Andrew Philip ROBERTS

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APPOINTMENTS

2010–present: Professor, Research School of Earth Sciences, Australian National University, Canberra, Australia
2012–2017: Dean, College of Physical and Mathematical Sciences, Australian National University (responsible for 5 Research Schools and 2 centres)
2011–2015: Guest Professor, Center for Advanced Marine Core Research, Kochi University, Japan
2010–2012: Director, Research School of Earth Sciences, Australian National University
2005–2009: Head, School of Ocean and Earth Science & Associate Director, National Oceanography Centre, University of Southampton, Southampton, UK
1996–2010: Professor (2003-2010), Reader (1999-2003), Lecturer (1996-1999), National Oceanography Centre, University of Southampton
1993–1996: Assistant Research Geophysicist and Lecturer, Department of Geology, University of California, Davis, USA
1993–1996: Adjunct Research Scientist, US Geological Survey
1991–1993: Post-Doctoral Researcher, Department of Geology, Univ. California, Davis, USA
1991: Post-Doctoral Researcher, Centre des Faibles Radioactivités, Gif-sur-Yvette, France

ACADEMIC QUALIFICATIONS

1985: BSc, Earth Sciences & Mathematics, Massey University, Palmerston North, New Zealand
1986: BSc (Hons) (First Class), Geophysics, Victoria University of Wellington, New Zealand
1990: PhD, Geophysics, Victoria University of Wellington, New Zealand.
2009: DSc, Victoria University of Wellington, New Zealand

RESEARCH EXPERTISE

Paleomagnetism, rock magnetism and environmental magnetism applied to studies of climate and environmental change, geomagnetic field behavior, geochronology, and tectonics.

KEY PUBLICATIONS (from 287 papers in peer-reviewed journals; >21,800 citations in Google Scholar)

Verosub, K.L. & **A.P. Roberts**, Environmental magnetism: past, present, and future, *Journal of Geophysical Research*, 100: 2,175-2,192, 1995.

Roberts, A.P., Magnetic properties of sedimentary greigite (Fe_3S_4), *Earth and Planetary Science Letters*, 134: 227-236, 1995.

Pike, C.R., **A.P. Roberts** & K.L. Verosub, Characterizing interactions in fine magnetic particle systems using first order reversal curves, *Journal of Applied Physics,* 85: 6660-6667, 1999.

Roberts, A.P., C.R. Pike & K.L. Verosub, First-order reversal curve diagrams: a new tool for characterizing the magnetic properties of natural samples, *Journal of Geophysical Research*, 105: 28,461-28,475, 2000.

Naish, T.R., et al. (incl. **A.P. Roberts**), Orbitally induced oscillations in the East Antarctic Ice Sheet at the Oligocene/Miocene boundary, *Nature,* 413: 719-723, 2001.

Larrasoaña, J.C., **A.P. Roberts**, E.J. Rohling, M. Winklhofer & R. Wehausen, Three million years of monsoon variability over the northern Sahara, *Climate Dynamics*, 21: 689-698, 2003.

Eldrett, J.S., I.C. Harding, P.A. Wilson, E. Butler & **A.P. Roberts**, Continental ice in Greenland during the Eocene and Oligocene, *Nature*, 446: 176-179, 2007.

Roberts, A.P., Geomagnetic excursions: knowns and unknowns, *Geophysical Research Letters*, 35: L17307, doi:10.1029/2008GL034719, 2008.

Rowan, C.J., **A.P. Roberts** & T. Broadbent, Reductive diagenesis, magnetite dissolution, greigite growth and paleomagnetic smoothing in marine sediments: a new view, *Earth and Planetary Science Letters*, 277: 223-235, 2009.

Rohling, E.J., K. Grant, M. Bolshaw, **A.P. Roberts**, M. Siddall, C. Hemleben & M. Kucera, Antarctic temperature and global sea level closely coupled over the past five glacial cycles, *Nature Geoscience*, 2: 500-504, 2009.

Roberts, A.P. & R. Grün, Early human northerners, *Nature*, 466: 189-190, 2010.

Roberts, **A.P.,** L. Chang, C.J. Rowan, C.-S. Horng & F. Florindo, Magnetic properties of sedimentary greigite (Fe_3S_4): an update, *Reviews of Geophysics*, 49: RG1002, doi:10.1029/2010RG000336, 2011.

Roberts, A.P., et al., Magnetotactic bacterial abundance in pelagic marine environments is limited by organic carbon

flux and availability of dissolved iron, *Earth and Planetary Science Letters,* 310: 441-452, 2011.

