



Dr. PENELOPE COOKE

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Date of Birth	20 August 1965
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Penelope Cooke has a BSc in Earth and Biological Sciences, an MSc (Hons) and a PhD in Earth Sciences from the University of Waikato, New Zealand. She also has a postgraduate diploma in forensic archaeology and international crime scene investigations from Bournemouth University. She joined Brookes Bell in 2011.

Her areas of scientific expertise include carbonate sediments and rocks including various minerals, along with the forensic recovery of items in difficult situations. She has ship-board experience on scientific vessels collecting marine sediment cores and samples.

She has experience in scientific communication to non-specialists, having taught at both secondary school and university level, and written articles for both scientific and general publications.

Penny has experience in a range of analytical techniques such as mass spectrometry, sediment grain size, optical mineralogy and marine invertebrate identification.

Academic Qualifications

1986 BSc in Earth Sciences and Biological Sciences, University of Waikato, New Zealand. Subjects included Genetics, Zoology, Oceanography, Hydrology and Freshwater ecology.

1989 MSc (Hons) in Earth Sciences, with a research project on past climate change using evidence from marine sediments in the South Pacific.

1993 Postgraduate Certificate in Education (PGCE), University of Bath – this is a science teaching qualification.

2003 PhD in Earth Sciences, University of Waikato, New Zealand. This research was again using marine sediment cores, and generated past climate records for the Tasman Sea over the past 20 million years.

2008 Postgraduate Diploma in Forensic Archaeology and International Crime Scene Investigations, Bournemouth University. This training focused on the scientific and forensic recovery of human remains and personal effects after mass fatality incidents.

Publications

Penny has published several first author papers in peer-reviewed journals, which focused past climate change and Southern Ocean circulation changes over the past 30 million years.

Referred publications:

Cooke, P.J., Nelson, C.S., Crundwell, M.P. and Spiegler, D., 2002: *Bolboforma* as monitors of Cenozoic palaeoceanographic changes in the Southern Ocean. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 188:73-100.

Cooke, P.J., Nelson, C.S., Crundwell, M.P., Field, B.D., Elkington, E.S. and Stone, H.S., 2004: Textural variations in Neogene pelagic carbonate ooze at DSDP Site 593, southern Tasman Sea, and their palaeoceanographic implications. *New Zealand Journal of Geology and Geophysics*, 47:787-807.

Cooke, P.J., Nelson, C.S. and Crundwell, M.P., 2008: Miocene isotope zones, paleotemperatures, and carbon maxima events at intermediate water-depth, Site 593, Southwest Pacific. *New Zealand Journal of Geology and Geophysics*, 51:1-22.

Crundwell, M.P., Cooke, P.J., Nelson, C.S. and Spiegler, D., 2005: Intraspecific morphological variation in late Miocene *Bolboforma* and implications for their classification, ecology and biostratigraphic utility. *Marine Micropaleontology*, 56:161-176.

Nelson, C.S., Cooke, P.J., Hendy, C.H. and Cuthbertson, A.M., 1993: Oceanographic and climatic changes over the past 160,000 years at Deep Sea Drilling Project Site 594 off southeastern New Zealand, southwest Pacific Ocean. *Paleoceanography*, 8:435-458.

Nelson, C.S. and Cooke, P.J., 2001: History of oceanic front development in the New Zealand sector of the Southern Ocean during the Cenozoic - a synthesis. *New Zealand Journal of Geology and Geophysics*, 44:537-555.

Stokes, D.J., Healy, T.R. and Cooke, P.J., 2009: Surface elevation changes and sediment characteristics of intertidal surfaces undergoing mangrove expansion and mangrove removal, Waikaraka Estuary, Tauranga Harbour, New Zealand. *International Journal of Ecology & Development*, 12:88-106.

Edited books:

Campbell, K., Cooke, P., Lynne, B., Nyman, S. and Cary, C., 2008: Life in Extremes. *In*: Graham, I.J. ed. *A Continent on the Move - New Zealand Geoscience into the 21st Century*. Wellington, The Geological Society of New Zealand in association with GNS Science. Pp. 244-247.

Cooke, P.J., Pavlivica, S. and Hobden, B.J. eds: 2005: *AWIS Programme and Abstracts*. Hamilton, Association for Women in the Sciences. 43 p.

Hall, J., Broadgate, W., Cooke, P., Hamilton, C., Urban, E. and Young, W. eds: 2005: *IMBER (2005) Science Plan and Implementation Strategy*, IGBP Report No. 52. Stockholm, IGBP Secretariat. 76 p.

Lowe, D.J., Cooke, P.J. and Pallentin, A. eds: 2001: *Abstracts and Programme, GSNZ Annual Conference 2001 "Advances in Geosciences"*, Geological Society of New Zealand Miscellaneous Publication 110A. Hamilton.

Field guides & public education publications:

Campbell, A., Cooke, P., Earl, K. and Otrell-Cass, K., 2004: A New Zealand "Evolution for Teaching" online resource, *Teaching Earth Sciences*. 29. Pp. 31-32.

Cass, K. and Cooke, P.J., 2000: *Fieldguide Active Earth New Zealand*, 22-29 January 2000, GeoSciEd III Conference, Sydney, Australia. Pp. 32.

Cooke, P.J. and Hendy, A., 2002: Selected Mesozoic and Cenozoic faunas and landscapes, North Island of New Zealand, 29 June - 4 July. *Pre-5 Field Excursion Guidebook*, First International Palaeontological Congress, IPC2002 - Australasia, Macquarie University, Sydney, Australia. Pp. 20.

Cooke, P.J. and Nelson, C.S., 2003: Fossilised shells show Tasman Sea temperature changes, *Marsden Fund Update, Newsletter of the Marsden Fund*. 23. Pp. 11.

Neil, H., Cooke, P. and Northcote, L., 2005: The life and death of planktonic foraminifera, *Water & Atmosphere*. 13. Pp. 18-19.

Otrell-Cass, K., Earl, K., Campbell, A. and Cooke, P., 2005: *Evolution for Teaching Website evaluation report*, *NZ Science Teacher*. 109. Pp. 27-29.

Membership of Professional Bodies

Independent Forensic Practitioners Institute (NZ)	Foundation member 2006 to 2009
Geological Society of New Zealand	1986 to 2010
GSNZ National Committee	2003-2006
Association for Women in the Sciences	1996 - 2006
Royal Society of New Zealand	2004 to 2008
Geological Society of London (forensic geology group)	2007 to 2009
Kenyon International Emergency Services – Team member	Sept 2007 to Jun 2009
Blake Emergency Services – Team member	Sept 2009 to present

Scientific and Consultancy Employment

- Aug 2003 to Aug 2006 Gary Comer Science Foundation postdoctoral research fellow in abrupt climate change, University of Waikato, New Zealand.
- Nov 2002 to Aug 2003 Postdoctoral research assistant to chairperson of IMBER project (part of the International Geosphere Biosphere Programme)

Academic and Teaching Career

- Mar 1996 to Nov 2002 Tutor, Department of Earth & Ocean Science, University of Waikato, New Zealand

Particular Scientific Expertise and Experience

Damage to the following commodities:
Carbonate rocks and minerals

Pre-shipping and cargo preparation of fresh fruit and flowers

Grain size analysis
Geochemical analysis