

Note

After 25 issues, the scope has now widened to include Earth Sciences in the School of Geosciences. Hence, a bumper 6 page issue 😊

And a bonus photo of a small-scale (about 20 cm across) drainage feature on Footdee beach.

Papers, books & book chapters*Published*

Adewole, E. O. & Healy, D. 2014. *Quantifying in situ horizontal stress in the Niger Delta Basin, Nigeria.* GSTF Journal of Engineering Technology, 2.

Capell, R., Tetzlaff, D., Essery, R. & Soulsby, C. 2014. *Projecting climate change impacts on stream flow regimes with tracer-aided runoff models - preliminary assessment of heterogeneity at the mesoscale.* Hydrological Processes. DOI: 10.1002/hyp.9612.

Farrell, N.J.C., Healy, D. & Taylor, C.W. 2014. *Anisotropy of permeability in faulted porous sandstones.* Journal of Structural Geology, 63, 50-67.

Malcolm, I.A., **Gibbins, C.**, Fryer, R.J., Keay, J., **Tetzlaff, D. & Soulsby, C.** 2014. *The influence of forestry on acidification and recovery: insights from long-term hydrochemical and invertebrate data.* Ecological Indicators, doi:10.1016/j.ecolind.2011.12.011.

Morton, A., McFadyen, S., **Hurst, A.**, Pyle, J., Rose, P. 2014. *Constraining the origin of reservoirs formed by sandstone intrusion: insights from heavy mineral studies of the Eocene in the Forties area, United Kingdom central North Sea.* AAPG Bulletin.

McArdle, N.J., **Iacopini, D.**, KunleDare, M.A. & Paton, G.S. 2014. *The use of geological expression workflows for basin scale reconnaissance: a case study from the Exmouth sub-basin, North Carnarvon basin, NW Australia.* Interpretation, 2, 163-177.

Macdonald, D.I.M., Healy, D. & Webber, G. 2014. *What is petrophysics, what does it do for the oil industry, and where is it heading?* Geoexplor, 11, 30-34.

McGrane, S.J., Tetzlaff, D. & Soulsby, C. 2014. *Influence of lowland aquifers and anthropogenic impacts on the isotope hydrology of contrasting mesoscale catchments.* Hydrological Processes. DOI: 10.1002/hyp.9610.

Barr, I. & **Spagnolo, M.** 2014. *Testing the efficacy of the glacial buzzsaw: insights from the Sredinny Mountains, Kamchatka.* Geomorphology, 206, 230-238.

Rüther, D., Andreassen, K. & **Spagnolo, M.** 2013. *Aligned glaciotectonic rafts on the central Barents Sea seafloor revealing extensive glaciotectonic erosion during the last deglaciation.* Geophysical Research Letters, 40, 1-5.

Published, continued...

Tetzlaff, D., Birkel, C., **Dick, J.**, Geris, J. & **Soulsby, C.** 2014. *Storage dynamics in hydrogeological units control hillslope connectivity, runoff generation and the evolution of catchment transit time distributions*. Water Resources Research. DOI: 10.1002/2013WR014147.

In Press/Accepted

Anudu, G.K., **Stephenson, R.A.** & **Macdonald, D.I.M.** *Using high-resolution aeromagnetic data to recognise and map intra-sedimentary volcanic rocks and geological structures across the Cretaceous middle Benue Trough, Nigeria*. Journal of African Earth Sciences.

Callow, R.T., **Kneller, B.**, Dykstra, M., McIlroy, D., 2014. *Physical, biological, geochemical and sedimentological controls on the ichnology of submarine canyon and slope channel systems*. Marine and Petroleum Geology.

Eide, C.E, **Howell J.A.** & Buckley S.J. *Distribution of discontinuous mudstone beds within wave-dominated shallow-marine deposits: Star Point Sandstone and Blackhawk Formation, Eastern Utah, USA*. AAPG Bulletin.

Keogh, K.J., Leary, S., Martinius, A.W., Scott, A.S.J., Riordan, S., Viste, I., Gowland, S., Taylor, A.M. & **Howell, J.A.** *Data capture for multi-scale modelling of the Lourinhã Formation, Lusitanian Basin, Portugal: an outcrop analogue for the Statfjord Group, Norwegian North Sea*. In: Martinius, A.W., **Howell, J.A.** & Good, T. (eds) *Sediment-Body Geometry and Heterogeneity: Analogue Studies for Modelling the Subsurface*. Geological Society, Special Publications, 387.

Rittersbacher, A., Buckley, S.J., **Howell, J.A.**, Hampson, G.J. & Vallet, J. *Helicopter-based laser scanning: a method for quantitative analysis of large-scale sedimentary architecture*. In: Martinius, A.W., **Howell, J.A.** & Good, T. (eds) *Sediment-Body Geometry and Heterogeneity: Analogue Studies for Modelling the Subsurface*. Geological Society, Special Publications, 387.

