



- Home
- Undergraduate Admissions
- Graduate Admissions
- People
- Research
- Undergraduate Course
- Graduate Course
- Alumni
- Development
- Links
- News and Events
- About Us
- Intranet

Home » People » Academic Staff » Ros Rickaby

Dr Ros Rickaby

Professor of Biogeochemistry

Email: rosalind.rickaby@earth.ox.ac.uk
TEL: +44 (1865) 272034
FAX: +44 (1865) 272072
Homepage: <http://oceanbug.earth.ox.ac.uk>



Research Profile

I am fascinated by the jigsaw of complex interactions between the evolution of mineralising organisms, ocean chemistry, atmospheric composition and Earth's climate. The extraction of chemical signatures from fossil shells of marine micro-organisms as a tool for constraining past ocean conditions and their influence on climate, on timescales ranging from hundreds to millions of years, is fundamental to my research. Seeking innovative alternative approaches to constraining past climates has increasingly directed my research towards an understanding of the physiological response of phytoplankton to the changing carbon cycle in the past and for the future.

Teaching Profile

My teaching currently ranges from the fundamentals of chemistry, stable isotope geochemistry and the evolution of climate on long and short timescales.

Selected Publications

- Young, JN, Rickaby, RE, Kapralov, MV, Filatov, DA, (2012) 'Adaptive signals in algal Rubisco reveal a history of ancient atmospheric carbon dioxide.', *Philos Trans R Soc Lond B Biol Sci.* pp. 483-492 doi: [10.1098/rstb.2011.0145](https://doi.org/10.1098/rstb.2011.0145)
- Lu, Z, Rickaby, REM, Kennedy, H, Kennedy, P, Pancost, RD, Shaw, S, Lennie, A, Wellner, J, Anderson, JB, (2012) 'An ikaite record of late Holocene climate at the Antarctic Peninsula', *EARTH AND PLANETARY SCIENCE LETTERS.* pp. 108-115 doi: [10.1016/j.epsl.2012.01.036](https://doi.org/10.1016/j.epsl.2012.01.036)
- Beaufort, L, Probert, I, de Garidel-Thoron, T, Bendif, EM, Ruiz-Pino, D, Metzl, N, Goyet, C, Buchet, N, Coupel, P, Grelaud, M, Rost, B, Rickaby, REM, de Vargas, C, (2011) 'Sensitivity of coccolithophores to carbonate chemistry and ocean acidification', *NATURE.* pp. 80-83 doi: [10.1038/nature10295](https://doi.org/10.1038/nature10295)
- Scroxton, N, Bonham, SG, Rickaby, REM, Lawrence, SHF, Hermoso, M, Haywood, AM, (2011) 'Persistent El Nino-Southern Oscillation variation during the Pliocene Epoch', *PALEOCEANOGRAPHY.* pp. n/a-n/a doi: [10.1029/2010PA002097](https://doi.org/10.1029/2010PA002097)
- Bots, P, Benning, LG, Rickaby, REM, Shaw, S, (2011) 'The role of SO4 in the switch from calcite to aragonite seas', *GEOLOGY.* pp. 331-334 doi: [10.1130/G31619.1](https://doi.org/10.1130/G31619.1)
- Hendry, KR, Georg, RB, Rickaby, REM, Robinson, LF, Halliday, AN, (2011) 'Deep ocean nutrients during the Last Glacial Maximum deduced from sponge silicon isotopic compositions (vol 292, pg 290, 2010)', *EARTH AND PLANETARY SCIENCE LETTERS.* pp. 253-254 doi: [10.1016/j.epsl.2010.12.023](https://doi.org/10.1016/j.epsl.2010.12.023)
- Horner, TJ, Rickaby, REM, Henderson, GM, (2011) 'Isotopic fractionation of cadmium into calcite', *EARTH AND PLANETARY SCIENCE LETTERS.* pp. 243-253 doi:

- Lu, Z, Jenkyns, HC, Rickaby, REM, (2010) 'Iodine to calcium ratios in marine carbonate as a paleo-redox proxy during oceanic anoxic events', *GEOLOGY*. pp. 1107-1110 doi: [10.1130/G31145.1](https://doi.org/10.1130/G31145.1)
- Rickaby, REM, Elderfield, H, (2010) 'Evidence for elevated alkalinity in the glacial Southern Ocean (vol 25, PA1209, 2010)', *PALEOCEANOGRAPHY*. pp. doi: [10.1029/2010PA001970](https://doi.org/10.1029/2010PA001970)
- Iglesias-Rodriguez, MD, Halloran, PR, Rickaby, REM, Hall, IR, Colmenero-Hidalgo, E, Gittins, JR, Green, DRH, Tyrrell, T, Gibbs, SJ, von Dassow, P, Rehm, E, Armbrust, EV, Boessenkool, KP, (2008) 'Phytoplankton calcification in a high-CO2 world', *SCIENCE*. pp. 336-340 doi: [10.1126/science.1154122](https://doi.org/10.1126/science.1154122)
- Henderiks, J, Rickaby, REM, (2007) 'A coccolithophore concept for constraining the Cenozoic carbon cycle', *BIOGEOSCIENCES*. pp. 323-329
- Rickaby, REM, Shaw, S, Bennitt, G, Kennedy, H, Zabel, M, Lennie, A, (2006) 'Potential of ikaite to record the evolution of oceanic delta O-18', *GEOLOGY*. pp. 497-500 doi: [10.1130/G22413.1](https://doi.org/10.1130/G22413.1)
- Rickaby, REM, Halloran, P, (2005) 'Cool La Nina during the warmth of the Pliocene?', *SCIENCE*. pp. 1948-1952 doi: [10.1126/science.1104666](https://doi.org/10.1126/science.1104666)
- Elderfield, H, Rickaby, REM, (2000) 'Oceanic Cd/P ratio and nutrient utilization in the glacial Southern Ocean', *NATURE*. pp. 305-310 doi: [10.1038/35012507](https://doi.org/10.1038/35012507)

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