

David P.G. Bond BSc, PhD, FGS

Personal details

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Born: 1979
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Profile

Over the past decade I have developed teaching and research interests in wide field of global palaeoenvironmental change, including palaeoecology, sedimentology, micropalaeontology, and sedimentary geochemistry. Specifically I investigate the record of large-scale global changes in the context of mass extinction studies. My second research focus in economic geology applies my sedimentological background to the study of placer gold deposits. Evidence of these diverse interests is provided by my 28 publications and my rapidly increasing “H” index of 8. Since completing my PhD in 2004, I have combined research fellowships and lectureships. During my most recent research fellowship I investigated the volcanism-environmental change-extinction link in the Middle Permian of South China, the first investigation of the cause-and-effect of major volcanism in the same stratigraphic sections. I have taught undergraduate and MSc courses in Sedimentology, Palaeontology, Hydrogeology, Hydrocarbon Geology, Sequence Stratigraphy, and more. My overall student feedback score for 2008/9 teaching was 1.3 / 5 (1 is highest), the best in the school. I am a passionate field geologist, and have taught all of the undergraduate field courses offered at Leeds (Pembroke, County Clare, NW Scotland, Yorkshire Coast, Lake District etc), recently developing a new dissertation project mapping area on the Isle of Skye.

I am driven by a desire to solve fundamental research problems in Earth Sciences, and to pass on my knowledge and enthusiasm to others through research-led teaching. My commitment to these ideals extends beyond the University environment: I provide classes for adults at a local community education centre, field trips and lectures for the Open University Geological Society, and I am involved in schools’ liaison activities, running activities like gold panning and rock fairs for children aged 5-16.

Employment history

September 2010 – present:

Researcher Skills Training Officer, University of Leeds, UK.

I have recently begun a new role in which I coordinate and deliver professional development training for PhD students and research staff across 7 different schools. This role utilises my time, people, and project management skills, as well as the delivery skills I have developed over the past few years. It is proving interesting to see the University from another angle, from within the Graduate School.

September 2006 – August 2010:

Research / Teaching Fellow, School of Earth and Environment, University of Leeds, UK.

My research involves two strands, one classically academic, one applied.

i. My principle research focuses on the causes of large-scale global change and mass extinctions, most recently the link between volcanism, environmental change, and the Middle Permian extinction in sections in China. By employing classic sedimentology and micropalaeontology within a framework of volcanic architecture, sequence stratigraphy, and isotope geology, we have made fundamental discoveries that have implications for a range of scientists studying Earth system dynamics. I am interested in novel proxies for past environments, and am applying redox proxies such as pyrite framboid analysis, Fe speciation, and Mo isotopes to Late Ordovician and Late Devonian sections. In particular I am evaluating the role of marine anoxia during those extinction events (supported by a Palaeontological Association grant).

ii. I am interested in the sedimentological controls on placer gold distribution. I have evaluated palaeoplacers in the Yukon as part of ongoing Canadian government / industry-funded projects which combine my sedimentology experience with colleagues’ expertise in chemistry and economic geology. The

project seeks to characterise the source and transport pathways of placer gold. I staked my own Klondike mine in 2009, which sits on a C\$1 million reserve, but I do not own a bulldozer and do not expect to get rich.

My teaching involves all aspects of module design, delivery, and management of a range of undergraduate modules in Palaeontology, Sedimentology, and Hydrocarbon Geology. I am heavily involved in teaching field geology, leading field courses and supervising dissertation mapping projects. My student feedback for 2008/09 rated my "Teaching Quality" as 1.37 / 5 (1 is the highest possible), and my "Teaching Enthusiasm" as 1.29 / 5. Last year I was pipped into second place for the "Most Memorable Lecturer" award by an absolute legend amongst our teaching staff. Away from teaching and research, I organise institute seminars, which attract many key names from across the Earth Sciences.

September 2004 – September 2006:

Teaching Fellow, School of Earth and Environment, University of Leeds, UK.

I taught a wide range of soft-rock and hydrocarbon geology modules on undergraduate and MSc (Exploration Geophysics) programs. My formative teaching experience helped me to develop a confident, enthusiastic, and personable style. I remained research active, publishing several papers from my PhD.

September 2005 – present:

Part-time tutor, Workers' Educational Association, various venues, Yorkshire, UK.

I provide evening classes in Basic Geology for the WEA, a voluntary provider of adult learning.

April 2004 – September 2004:

Higher Scientific Officer, Pesticides Safety Directorate (Defra), York, UK.

I analysed and reported to government on data sets from laboratory and field tests on pesticides and other poisons to assess their fate in the environment and their safety.

Education, qualifications, and membership of professional bodies

ULTA2 course: I am halfway to gaining my Teaching Award (Professional Standard 2).

PhD: "Oceanographic changes during the Late Devonian mass extinction" (awarded Feb 2004).

BSc: Environmental Geology (2.1 Hons) (awarded June 2000).

Both awarded by: School of Earth Sciences, University of Leeds, UK.

Fellow of the Geological Society of London. Member of the Palaeontological Association (UK). Fully first aid trained. Clean UK drivers licence with minibus provision.

