

Papers, books & book chapters*Published*

Bond, C.E. 2014. *Maps are interpretations*. In: M. Hall (ed.), 52 Things You Should Know About Geology. Agile Libre, Nova Scotia, Canada, pp. 54-55.

Mather, A.E., **Hartley, A.J.** & Griffiths, J.S. 2014. *The giant coastal landslides of Northern Chile: tectonic and climate interactions on a classic convergent plate margin*. Earth and Planetary Science Letters, 388, 249-256. DOI: 10.1016/j.epsl.2013.10.019.

Schellart, W.P. & **Rawlinson, N.** 2013. *Global correlations between maximum magnitudes of subduction zone interface thrust earthquakes and physical parameters of subduction zones*. Physics of the Earth and Planetary Interiors, 225, 41-67.

In Press/Accepted

Adewole, E. O. & Healy, D. *Quantifying in situ horizontal stress in the Niger Delta Basin, Nigeria*. Journal of Engineering Technology.

Addy, S., Soulsby, C. & **Hartley, A.J.** *Controls on the distribution of channel reach morphology in selectively glaciated catchments*. Geomorphology.

J. Parnell, J. Still, S. Spinks, W. Thayalan & S. Bowden. *Cadmium sulfide in a Mesoproterozoic terrestrial environment*. Mineralogical Magazine.

Rawlinson, N., Salmon, M. & Kennett, B.L.N. *Transportable seismic array tomography in southeast Australia: Illuminating the transition from Proterozoic to Phanerozoic lithosphere*. Lithos.

Rawlinson, N., Kennett, B.L.N. & Salmon, M. *Origin of lateral heterogeneities in the upper mantle beneath southeast Australia from seismic tomography*. In: A. Khan, F. Deschamps & K. Kawai (eds), The Earth's heterogeneous mantle. Springer.

Søren B. Nielsen, **Randell Stephenson** & Christian Schiffer. *Deep controls on intraplate basin inversion*. In: Intraplate Earthquakes, ed. Pradeep Talwani. Cambridge University Press.

Christian Schiffer, Niels Balling, Bo H. Jacobsen, **Randell A. Stephenson** & Søren B. Nielsen. *Seismological evidence for a fossil subduction zone in the East Greenland Caledonides*. Geology.

Funding

Dave Cornwell has won PhD funding from COPS for "Seismologically imaging the North Anatolian Fault Zone (Turkey) using multi-scale tomography methods for earthquake hazard assessment".

Adrian Hartley has secured funding of £550k for FSRG Phase 2.

Funding (cont'd ...)

Andrew Hurst reports that Taqa have joined Sand Injectites Phase 3, which now has 14 sponsors.

Ben Kneller reports that a group from Ocean College, Zhejiang University (Hangzhou, China) visited GPG and Oceanlab in early December, to discuss potential dual degree programs and joint PhDs. Oceanlab has agreed to fund two PhD projects supervised jointly with GPG. They have proposed setting up an Asian Research and Training Centre jointly with Aberdeen.

Presentations

Clare Bond presented a talk "*Methods to Minimize and Capture Uncertainty During Model Creation*". Geological Society of London Conference, Capturing uncertainty in geomodels: Best practices and pitfalls. December 2013.

Dave Cornwell convened a session at Fall AGU in San Francisco "*New Advances in Strike-Slip Fault Research*" and presented a poster on "*Seismologically Imaging The Northern Anatolian Fault, Turkey*" (available for viewing outside his office).

John Millett presented "*Magmatic dynamics and stratigraphy within the Faroe Islands Basalt Group: Can we correlate basalt?*" at VMSG.

Sam Spinks gave a talk titled "*Selenium & tellurium mineralisation in metamorphosed red beds, Munster Basin, Ireland*" at the annual Mineral Deposit Studies Group conference at Keble College, Oxford in January.

GPG made the following presentations at Fall AGU meeting in San Francisco in December:

- "*The stress field and its sources in the North Atlantic Realm and Europe*" by Christian Schiffer (Aarhus University), Søren Bom Nielsen (Aarhus University) & **Randell Stephenson**.
- "*The lithosphere of Ellesmere Island and adjacent northwestern Greenland (CALE "A" transect onshore)*" by **Randell Stephenson**, Christian Schiffer (Aarhus University) & Gordon Oakey (Geological Survey of Canada Atlantic).
- "*Crustal thickness and affinity in the southern Beaufort Sea from old deep seismic reflection profiles and gravity modelling and implications for Canada Basin evolution*" by **Lu Li & Randell Stephenson**.

