

Papers, books & book chapters*Published*

Oluwarotimi O. Alabi, Stephen A. Bowden & John Parnell. 2014. *Simultaneous and rapid asphaltene and TAN determination for heavy petroleum using an H-cell.* Analytical Methods, <http://dx.doi.org/10.1039/c4ay00691g>

Ali G, Tetzlaff D, Kruitbos LM, **Soulsby C,** Carey S, McDonnell J, Buttle J, Laudon H, Seibert J, McGuire K & Shanley J. 2014. *Analysis of hydrological seasonality and functionality across northern catchments using monthly precipitation-runoff polygon metrics.* Hydrological Science Journal, <http://dx.doi.org/10.1080/02626667.2013.822639>

Ali G, Birkel C, Tetzlaff D, Soulsby C, McDonnell JJ & Tarolli P. 2014. *A comparison of wetness indices for the prediction of connected saturated areas under contrasted conditions.* Earth Surface Processes and Landforms, <http://dx.doi.org/10.1002/esp.3506>

Goodluck K. Anudu, Randell A. Stephenson & David I. M. MacDonald, 2014. *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, <http://dx.doi.org/10.1016/j.jafrearsci.2014.02.017>

David W. Ashmore, Robert G. Bingham, Richard C.A. Hindmarsh, Hugh F.J. Corr & Ian R. Joughin. 2014. *The relationship between sticky spots and radar reflectivity beneath an active West Antarctic Ice Stream.* Annals of Glaciology 67, 29-38.

Michie, EAH., Haines, TJ., Healy, D., Neilson, JE., Timms, NE. & Wibberley, CAJ. 2014. *Influence of carbonate facies on fault zone architecture.* Journal of Structural Geology 65, pp. 82-99, <http://dx.doi.org/10.1016/j.jsg.2014.04.007>

Parnell, J., Mark, D.F., Frei, R., Fallick, A.E. & Ellam, R.M. 2014. *⁴⁰Ar/³⁹Ar dating of exceptional concentration of metals by weathering of Precambrian rocks at the Precambrian-Cambrian boundary.* Precambrian Research, 246, 54-63.

Parnell, J., Hole, M. & Boyce, A.J. 2014. *Evidence for microbial activity in British and Irish Ordovician pillow lavas.* Geological Journal, <http://dx.doi.org/10.1002/gj.2562>

Soulsby C, Birkel C & Tetzlaff D. 2014. *Assessing urbanization impacts on catchment transit times.* Geophysical Research Letters, 41, <http://dx.doi.org/10.1002/2013GL058716>

Christian Schiffer, Niels Balling, Bo H. Jacobsen, **Randell A. Stephenson & Søren B. Nielsen,** 2014. *Seismological evidence for a fossil subduction zone in the East Greenland Caledonides.* Geology, doi: 10.1130/G35244.1

Søren B. Nielsen, **Randell Stephenson & Christian Schiffer,** 2014. *Chapter 10: Deep controls on intraplate basin inversion,* in P. Talwani (ed.), Intraplate Earthquakes, Cambridge University Press, 257-274.

In Press/Accepted

Steven D. Andrews, Simon R. A. Kelly, William Braham & Matt Kaye (accepted). *Climatic and eustatic controls on the development of a Late Triassic source rock in the Jameson Land Basin, East Greenland*. Journal of the Geological Society, London.

Awdal A.H., Healy D. & Alsop G.I. (accepted). *Geometrical analysis of deformation band lozenges and their scaling relationships to fault lenses*. Journal of Structural Geology.

Healy, D., Neilson, J., Haines, T.J., Michie, E., Timms, N. & Wilson, M. (in press). *An investigation of porosity–velocity relationships in faulted carbonates using outcrop analogues*. Special Publication - Geological Society of London, <http://dx.doi.org/10.1144/SP406.13>

Schofield, N., Alsop, I., Warren, J., Underhill, J., et al. (in press). *Mobilizing salt: Magma-Salt Interactions*. Geology, doi:10.1130/G35406.1

Spinks, S. C., Parnell, J. & Still, J. (accepted). *Redox-controlled selenide mineralisation in the Upper Old Red Sandstone*. Scottish Journal of Geology.

V. Pease, S. Drachev, **R. Stephenson** & X. Zhang (in press). *Arctic lithosphere – a review*. Tectonophysics.

Watkins, H., Bond, C.E. & Butler, R.W.H. (in press). *Identifying multiple detachment horizons and an evolving thrust history through cross-section restoration and appraisal in the Moine Thrust Belt, NW Scotland*. Journal of Structural Geology, <http://dx.doi.org/10.1016/j.jsg.2014.05.001>

Funding

Nick Rawlinson has been awarded a Collaborative Research Grant by the Carnegie Trust (~£30K) for the project "Ambient seismic noise and the North Sea: Can we image what lies beneath?", with Andrew Curtis (University of Edinburgh) and Brian Baptie (BGS) as collaborators.

