

## MARSHALL WILKINSON

### **PROFESSIONAL EXPERIENCE**

#### *Assistant professor (tenure track)*

- Department of Geography, University of Kentucky.
- Aug 2007–present.
- Research in biogeomorphology (45%), teaching (45%), administration and service (10%).

#### *Visiting assistant professor*

- Department of Geography, University of Kentucky
- Aug 2006–May 2007.
- Teaching (100%)

#### *Soil and ecological scientist*

- Consultant, self-employed
- Aug 2005–June 2006.
- Site suitability reporting for treated wastewater disposal. Duties: land surface analysis, soil physical and chemical analysis, flora and fauna survey.

### **EDUCATION**

#### *Doctor of Philosophy*

##### **Macquarie University, Sydney. 2006**

- Department of Physical Geography.
- Supervisor: Associate Professor Geoff S. Humphreys
- Thesis: “Reaction of a passive margin: the interplay between vegetation dynamics, soil thickness, climate and incision”.

#### **Collaborators**

- Prof. John Chappell (The Australian National University–ANU)
- Dr. David Fink (Australian Nuclear Science Technology Organisation–ANSTO)
- Dr. Brad Pillans (ANU)
- Dr. Bart Smith (Melbourne University)
- Dr. Jon Olley (Commonwealth Scientific and Industrial Research Organisation–CSIRO)

## *Bachelor of Science–Honours (First Class)*

**Macquarie University, Sydney. 1999.**

- Earth Sciences Department
- Supervisor: Associate Professor Geoff S. Humphreys
- Thesis: “Interactions between treed and treeless vegetation, soils, and landscape evolution on the Newnes Plateau, upper Blue Mountains, New South Wales”.

## *Bachelor of Science*

**Macquarie University, Sydney. 1997**

- Plant Biology, and Resource and Environmental Management
- GPA at 300-level: 3.56.

## TEACHING EXPERIENCE

### *Assistant Professor & visiting assistant professor, University of Kentucky*

- GEO 130–Earth’s Physical Environments, August 2006 – present.
  - Introduction to physical geography and Earth system science.
  - Students: 70 – 250
- GEO 351–Physical Landscapes, August 2006 – August 2008.
  - Survey course on geomorphology.
  - Students: 25 – 50
- GEO 365–Physical Landscapes of Australia, January – present.
  - Regional geography course focusing on the geomorphology of Australia.
  - Students: 20

### *University instructor/demonstrator, Macquarie University*

- GEOS 117–Biophysical Environments, May 2001–May 2006.
  - Instruction/teaching in the following field-based practicals and laboratory classes: Introduction to soils; Vegetation description and leaf litter sampling; Leaf litter analysis; Introduction to GIS. Examination of 1000-word essays (~120/course) on Australian flora and fauna evolution in response to fire, dryness and infertile soils. Developed web-based (WebCT) practicals for vegetation community description to facilitate learning when weather precluded field trips.

## ACADEMIC WORKS

### *Published papers*

- Humphreys, G.S. and **Wilkinson, M.T.**, 2007. The soil production function: a brief history and its rediscovery. *Geoderma*, 139: 73 – 78
- Tomkins, K. M., Humphreys, G. S., **Wilkinson, M.T.**, Fink, D., Hesse, P. P., Doerr, S. H., Shakesby, R. A., Wallbrink, P. J., and Blake, W. H., 2007, Contemporary versus long-term denudation along a passive plate margin: the role of extreme events. *Earth Surface Processes and Landforms*, 32: 1013-1031.
- **Wilkinson, M.T.** and Humphreys, G.S., 2006. Slope aspect, slope length and slope inclination controls of shallow soils vegetated by sclerophyllous heath—links to longterm landscape evolution. *Geomorphology*, 76: 347 – 362.

- **Wilkinson, M.T.**, Chappell, J., Humphreys, G. S., Fifield, K., Smith, B., and Hesse, P. P., 2005. Soil production in heath and forest, Blue Mountains, Australia: influence of lithology and palaeoclimate. *Earth Surface Processes and Landforms*, 30: 923 – 934.
- **Wilkinson, M.T.** and Humphreys, G.S., 2005. Exploring pedogenesis via nuclide-based soil production rates and OSL-based bioturbation rates. *Australian Journal of Soil Research*, 43: 767 – 779.
- **Wilkinson, M.T.**, Humphreys, G.S., Chappell, J., Fifield, K. and Smith, B., 2003. Estimates of soil production in the Blue Mountains, Australia, using cosmogenic <sup>10</sup>Be. In: I.C. Roach (Editor), *Advances in Regolith*. CRC LEME, Canberra, ACT, pp. 441-443.
- Mallinson, D., Armstrong, B., Baker, K., Bogie, L., Dockerty, L., Gilmore, S., Hopkins, E., Indhamusika, S., Jewell, M., Kivshar, V., Mant, J., Mills, H., Neal, J., Paul, J., Macnamara, J., Stadler, F., and **Wilkinson, M.**, 1998, Ecology and conservation status of *Muehlenbeckia tuggeranong* (Polygonaceae) near Canberra. *Cunninghamia*, 5: 773-778.

### *Papers accepted*

- **Wilkinson, M.T.**, Richards, P., and Humphreys, G.S. Breaking ground: pedological, geological, and ecological implications of soil bioturbation. *Earth-Science Reviews*.