Recent grants and awards

Spring 2011: NERC Small Grant (£65000) with Prof. Paul Wignall (Leeds) to fund Spitsbergen expeditions during July 2011 and 2012, to examine the palaeoecology and sedimentary geochemistry of the Permian Kapp Starostin Formation. This is collaboration with the Norwegian Polar Institute.

Summers 2006 /2009: Yukon Geological Survey / Canadian government grants (total C\$25'000) to fund fieldwork and sample analysis to assess a potential resource of fine gold in the Klondike, Yukon.

April 2009: Palaeontological Association Research Grant (£5000) to fund project "What killed the Devonian Reefs", which involves ongoing fieldwork in Canada and Australia.

September 2006: NERC Grant (UK) to PI Paul Wignall, funding most recent Research Fellowship.

I am eligible for a NERC New Investigator's grant, and have experience of NERC, Royal Society, Marie Curie, and Leverhulme funding applications.

Publications

I have 28 papers published / submitted. For full details, see <http://homepages.see.leeds.ac.uk/~eardpgb/>

Song, H.-J., Wignall, P.B., Tong, J., **Bond, D.P.G.**, Song, H.-Y., Lai, X.-L., Zhang, K.-X., Wang, H.-M., Chen, Y.-L., Xiong, Y.-L., Tian, L. (submitted). Geochemical evidence from bio-apatite for a link between redox history and recovery from the end-Permian extinction. *Nature Geoscience*.

Wignall, P.B., **Bond, D.P.G.**, Haas, J., Wang, W., Jiang, H.-S., Lai, X.-L., Altiner, D., Védérine, S., Hips, K., Zajzon, N., and Newton, R.J. (*in review*). The Capitanian (Middle Permian) mass extinction in western Tethys: a fossil, facies and $\delta^{13}\text{C}$ study from Hungary and Hydra Island (Greece). *Palaios*.

Song, H.-J., Wignall, P.B., Chen, Z.-Q., Tong, J., **Bond, D.P.G.**, Lai, X.-L., Zhao, X.-M., Jiang, H.-S., Yang, C.-B., Niu, Z.-J., Chen, J., Yang, H., and Wang, Y.B. (*in press*). Recovery tempo and pattern of marine ecosystems after the end-Permian mass extinction. *Geology*.

Stevens, L.G., Hilton, J., **Bond, D.P.G.**, Glasspool, I.J., and Jardine, P.E. (2011). Radiation and extinction patterns in Pennsylvanian-Permian floras from North China as indicators for environmental and climate change. *Journal of the Geological Society* 168, 607-619.

Racka, M., Marynowski, L., Filipiak, P., Sobstel, M., Piszczowska, A., and **Bond, D.P.G.** (2010). The Late Famennian Annulata Events in the Holy Cross Mountains (Southern Poland): geochemical and palaeontological record. *Palaeogeography, Palaeoclimatology, Palaeoecology* 297, 549-575.

Bond, D.P.G., Hilton, J., Wignall, P.B., Ali, J.R., Stevens, L.G., Sun, Y.-D., and Lai, X.-L. (2010). The Middle Permian (Capitanian) mass extinction on land and in the oceans. *Earth Science Reviews* 102, 100-116.

Dahl, T.W., Hammarlund, E., Anbar, A.D., **Bond, D.P.G.**, Gill, B.C., Gordon, G.W., Knoll, A.H., Nielsen, A.T., Schovsbo, N.H., and Canfield, D.E. (2010). A Devonian rise of atmospheric oxygen correlated to the rise of terrestrial plants and predatory fish. *Proceedings of the National Academy of Science* 107, 17911-17915.

Sun, Y.-D., Lai, X.-L., Wignall, P.B., Widdowson, M., Ali, J.R., Jiang, H.-S., Wang, W., Yan, C.-B., and **Bond, D.P.G.** (2010). Dating the onset and nature of the Middle Permian Emeishan large igneous province eruptions in SW China using conodont biostratigraphy and its bearing on mantle plume uplift models. *Lithos* 119, 20-33.

Bond, D.P.G., Wignall, P.B., Wang, W., Izon, G., Jiang, H.-S., Lai, X.-L., Sun, Y.-D., Newton, R.J., Shao, L.-Y., Védérine, S., and Cope, H. (2010). The mid-Capitanian mass extinction and carbon isotope record of south China. *Palaeogeography, Palaeoclimatology, Palaeoecology* 292, 282-294.

Wignall, P.B., **Bond, D.P.G.**, Kuwahara, K., Kakuwa, Y., Newton, R.J., and Poulton, S.W. (2010). An 80 million year oceanic redox history from Permian to Jurassic pelagic sediments of the Mino-Tamba terrane, SW Japan, and the origin of four mass extinctions. *Global and Planetary Change* 79, 109-123.

Bond, D.P.G., and Wignall, P.B. (2010). Pyrite framboid study of marine Permo-Triassic boundary sections: a complex anoxic event and its relationship to contemporaneous mass extinction. *Geological Society of America Bulletin* 122, 1265-1279.