Chris Soulsby and **Josie Geris** were successful in an application to the "HYDRO NATION SCHOLARS PROGRAMME 2014" funded by the Scottish Government. The funded PhD studentship is entitled Multiscale Modelling to Assess Impacts on Flows and Ecology in Regulated Rivers. Co-supervisors are Dr Iain Malcolm (Marine Scotland, Freshwater Lab) and Dr Mark Wilkinson (JHI Aberdeen).

Conferences, Presentations

The following presentations were made at EGU Vienna:

- Modelling high temporal resolution dynamics of dissolved organic carbon in peat-dominated headwater catchments: A parsimonious approach (oral) **Jonathan Dick, Doerthe Tetzlaff, Christian Birkel, Chris Soulsby**
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- Using isotopes to investigate hydrological flow pathways and sources in a remote Arctic catchment (oral) **Jason Lessels, Doerthe Tetzlaff**, Kerry Dinsmore, Lorna Street, Mike Billet, Robert Baxter, Jens-Arne Subke, Phillip Wookey
- Using novel geostatistical techniques to identify the spatial distribution of biogeochemical hot-spots under contrasting hydrological conditions (poster) **Jason Lessels, Christian Birkel, Jonathan Dick, Doerthe Tetzlaff, Chris Soulsby**
- Influence of catchment characteristics on the spatio-temporal dynamics of streamwater temperatures in montane headwaters (poster) **Jonathan Dick, Doerthe Tetzlaff, Chris Soulsby**
- What is baseflow? Integrating hydrometric and hydrochemical methods to assess dynamic groundwater contributions to montane streams under low flows (Poster) **Maria Blumstock, Doerthe Tetzlaff**, Gunnar Nuetzmann, Iain Malcolm, **Chris Soulsby**
- Non-linearities and thresholds in water partitioning, storage and release in different ecohydrological units (oral) **Josie Geris, Doerthe Tetzlaff, Jeffrey McDonnell, Chris Soulsby**
- Modelling impacts of present and future hydropower operations on flow regimes in data scarce mountain river ecosystems (oral) **Josie Geris, Doerthe Tetzlaff**, Jan Seibert, Marc Vis, **Chris Soulsby**
- Buried paleo-sedimentary basins in the north-eastern Black Sea-Azov Sea area and tectonic implications (DOBRE-2) (oral) **Randell Stephenson**, Vitaly Starostenko, Tomasz Janik and Anatoly Tolkunov.

Clare Bond attended the ShaleUK conference in March.

Amanda Owen gave a talk at AAPG Houston in April, entitled 'A Quantified Distributive Fluvial System: The Salt Wash Member of the Morrison Formation, SW USA', with co-authors Nichols, G., **Hartley, A.**, Weissmann, G. & Jupp, P.

Thomas Wild, Ponfa Roy Bitrus and **Bappah Adamu Umar** were awarded funds to attend the UKCCSRC Bi-annual meeting in Cambridge where they presented posters and contributed to the conference blog.

- 'Lithological controls on fracturing in multi-layered sediments: implications for Co2 storage integrity' **Thomas Wild**
- 'Geological Storage of CO2: Suitability Analysis and Potential Implementation Challenges in the Niger Delta Basin, Nigeria' **Bappah Adamu Umar**
- 'Visual enhancement of injected CO2 into the Utsira formation using poststack seismic attributes' **Ponfa Roy Bitrus**
- <https://ukccsrc.ac.uk/news-events/blog/storage-technical-session-monitoring-and-verification-ukccsrc-biannual-cambridge>
- <https://ukccsrc.ac.uk/news-events/blog/challenges-facing-ccs-plenary-session-ukccsrc-biannual-cambridge-april-2014>
- <https://ukccsrc.ac.uk/news-events/blog/closing-keynote-baroness-bryony-worthington-cambridge-biannual-april-2014>

Pan Li presented a poster at the "Brae Play" conference convened by Bryan Cronin and Colin Turner in Aberdeen, 22nd – 24th April, entitled 'Architecture of coarse grained slope channel fills, Paine C, Cerro Toro Formation, Magallanes Basin, Chile'. Co-authors were **Ben Kneller**, Fabiano Gamberi & **Guiherme Bozetti**.

Esteem

Abdullah Awdal has been awarded the Post-Graduate 1st Place Winner of Midland Valley's Student Structure Prize 2013, for his submission: Geometrical analysis of deformation bands and ladder fractures.

Ponfa Roy Bitrus has been shortlisted for the IEAGHG (International Energy Agency on Green House Gases) Summer School to be held at the University of Texas, Austin USA in July 2014.

Clare Bond has been invited to be part of an advisory team to Chief Scientific Advisor to DECC, Prof. David McKay and DECC officials on public engagement strategies for unconventional resources.