GPG contributed the following presentations to the Tectonic Studies Group AGM in Cardiff, January 6-8th:

- "*Geometry and scaling relationships of deformation band lozenges and fault lenses*", **Abdullah Awdal**
 - "*Reservoir quality of Kurra Chine and Sehkaniyan Formations, Zagros Fold and Thrust Belt, Kurdistan*", **Abdullah Awdal**
 - "*Linking basin tectonics, evaporite facies variations and their impact on subsequent deformation: insights from the Messinian*", **Rob Butler**
 - "*Evolution of Sandstone Porosity during Normal Faulting*", **Natalie Farrell**
 - "*Polymodal fractures: A new angle on failure*", **Dave Healy**
 - "*Anisotropy of permeability in mylonites*", **Dave Healy**
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Presentations (cont'd ...)

- “*Monte Carlo or bust! Assessing the probability of failure*”, **Dave Healy**
- “*A fossil-geothermal reservoir: relationships between fractures and palaeofluids in the Terra Nera area (Elba Island, Italy)*”, **Roberto Rizzo**
- “*Field evidence of top seal failure? The Upper Miocene Sandstone Intrusions and the fracture network of 4-Miles Beach, Santa Cruz, California*”, **Roberto Rizzo**
- “*Modelling seismic velocity anisotropy in polymineralic evaporites*”, **Liliana Vargas Meleza**
- “*Fracture characterisation in folded Torridonian Group sandstone; an example from the Achnashellach Culmination, Moine Thrust Zone*”, **Hannah Watkins**

Esteem

Clare Bond presented as an invited expert on December 19th at the BGS to inform a report to DECC on geological uncertainty in the storage of radioactive waste, which she will input into.

Ben Kneller gave an invited paper entitled “*Stably stratified buoyancy-driven flows in the ocean; implications for sediment transport*” at the conference “Particle-Laden Flows in Nature” held at the Kavli Institute for Theoretical Physics at UC Santa Barbara, December 16-19.

Ben Kneller and **Pan Li** visited China between 13th and 23rd November, where Ben gave invited talks at Zhejiang University (Hangzhou), China University of Geosciences (Wuhan) and China University of Geosciences (Beijing). They also visited Petrochina's Hangzhou Research Institute of Geology, Petrochina Research Institute of Petroleum Exploration and Development in Beijing, Sinopec's Petroleum Exploration and Production Research Institute in Beijing, and met with representatives of CNOOC's research institutes in Beijing and Guangdong, to promote Chinese industry funding for Chinese PhD studentships in Aberdeen.

Nick Rawlinson has been named an Outstanding Reviewer for Geophysical Journal International, 2013.

Outreach, training, media

Nick Rawlinson was interviewed by BBC Radio 4 about his recent paper with Schellart (see above; Global correlations between maximum magnitudes of subduction zone interface thrust earthquakes and physical parameters of subduction zones), on January 16th.

Field

Sam Spinks conducted field work in County Cork, Ireland, in December.

Randell Stephenson has received an equipment loan from the Geophysical Equipment Pool GFZ Potsdam in Germany – of 170-210 one-component seismic recorders and ancillary equipment for controlled source WARR seismic profiling in Ukraine and Romania in August-September 2014.

Other

We have 2 new (i.e. previously un-announced!) PhD students: **Jon Basell** and **Maral Halliyeva** are funded by Senergy and COPS, and are working on glacial hydrocarbon reservoirs in the North Sea, co-supervised by Brice Rea, Matteo Spagnolo, **Stuart Archer**, **John Howell** and **Dave Cornwell**.

We have a new technical assistant in the Petrophysics lab, **Gonçalo Benitez Cunha**, from Portugal. Gonçalo will be with us for 6 months, helping us bring a range of new kit on stream including the fluid-saturated ultrasonics and high pressure permeability (water circuit, transient decay). Please make him welcome.

Andrew Hurst has co-authored "Preliminary report on the location, geology and nature of clay materials likely to be useful to the cement industry in the countries of the Arabian peninsula" with Jeff Wilson (Hutton Institute).

Ben Kneller & David Iacopini report that BP will donate a comprehensive subsurface dataset (4D seismic, wells, biostrat, production data) for the Loyal field. This is part of an on-going initiative to boost links between BP and the university.

Ben Kneller also reports that BP are releasing to us high-resolution geophysical datasets obtained for operational planning at four BP-operated Gulf of Mexico fields: Atlantis, Holstein, Mad Dog and Thunder Horse. Data types being released are: multibeam echo sounder data for detailed bathymetric mapping, sidescan sonar for seabed imaging, and sub-bottom profiler records.

Next copy deadline: March 20th, 2014

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