Chapman, R.J., **Bond, D.P.G.**, and LeBarge, W. (2010). Particle size distribution of gold within the Sulphur and Dominion Creek drainages, Klondike District, Yukon, and implications for gold winning and the formation of distal placers containing fine gold. *Yukon Exploration and Geology* 2009.

- Bond, D.P.G.**, and Wignall, P.B. (2009). Latitudinal selectivity of foraminifer extinctions during the end-Guadalupian crisis. *Paleobiology* 35, 465-483.
- Wignall, P.B., Sun, Y.-D., **Bond, D.P.G.**, Izon, G., Newton, R.J., Widdowson, M., Vedrine, S., Ali, J.R., Lai, X.-L., Jiang, H.-S., Cope, H., and Bottrell, S.H. (2009). Precise coincidence of explosive volcanism, mass extinction and carbon isotope fluctuations in the Middle Permian of China. *Science* 324, 1179-1182.
- Wignall, P.B., Vedrine, S., **Bond, D.P.G.**, Wang, W., Lai, X.-L., Ali, J.R., and Jiang, H.-S. (2009). Facies analysis and sea-level change at the Guadalupian-Lopingian Global Stratotype (Laibin, South China), and its bearing on the end-Guadalupian mass extinction. *Journal of the Geological Society* 166, 655-666.
- Chapman, R.J., Leake, R.C., **Bond, D.P.G.**, Stedra, V., and Fairgrieve, B. (2009). Chemical and mineralogical signatures of gold formed in oxidizing chloride hydrothermal systems and their significance within populations of placer gold grains collected during reconnaissance. *Economic Geology* 104, 563-585.
- Bond, D.P.G.**, and Wignall, P.B. (2009). Abridged version of "The role of sea-level change and marine anoxia in the Frasnian-Famennian (Late Devonian) mass extinction". *Palaeogeography, Palaeoclimatology, Palaeoecology*, 273, 365-367.
- Zatoń, M., Marynowski, L., Szczepanik, P., **Bond, D.P.G.**, and Wignall, P.B. (2009). Redox conditions during sedimentation of the Middle Jurassic (Upper Bajocian – Bathonian) clays of the Polish Jura (south-central Poland): an integrated approach. *Facies* 55, 103-114.
- Lai, X.-L., Wang, W., Wignall, P.B., **Bond, D.P.G.**, Jiang, H.-S., Ali, J.R., John, E.H., and Sun, Y.-D. (2008). Palaeoenvironmental change during the end-Guadalupian (Permian) mass extinction in Sichuan, China. *Palaeogeography, Palaeoclimatology, Palaeoecology* 269, 78-93.
- Bond, D.P.G.**, and Wignall, P.B. (2008). The role of sea-level change and marine anoxia in the Frasnian-Famennian (Late Devonian) mass extinction. *Palaeogeography, Palaeoclimatology, Palaeoecology* 263, 107-118.
- Wignall, P.B., and **Bond, D.P.G.** (2008). The end-Triassic and Early Jurassic mass extinction records in the British Isles. *Proceedings of the Geologists Association* 119, 73-84.
- Raiswell, R., Newton, R., Bottrell, S.H., Coburn, P.M., Briggs, D.E.G., **Bond, D.P.G.**, and Poulton, S.W. (2008). Turbidite depositional influences on the diagenesis of Beecher's Trilobite Bed and the Hunsrück Slate; sites of soft tissue pyritization. *American Journal of Science* 308, 105-129.
- Bond, D.P.G.**, and Chapman, R.J. (2006). Evaluation of the origins of gold hosted by the conglomerates of the Indian River Formation, Yukon, using a combined sedimentological and mineralogical approach, *Yukon Exploration and Geology* 2006, 93-104.
- Bond, D.** (2006). The fate of the homoctenids (Tentaculitoidea) during the Frasnian-Famennian mass extinction (Late Devonian). *Geobiology* 4, 167-177.
- Bond, D.**, and Wignall, P.B. (2005). Evidence for Late Devonian (Kellwasser) anoxic events in the Great Basin, western United States. In: Morrow, J., Over, J. and Wignall, P.B. (eds.), Understanding Late Devonian and Permian-Triassic biotic and climatic events: towards an integrated approach, *Developments in Palaeontology and Stratigraphy* 20, 225-261.

- Bond, D.**, Wignall, P.B., and Racki G. (2004). Extent and duration of marine anoxia during the Frasnian-Famennian (Late Devonian) mass extinction in Poland, Germany, Austria and France. *Geological Magazine* 141, 173-193.
- Racki, G., Piechota, A., **Bond, D.**, and Wignall, P.B. (2004). Geochemical and ecological aspects of lower Frasnian pyrite-ammonoid level at Kostomloty (Holy Cross Mountains, Poland). *Geological Quarterly* 48, 267-282.
- Bond, D.**, and Zaton M. (2003). Gamma-ray spectrometry across the Upper Devonian basin succession at Kowala in the Holy Cross Mountains (Poland). *Acta Geologica Polonica* 53, 93-99.