### *Papers in preparation*

- **Wilkinson, M.T.**, Humphreys, G.S., Fink, D., and Smith, B., in prep, Soil thickening over millennia by the retention of biogenic mounds. *Geology*.
- **Wilkinson, M.T.**, Humphreys, G.S., Olley, J.M., Roberts, R.G., Fox, J., Simons, N. A., and Hesse, P. P., in prep, Turbulent mixing via biota drives soil formation. Was Darwin correct? *Nature*.
- **Wilkinson, M.T.** Land. In: C. Darwin (Editor), *A Good Planet is Hard to Find*.
- Tomkins, K.M., White, D.A., Hesse, P.P., Taylor, G.M., Humphreys, G.S., **Wilkinson, M.T.**, and Fink, D., in prep., Extreme events and climate change as drivers of variable erosion rates within dissected plateau terrain along the southeast Australian passive margin. *Quaternary Science Reviews*. Submitted: February 2008.

### *Selected conference papers*

- **Wilkinson, M.T.**, Pietsch, T., and Fox, J.F., 2009, Bioturbation on and off: pedogenesis in the eastern Australian highlands during the late Quaternary, *7th International Conference on Geomorphology*, 6–11 July 2009: Melbourne.
- **Wilkinson, M.T.**, Pietsch, T., and Fox, J.F., 2009, Quantifying bioturbation and soil thickening over the late Quaternary: *European Geosciences Union, General Assembly*, v. 11, p. EGU2009-6411-1, 2009.
- **Wilkinson, M.T.** and Pietsch, T., 2008. The imprint of soil biota over annual to millennial timescales: *2008 Joint Meeting of The Geological Society of America, Soil Science Society of America, American Society of Agronomy, Crop Science Society of America, Gulf Coast Association of Geological Societies with the Gulf Coast Section of SEPM*, Houston, Texas, pp. 56-7.
- **Wilkinson, M.**, Humphreys, G., Smith, B., and Pietsch, T., 2008, Quantifying soil displacement by biota over “short” and “long” timescales: *European Geosciences Union General Assembly*, v. 10, EGU2008-A-05735, 2008.
- **Wilkinson, M.**, Humphreys, G., Chappell, J., Fifield, K., and Smith, B., 2008. Bioturbation, soil production and long-term plateau evolution: *European Geosciences Union General Assembly*, v. 10, EGU2008-A-05732, 2008.
- **Wilkinson, M.T.**, Humphreys, G.S., and Smith, B., 2007. Pedogenesis, bioturbation and optically stimulated luminescence: *Geological Society of America Abstracts with Programs*, v. 39, no. 6, p. 182.
- Humphreys, G. S., Tomkins, K. M., **Wilkinson, M.T.**, Fink, D., Doerr, S., Shakesby, R., Wallbrink, P., Blake, W. 2006. Longer-term and contemporary denudation rates, and the role of extreme events along a passive margin, Australia. *16th Annual V.M. Goldschmidt Conference*, Melbourne.

- **Wilkinson, M.T.**, Humphreys, G.S., Fink, D., Chappell, J., and Fifield, K., 2006, Soil production rates inferred from cosmogenic radionuclides, and Last Glacial Maximum erosion rates in upland S.E. Australia, *12th Australian and New Zealand Geomorphology Group Meeting*, Taipa Bay, p.
- Humphreys, G.S., **Wilkinson, M.T.**, Chappell, J., Fink, D., Fifield, K. 2006. What is Inherited? Evidence from an Inceptisol/Regosol with OSL-dated 0 – 150 ka quartz sand. *18th World Congress of Soil Science*, Philadelphia, 49-4.
- **Wilkinson, M.T.**, Humphreys, G.S., Chappell, J., Fifield, K., Smith, B., and Hesse, P.P., 2004. Soil production, landscape evolution and vegetation dynamics in the Blue Mountains, Australia, *Eos Transactions AGU, Fall Meeting Supplement*. American Geophysical Union, Abstract H51C-1147.
- **Wilkinson, M.T.**, Humphreys, G.S., Chappell, J., Fifield, K. and Smith, B., 2004. Soil production and landscape evolution in the Blue Mountains, NSW, derived from cosmogenic <sup>10</sup>Be and O.S.L. In: D. Fabel (Editor), *11th Australian and New Zealand Geomorphology Group Meeting*, Mt. Buffalo, p 77.
- **Wilkinson, M.T.** and Humphreys, G.S., 2004. New insights into pedogenesis using cosmogenic radionuclides and OSL dating, *SuperSoil 2004: 3rd Australian New Zealand Soils Conference*. [www.regional.org.au/au/asssi/](http://www.regional.org.au/au/asssi/), Sydney.
- **Wilkinson, M.T.**, and Humphreys, G.S., 2000, Exposure, soil production and landscape evolution on treed and treeless parts of the Newnes Plateau, Blue Mountains. In: M. Crozier, (Editor), *9th Australian and New Zealand Geomorphology Group Meeting*: Wanaka, p. 100.

## **ADMINISTRATION & SERVICE**

- University of Kentucky, Department of Geography Committees:
- Diversity Committee (2008 – 2009)
- Laboratory Committee (2007 – 2009)
- Library Committee (2007 – 2008)

## **PROFESSIONAL MEMBERSHIP**

- American Geophysical Union (AGU)
- Geological Society of America (GSA)
- Australian and New Zealand Geomorphology Group (ANZGG)
- Australian Quaternary Association (AQUA)

## **AWARDS**

- American-Australian Fellow 2006-2007 (US\$25 000)
- Recipient: Jennings Travel Award 2002

## **TECHNICAL REVIEWS**

- *Geology*
- *Earth Surface Processes and Landforms*
- *Catena*
- *Australian Geographer*