Dave Healy and **Doerthe Tetzlaff** have been invited to become Carnegie Research Assessors for the Carnegie Trust for the Universities of Scotland.

Chris Soulsby was invited to give a plenary talk at the 2014 CGU (Canadian Geophysical Union) meeting in Banff, Alberta from 4-8 May 2014. The meeting was held in partnership with the Canadian Society for Soil Science (CSSS) and the theme of the meeting was "Advances in Geophysical and Soil Sciences". Based on his standing in the geophysical sciences, the CGU executive believed Chris's research on the integration of hydrology, ecology and soil science to understand watershed behaviour made him an ideal candidate to provide an integrative and wide ranging talk to the CGU, it's sections, and the CSSS.

Randell Stephenson gave an invited talk at EGU Vienna, entitled 'Sedimentary basin inversion: mild reactivation to intraplate orogenesis'.

Doerthe Tetzlaff was invited to give the 2014 Ming-ko Woo lecture at the annual general meeting of the CGU (Canadian Geophysical Union), (in partnership with the Canadian Society for Soil Science) in Banff, Canada, May. Dr. Ming-ko Woo was a pioneer in Canadian hydrology, and the Hydrology Section's annual invited lecture is named in his honour. Doerthe was the first female scientist ever to be asked to deliver this prestigious lecture.

Doerthe Tetzlaff was invited to join the editorial board of "Ecohydrology" (published by Wiley).

Outreach, training, media

Clare Bond presented a CaféSci – What the Frack? in Aberdeen, with Prof. Zoe Shipton from Strathclyde University, and an associated radio interview.

Clare Bond featured in the University magazine *Energieia: Fracks and Figures* – the science behind the headlines <http://www.abdn.ac.uk/aie/news/energeia.php>

Doerthe Tetzlaff submitted an application to the Department of Business, Innovation and Skills (BIS) "SCIENCE AND SOCIETY COMMUNITY CHALLENGE GRANT SCHEME". The proposed project combines the research conducted at the Northern Rivers Institute with an online learning hub, an accompanying 'app' and a multi-platform social media campaign. Utilizing engaging films, a clear social media strategy and a free interactive app, this project will stimulate the interest and take science to those not currently engaged, encouraging their participation and helping them to gain a greater understanding of environmental hydrology and water resource management.

Field

Clare Bond, Thomas Wild & Steven Andrews visited Wick as part of Thomas' PhD project.

Tom Haines, Dave Healy & Joyce Neilson visited Malta for 4 days in April, with geologists from BG and Total to close-out the CarFED JIP and to talk about new projects.

Steven Andrews is heading out to Greenland again this summer, on secondment to CASP (30th June – 13th August), to look at the Mols Bjerger exhumed hydrocarbon trap and to complete mapping of the Wegener Halvo peninsula. This will provide insights in to the Devonian through Jurassic structural and sedimentological evolution of East Greenland.

Other

Nick Rawlinson has a new PhD student, **Carmelo Sammarco**, starting in June.

Matteo Spagnolo spent a successful month at the University of Texas at Austin, funded by a SAGES grant, working with aeolian geomorphologists and glaciologists from the Jackson School of Geosciences and the Institute of Geophysics. Matteo gave an invited talk to both Institutions on subglacial landform formation.

Randell Stephenson reports that Dr Jianbao Liu is visiting us until early June. He's from the Chinese Academy of Sciences Key Laboratory of the Marginal Sea Geology, South China Sea Institute of Oceanology, in Guangzhou. He and Randell will be looking at the evolution of the Qiongdongnan and Zhujiangkou basins, which are in the northern part of the South China Sea. Jianbao is sitting in Meston 133.

Doerthe Tetzlaff led the first workshop on the ERC funded "VeWa" project, held in Banff, Canada on 8th May 2014. Scientists from Canada, the US, Sweden and the UK took part in the discussions.

The Aberdeen Water Initiative, led by **Doerthe Tetzlaff**, had two distinguished scientists visiting Aberdeen and giving talk within the "Aberdeen Water Seminar series":

- Dr Ross Woods (University of Bristol) gave a talk on "Seasonal Forecasting of River Flow - A Naïve Approach" and met colleagues for discussion and collaborative ideas on 12th March.
- Dr Iain Malcolm (Environmental Group Leader, Marine Scotland, Freshwater lab) gave a talk on "Challenge in assessing the consequences of altered flow regimes on freshwater fish" and met colleagues for discussion and collaborative ideas on 26th March.

Michael Engel, who is doing his PhD at Free University of Bozen-Bolzano, Italy visited the Northern Rivers Institute, School of Geosciences, in March-April 2014. Michael is interested in building up collaborations with **Doerthe Tetzlaff & Chris Soulsby** on understanding the seasonal dynamics of snowmelt and ice melt contribution in a glacierized catchment in the Eastern Italian Alps.

Next copy deadline: July 20th, 2014

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