# Dr. CHRISTOPHER JAMES ROWAN

Assistant Professor (NTT), Department of Geology, Kent State University

## PERSONAL DETAILS

**Age:** 34

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## RESEARCH INTERESTS

I am primarily interested in reconstructing patterns and processes of tectonic deformation. I currently specialise in paleomagnetism, rock magnetism, and plate kinematics, but I also have a strong grounding in geophysics, structural geology, and sediment geochemistry.

## CURRENT POSITION

Assistant Professor (NTT), Kent State University **Jan 2013 – Present**

Hybrid research-teaching non-tenure track professorship.

## PREVIOUS POSITONS

CIFAR Postdoctoral Fellow, University of Chicago **Nov 2010 – Nov 2012**

Funded by the Canadian Institute For Advanced Research; research on coupling between mantle convection and global plate motions.

Marie Curie Fellow, University of Edinburgh **Nov 2008 – Nov 2010**

Funded as part of EC Marie Curie Excellence Grant awarded to investigate late Neoproterozoic low-latitude glaciations.

Postdoctoral Researcher, University of Johannesburg **Feb 2007 – Nov 2008**

Working in the Paleoproterozoic Mineralization Research Group; research on Neoarchean sequences on the Kaapvaal Craton. Partially supported by an NRF Postdoctoral Fellowship.

Research Technician, NOCS **Oct 2005 –Feb 2007**

Ran paleomagnetic laboratory at National Oceanography Centre, Southampton and provided teaching cover for Head of School.

## EDUCATION AND DEGREES

**National Oceanography Centre, Southampton** **2001-2005**

PhD in Geology, awarded February 2006. Dissertation title: 'Neogene paleomagnetism and geodynamics of the Hikurangi Margin, New Zealand'.

**University of Cambridge** **1997-2001**

MSci (1st class) & MA (1st class), Geological Sciences. Dissertation on Palaeozoic reconstructions of peri-Gondwanan terranes; independent mapping project in Paleozoic of North Wales. Awarded Dr Stoneley's Prize for Geology/Geophysics, a Foundation scholarship, and a College Prize for exam performance.

**Colchester Royal Grammar School** **1991-1997**

A-Levels: Physics (A), Maths (A), Chemistry (B), Biology (A), General Studies (A).

## PUBLICATIONS

Roberts, A.P., *et al.,* 2011. Magnetic properties of sedimentary greigite (Fe3S4): an update. Reviews of Geophysics, Vol. 49, RG1002.

Rowan, C.J. *et al.*, 2009. Reductive diagenesis, magnetite dissolution, greigite growth and paleomagnetic smoothing in marine sediments: A new view. EPSL, Vol. 227, 223-235.

Chang, L. *et al.*, 2009. Low-temperature magnetic properties of greigite (Fe3S4). Geochem. Geophys. Geosyst., Vol. 10, Q01Y04.

Rowan, C.J., and Roberts, A.P., 2008. Widespread remagnetizations and a new view of Neogene tectonic rotations within the Australia-Pacific plate boundary zone, New Zealand. JGR, Vol.113, B03103.

Chang, L., *et al.*, 2007. Magnetic characteristics of synthetic pseudo-single-domain and multi-domain greigite (Fe3S4). GRL, Vol. 34, L24304.

Roberts, A.P., *et al.*, 2007, High-resolution evidence for dynamic transitional geomagnetic field behaviour from a miocene reversal, McMurdo Sound, Ross Sea, Antarctica. Earth Planets Space, Vol. 59, p815-824.

Rowan, C.J., and Roberts, A.P., 2006. Magnetite dissolution, diachronous greigite formation, and hematite growth from pyrite oxidation: unravelling complex magnetizations in Neogene marine sediments from New Zealand. EPSL, Vol. 241, p119-137.

Roberts, A.P., *et al.*, 2006. Characterization of hematite (alpha-Fe2O3), goethite (alpha-FeOOH), greigite (Fe3S4), and pyrrhotite (Fe7S8) using first-order reversal curve diagrams. JGR, Vol.111, B12S35.

Rowan, C.J., and Roberts, A.P., 2005. Tectonic and geochronological implications of variably timed magnetizations carried by authigenic greigite in marine sediments from New Zealand. Geology, Vol. 33 p553-556.

Rowan, C.J. et al., 2005. Relocation of the tectonic boundary between the Raukumara and Wairoa domains (East Coast, North Island, New Zealand): implications for the rotation history of the Hikurangi margin. NZ J. Geol. and Geophys., Vol. 48, p185-196.

## CONFERENCES & INVITED TALKS

Rowan, C.J. & Rowley, D.B., 2012. Spreading behaviour of the Pacific-Farallon ridge system between 83 and 28 Ma. AGU Fall Meeting.

