetts Institute of Technology, (Taught graduate level course, Numerical Modeling of Physical Systems).

January 1984 - August 1985, Research Officer, National Institute for Transport and Road Research, Pretoria, South Africa. (Research on Pavement Management Systems)

January 1982 - December 1983, Civil Engineering Officer in S.A. Navy.

### Five most relevant publications (From a total of 35 refereed. Many available online at

<http://www.engineering.usu.edu/dtarb/>)

Tarolli, P. and D. G. Tarboton, (2006), "A new method for determination of most likely landslide initiation points and the evaluation of digital terrain model scale in terrain stability mapping," Hydrol. Earth Syst. Sci., 10: 663-677, [www.hydrol-earth-syst-sci.net/10/663/2006/](http://www.hydrol-earth-syst-sci.net/10/663/2006/)

Bandaragoda, C., D. G. Tarboton and R. Woods, (2004), "Application of Topnet in the Distributed Model Intercomparison Project," Journal of Hydrology, 298: 178-201, doi:10.1016/j.jhydrol.2004.03.038.

Luce, C. H. and D. G. Tarboton, (2004), "The Application of Depletion Curves for Parameterization of Subgrid Variability of Snow," Hydrological Processes, 18: 1409-1422, DOI: 10.1002/hyp.1420.

Istanbulluoglu, E., D. G. Tarboton, R. T. Pack and C. H. Luce, (2004), "Modeling of the Interactions between Forest Vegetation, Disturbances and Sediment Yields," JGR - Earth Surface, 109(F1): F01009, doi: 10.1029/2003JF000041.

Istanbulluoglu, E., D. G. Tarboton, R. T. Pack and C. Luce, (2003), "A Sediment Transport Model for Incising Gullies on Steep Topography," Water Resources Research, 39(4): 1103, doi:10.1029/2002WR001467.

### Five significant other publications

Istanbulluoglu, E., D. G. Tarboton, R. T. Pack and C. Luce, (2002), "A Probabilistic Approach for Channel Initiation," Water Resources Research, 38(12): 1325, doi:10.1029/2001WR000782.

- Prasad, R., D. G. Tarboton, G. E. Liston, C. H. Luce and M. S. Seyfried, (2001), Testing a Blowing Snow Model Against Distributed Snow Measurements at Upper Sheep Creek, Idaho, USA. Water Resources Research, in press.
- Tarboton, D. G., G. Blöschl, K. Cooley, R. Kirnbauer and C. Luce, (2000), "Spatial Snow Cover Processes at Kühtai and Reynolds Creek," Chapter 7 in Spatial Patterns in Catchment Hydrology: Observations and Modelling, Edited by R. Grayson and G. Blöschl, Cambridge University Press, Cambridge, p.158-186.
- Luce, C. H., D. G. Tarboton and K. R. Cooley, (1999), "Subgrid Parameterization Of Snow Distribution For An Energy And Mass Balance Snow Cover Model," Hydrological Processes, 13: 1921-1933, special issue from International Conference on Snow Hydrology, Brownsville, Vermont, 6-9 October, 1998.
- Tarboton, D. G., (1997), "A New Method for the Determination of Flow Directions and Contributing Areas in Grid Digital Elevation Models," Water Resources Research, 33(2): 309-319.

### **Synergistic Activities**

Associate editor, Water Resources Research, 1998-2003

Developed online educational module on Rainfall Runoff Processes, with accompanying workbook for the National Weather Service Comet Outreach Program,

<http://www.engineering.usu.edu/dtarb/rrp.html>.

Developed and support the following software that is freely available on my web site

(<http://www.engineering.usu.edu/dtarb/>)

- UEB. The Utah Energy Balance Snowmelt model.
- TARDEM, TauDEM. Programs for terrain analysis and watershed delineation.
- SINMAP. An Arcview Extension for terrain stability mapping.

Member, NRC Committee on River Science at the U.S. Geological Survey, 2004-2006.

Chair of Utah State University Water Initiative Task Force to report to University President on ways to enhance the strength of Utah State University in the study of water. November 2002 – April 2003.

Steering Committee, NSF Supported Center for Airborne Laser Mapping, 2003 – 2006.

Consortium of Universities for the Advancement of Hydrologic Science, Inc. (CUAHSI), Elected member of Board of Directors, 2005-2007.

### **Collaborators and Affiliations**

**Collaborators:** Blöschl, G (Technische Universität Wien), Cline, D (NOHRSC), Elder, K (USFS, Fort Collins), Flerchinger, G (USDA NWRC, Boise), Goodall, J (Duke), Hawkins, C (Utah State University), Lall, U (University of Columbia), Liston, G (Colorado State University), Maidment, D (University of Texas at Austin), McKee, M (Utah State University), McNamara, J (Boise State University), Pack, R T (Utah State University), Piasecki, M (Drexel), Poff, N L (Colorado State University), Seyfried, M (USDA NWRC, Boise), Stevens, D (Utah State University), Van Miegroet, H (Utah State University), Woods, R (NIWA, New Zealand), Zazlavsky, I (University of San Diego).

**Major Professor:** Rafael L Bras, Massachusetts Institute of Technology

**Advisees graduated in last 5 years from a total of 13:** Rajiv Prasad (Ph.D., Pacific Northwest National Laboratory), Erkan Istanbuluoglu (Ph.D., University of Nebraska), Jinsheng You (Ph.D. University of Nebraska), Kiran Chinnayakanahalli (M.S., Utah State University in Ph.D. program), Ibrahim Mohammed (MS., Utah State University in Ph.D. program), Greg Loscher (M.S., Bowen, Collins & Associates).