Rittersbacher, A., **Howell, J.A.** & Buckley, S.J. *Analysis of fluvial architecture in the Blackhawk Fm, Wasatch Plateau using large 3D photorealistic models*. Journal of Sedimentary Research.

Howell, J.A., Martinius, A.W. & Good, T. *The Application of Outcrop Analogues in Geological Modelling: A Review, Present status and Future Outlook*. In: Martinius, A.W., **Howell, J.A.** & Good, T. (eds) *Sediment-Body Geometry and Heterogeneity: Analogue Studies for Modelling the Subsurface*. Geological Society, Special Publications, 387.

Aas T.E., Riccardo Basani, R., **Howell, J.A.** & Hansen E. *Forward modelling as a method for predicting the distribution of deep-marine sands: an example from the Peira Cava Sub-basin*. In: Martinius, A.W., **Howell, J.A.** & Good, T. (eds) *Sediment-Body Geometry and Heterogeneity: Analogue Studies for Modelling the Subsurface*. Geological Society, Special Publications, 387.

Lea, J.M., **D.W.F. Mair**, **B.R. Rea**. *Evaluation of existing and new methods of tracking glacier terminus change*. Journal of Glaciology.

In Press/Accepted, continued...

Lea, J.M., D.W.F. Mair, F.M. Nick, **B.R. Rea**, K. Kjær, A. Weidick, M. Morlighem, D. van As, **J.E. Schofield**. *Terminus driven retreat of a major SW Greenland tidewater glacier during the early 19th century: insights from glacier reconstructions and numerical modelling*. Journal of Glaciology.

Van As, D., M.L. Andresen, D. Petersen, X. Fettweis, J.H. van Angelen, J.T.M. Lenearts, M.R van den Broeke, **J.M. Lea**, N. Bayou, C.E. Bøggild, A.P. Ahlstrøm, K. Steffen. *Increasing meltwater discharge from the Nuuk region of the Greenland ice sheet and implications for mass balance (1960-2012)*. Journal of Glaciology.

Lea, J.M., A. Palmer. *Quantification of turbate microstructures through a subglacial till: dimensions and characteristics*. Boreas.

Funding

Dave Healy has secured JIP funding from Wintershall (£115k) to fund a new PhD project, starting in October 2014: *Improving the odds in geomechanics*.

John Howell has been awarded \$30k from BP America for virtual outcrop work.

Sand Injectites Phase 3, led by **Andrew Hurst**, with **Ian Alsop** and **Nick Schofield**, now has £1.9M funding from BG, Dana, Det Norske, Cairn, EnQuest, JX Nippon, Lundin, Maersk, Marathon, Premier, Statoil UK, Statoil Explo Research, Taqa, Tullow and Wintershall.

Dave Jolley has secured funding from Chevron (£120k) for a PhD studentship *Building an analytical biofacies-lithofacies depositional model for the interpretation of subsurface fluvial and deltaic successions*.

Doug Mair (PI), **Brice Rea** and **Ed Schofield** (Co-Is) along with Nick Kamenos from the University of Glasgow (Co-I) have been awarded a Leverhulme Trust Research Project Grant worth £239k entitled *Calving Glaciers: Long-term Validation and Evidence*.

Joyce Neilson has secured a pledge for £10k from AFES towards the eventual purchase of a new SEM.

Nick Schofield has secured funding from JX Nippon (£127k) for a new PhD project *Understanding the effect of Igneous Intrusions on the Hydrocarbon System within the Flett Basin, West of Shetland*.

Matteo Spagnolo and **Brice Rea** have won a number of small grants: *Flute Morphometry from Photogrammetry (FluMP)*. International Network for Terrestrial Research and Monitoring in the Arctic, EU FP7 (€8.5k); *Holocene glacial evolution in East Greenland determined from pro-glacial sediment proxies*. International Network for Terrestrial Research and Monitoring in the Arctic, EU FP7 (€11.9k); and *Insights on the formation of glacial bedforms and ice-bed interaction using fluting field morphometrics, sedimentology and sediment thicknesses*. NERC Geophysical Equipment Facility (£2.8k).

Doerthe Tetzlaff (PI) has been awarded £249k from the Leverhulme Trust for *Plant-water interlinkages in northern uplands*. 2014-2017.

Conferences, Presentations

There were 4 presentations at The Geological Society of London conference “Reducing Subsurface Uncertainty & Risk through Field-based Studies” (4-6 March):

- **Aaron Barker** presented a poster entitled *Alluvial Reservoir Development and Drainage Distribution in Large Igneous Provinces*
- **Larissa Hansen**, with co-authors **Ben Kneller**, **Richard Callow** and Ian Kane, made a presentation entitled *Reducing Reservoir Uncertainty within channel-related thin bedded turbidites*
- **Andrew Hurst** gave a talk entitled *Application of Outcrop Analogues in Successful Exploration of a Sand Injectite Volund Field, Norwegian North Sea*
- **Hannah Watkins** presented a poster entitled *Characterising fracture sets in folded Torridonian Sandstone; an analogue for fractured sandstone reservoirs in fold and thrust belts*

David Iacopini served as chairman, with Tiago Alves from Cardiff, for the session Seismic characterization of Northern Brazilian Margin at the WORKSHOP IODP Drilling Proposals in the Brazilian Equatorial Margin (BEM) (NSF-FAPESP-IODP), Maresias (Sao Paolo), 4-6 February. David also presented a talk entitled *Seismic imaging in deep Brazilian sections: problem and suggestion*.