University of North Carolina, Charlotte, Feb 2012. Deep Mantle Contributions to Global Plate Motions: Insights from the Kinematics and Dynamics of the East Pacific Rise. (Invited talk)

Kent State University, Ohio, Feb 2012. Rotations, Reversals & Remagnetisations: Paleomagnetic adventures in New Zealand, South Africa and Oman. (Invited talk)

Rowan, C.J. & Rowley, D.B., 2011. Kinematics of Mid-Ocean Ridge Relative Motions in the Indo-Atlantic Frame of Reference: Passive and Active Spreading Ridges. AGU Fall Meeting.

Rowan, C.J. & Roberts, A.P., 2011. Widespread remagnetizations associated with sedimentary greigite (Fe3S4): Implications for Neogene tectonic rotations within the Australia-Pacific plate boundary zone, New Zealand. AGU Fall Meeting (invited talk).

East-West University, Chicago, May 2011. The Great East Japan Earthquake: a warning for Cascadia? (invited talk)

Rowan, C.J. & Tait, J., 2010. Oman's low latitude "Snowball Earth" pole revisited: Late Cretaceous remagnetisation of Late Neoproterozoic carbonates in Northern Oman. AGU Fall Meeting, San Francisco.

Floyd, J. & Rowan, C.J. 2010. Earth Science, Web 2.0+, and Geospatial Applications. ScienceOnline 2010, North Carolina

University of North Carolina, Charlotte, Jan 2010. In search of good paleomagnetic data. (Invited talk)

Trinity College, Dublin, Nov 2009. In search of good paleomagnetic data: the good, the bad, the ugly – and how to tell the difference. (Invited talk)

Rowan, C.J. et al., 2008. A palaeomagnetic investigation of the Neoarchean Pongola Supergroup, South Africa. AAPG International Conference, Cape Town.

University of Cape Town, Oct 2008. Paleomagical adventures in the Southern Hemisphere. (Invited talk)

Rowan, C.J. & Roberts, A.P., 2004. Rotation of the Hikurangi Margin, East Coast, New Zealand: Reconciling Long-Term Deformation Patterns Indicated by Paleomagnetic and Magnetic Fabric Data With the Short-Term Velocity Field. AGU Fall Meeting, San Francisco.

Rowan, C.J. & Roberts, A.P., 2004. Tectonic rotation of the Hikurangi Margin, East Coast, New Zealand: new constraints from paleomagnetic and magnetic fabric data. $Geo^3$ Meeting, Taupo, New Zealand.

Woodcock, N.H. & Rowan, C.J. 2000. Too much clean sand on the Cambro-Ordovician rim of Gondwana? British Sedimentological Research Group Annual Meeting, Loughborough University.

## TEACHING EXPERIENCE

Kent State University: Lecture courses in Geophysics (2012) and Earth Dynamics (2012).

University of Edinburgh: Lectures in Geomagnetism (2009).

University of Southampton: Lectures in Kinematics (2006-7), Exploration Geophysics (2006-7) and Formation & Evolution of the Ocean Crust (2007). Teaching/Laboratory assistant in Earth Materials (2001) and Structural Geology (2001-2004).

I have co-supervised PhD and Masters projects in paleomagnetism and environmental magnetism, and spent 2 years supervising undergraduate mapping dissertations(including field supervision, marking and oral examinations).

Extensive experience of teaching on undergraduate field courses (Spain, Anglesea, South Wales, Dorset Coast, South Africa, Scotland).

## OTHER RELEVANT SKILLS AND ACHIEVEMENTS

Winner, 2009 Ramsay Medal. Awarded annually by the Tectonics Study Group of the Geological Society of London for the best publication to appear within two years of a doctoral award.

Peer-reviewer for Earth and Planetary Science Letters, Geophysical Research Letters, G-Cubed, Journal of the Royal Society, London, American Journal of Science and Newsletters on Stratigraphy.

In addition to standard computing skills on Windows, Mac & Linux, I have a working knowledge of HTML, LaTeX, MatLab, Perl, Python, Fortran, Tcl and R.

I am a firm believer in the value of scientific outreach. I have founded and contribute to Highly Allochthonous (http://all-geo.org/highlyallochthonous), which averages >30,000 page views a month, have written articles for Earth Magazine and the Scientific American website, and been involved in National Science week in the UK.

Secretary of the NOC postgraduate committee from 2001-2003.

Student representative, Cambridge departmental teaching liaison committee, 2000-2001.

## REFERENCES

**Prof. Andrew P Roberts**

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**Prof. David Rowley**

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