Lowe, J., et al. (incl. **A.P. Roberts**), Volcanic ash layers illuminate the resilience of Neanderthals and early modern humans to natural hazards, *Proceedings National Academy of Sciences, USA*, 109: 13532-13537, 2012.

Roberts, A.P., L. Chang, D. Heslop, F. Florindo & J.C. Larrasoaña, Searching for single domain magnetite in the 'pseudo-single-domain' sedimentary haystack: Implications of biogenic magnetite preservation for sediment magnetism and relative paleointensity determinations, *Journal of Geophysical Research*, 117: B08104, 2012.

Liu, Q.S., **A.P. Roberts**, J.C. Larrasoaña, S.K. Banerjee, Y. Guyodo, L. Tauxe & F. Oldfield, Environmental magnetism: principles and applications, *Reviews of Geophysics*, 50: RG4002, doi:10.1029/2012RG000393, 2012.

Grant, K.M. et al. (incl. **A.P. Roberts**), Rapid coupling between ice volume and polar temperature over the past 150,000 years, *Nature*, 491: 744-747, 2012.

Roberts, A.P., L. Tauxe & D. Heslop, Magnetic paleointensity stratigraphy and high-resolution Quaternary geochronology: successes and future challenges, *Quaternary Science Reviews*, 61: 1-16, 2013.

Rohling, E.J. (incl. **A.P. Roberts**), Sea-level and deep-sea-temperature variability over the past 5.3 million years, *Nature*, 508: 477-482, 2014.

Grant, K.M. et al. (incl. **A.P. Roberts**), Sea-level variability over five glacial cycles, *Nature Communications*, 5: 5076, doi:10.1038/ncomms6076, 2014.

Roberts, A.P., D. Heslop, X. Zhao & C.R. Pike, Understanding fine magnetic particle systems through use of first-order reversal curve diagrams, *Reviews of Geophysics*, 52: 557-602, 2014.

Marino, G. et al. (incl. **A.P. Roberts**), Bipolar seesaw control on last interglacial sea level, *Nature*, 522: 197-201, 2015.

Roberts, A.P., Magnetic mineral diagenesis, *Earth-Science Reviews*, 151: 1-47, 2015.

Roberts, A.P. et al., Resolving the origin of pseudo-single domain magnetic behavior, *Journal of Geophysical Research: Solid Earth*, 122: 9534-9558, 2017.

Roberts, A.P. et al., A critical appraisal of the 'Day' diagram, *Journal of Geophysical Research: Solid Earth*, 123: 2618-2644, 2018.

Roberts, A.P. et al., Domain state diagnosis in rock magnetism: evaluation of potential alternatives to the Day diagram, *Journal of Geophysical Research: Solid Earth*, 124: 5286-5314, 2019.

Roberts, A.P. et al., Hematite (α-Fe_2O_3) quantification in sedimentary magnetism: limitations of existing proxies and ways forward, *Geoscience Letters*, 7: 8, doi:10.1186/s40562-020-00157-5, 2020.

Jiang, Z.X. (incl. **A.P. Roberts**), The magnetic and color reflectance properties of hematite: from Earth to Mars, *Reviews of Geophysics*, 60: e2020RG000698, 2022.

Roberts, A.P. et al., Unlocking information about fine magnetic particle assemblages from first-order reversal curve diagrams: recent advances, *Earth-Science Reviews*, 227: 103950, 2022.

HONORS AND DISTINCTIONS

2022: Mawson Medal and Lecture, Australian Academy of Science
2020: Edward Bullard Lecturer, American Geophysical Union
2019: Axford Medal, Asia Oceania Geoscience Society
2018–2019: Excellent researcher, Geological Survey of Japan, Tsukuba, Japan
2013: Honorary Fellow, Royal Society of New Zealand
2013: Fellow, American Geophysical Union
2010–present: Listed in Who's Who in the World
2009–2010: Japan Society for the Promotion of Science Senior Invited Fellow
2001: Philip Leverhulme Prize
2000: U.S. National Science Foundation Antarctic Service Medal
1989: Royal Society of New Zealand Young Scientists' Award
1987–1990: New Zealand University Grants Committee Postgraduate Scholarship

PROFESSIONAL SOCIETY MEMBERSHIPS

AGU, EGU, Geological Society of Australia

KEYNOTE/INVITED LECTURES

Keynote or invited speaker at >100 conferences and >30 institutions in 25 countries; convenor or co-convenor of >30 conference sessions or conferences.

RESEARCH FUNDING

Total career research funding: >$A35 Million.

STUDENTS AND POST-DOCTORAL RESEARCHERS SUPERVISED

MSc: 12 completed; **PhD:** 22 completed. **Post-docs:** 30 supervised.