Esteem

John Howell made a keynote address at the Geological Society of London conference on Reducing Subsurface Uncertainty & Risk Through Field-based Studies, 3-6th March 2014.

Andrew Hurst gave an invited paper at the Royal Society/UK Oil and Gas/PILOT, Pitfalls in UK Hydrocarbon Exploration, entitled *Sand injectites and intrusive traps: a breaking global play*, Feb 4th.

David Macdonald and **Brice Rea** are now Core panel Members of the NERC Peer Review College Panel A.

David Macdonald gave an invited research seminar of the geology of Sakhalin at the Skolkovo Institute of Technology (Skoltech) in Moscow.

Doug Mair has been invited to be Scientific Editor for a special issue of *Annals of Glaciology* associated with IGS Symposium on Glacier and Ice Sheet Hydrology to be held in Iceland 2015.

At AGU in December, **Chris Soulsby** was inducted as a Fellow of the American Geophysical Union. This is a distinguished honour conferred on 0.1% of AGUs 60,000 in any given year. He was nominated by the Hydrology Section for his ground-breaking work in tracer hydrology and runoff generation studies.

Randell Stephenson was an invited speaker (6th March) at the 43rd General Assembly of Bucharest Geoscience Forum (in Bucharest), and his presentation was entitled *Basement structure and affinity in the Vrancea area from geophysical studies*.

Doerthe Tetzlaff has been appointed as new Editor-in-Chief for Hydrological Processes, one of the top-ranked journals in the field of water resources.

Outreach, training, media

John Howell had a news item on the BBC website, on the use of drones in outcrop work, which got 40 million hits. This led to appearances/interviews on STV News, Original106, North South and Radio Scotland, and articles in about 20 newspapers.

Andrew Hurst featured in the Daily Record, <http://www.dailyrecord.co.uk/news/local-news/aberdeen-geologist-gathers-vital-research-3166372>. Feb 20th.

Andrew Hurst visited Cyprus as part of an Energy Centre mission to evaluate research and education collaboration to found an Eastern Mediterranean Energy Hub, 10-14 March.

Andrew Hurst gave an invited talk at the Tintype Gallery, London entitled "Deep Time and Darkness", 20 March.

As part of Science and Engineering week **David Muirhead** made two visits to Cornhill Primary School (juniors and seniors) to give small workshops on planetary science, technology development and, of course, dinosaurs!

Doerthe Tetzlaff was interviewed by BBC Radio4 about her recent ERC grant and the work which is planned over the 5 year project. There was also an article in the Press and Journal ("Scientists look at water balance"), published on 24th January 2014.

Field

John Howell conducted 10 days of laser scanning and sedimentology in Oman, 20th Feb to 2nd March.

Ben Kneller, Larissa Hansen, Pan Li, Guilherme Bozetti and **Amanda Santa Catharina** spent a month in the field in southern Chile, working on the Cerro Toro Formation.

Roberto Rizzo conducted three days field work at Souter Head, near Aberdeen, including fracture mapping and collecting samples for petrophysical analysis.

The field area for the **Sand Injectites** project made the front cover of the March AAPG Bulletin: Danian sand injection complex, Moreno Gulch, Panoche Hills.

Other

David Iacopini has a visitor: **Paolo Paradisi** (MSci in geophysics from the University of Pisa) staying for 4 months in the seisLAB, through an Erasmus Placement Fellowship, and working on the Beatrice field and Paranaiko Fault (NZ).

David Iacopini and **Rob Butler** are hosting another visitor, a PhD student from the University of Catania (through Erasmus PhD exchange): **Fabrizio Cultrera**. Fabrizio is working on the seismotectonic analysis of the southern Calabrian arc.

Other, continued...

BP has now donated multi-beam bathymetry, sub-bottom profiles and side-scan sonar data from site surveys from four areas in the deepwater Gulf of Mexico. These data are available for both teaching and research purposes. Please talk to **Ben Kneller** if you are interested in using these data.

Doerthe Tetzlaff appointed two PDRFs for the ERC “Vewa” project. **Dr Marjolein van Huijgevoort** started her position on 10th March, and **Dr Rachel Gabor** will start as soon as her visa is sorted.

Doerthe Tetzlaff and **Jason Lessels** attended a workshop by the International Arctic Science Council on Global Change, Arctic Hydrology and Earth System Processes in February, in Edinburgh.



Next copy deadline: May 20th, 2014

Dave Healy

d.healy@abdn.ac.uk
