



UNIVERSITY OF
ABERDEEN

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Issue 3



Aaron Neill: Drone-based aerial image of the River Feshie, a braided river in the western Cairngorms, Scotland.

School of Geosciences PhD Newsletter

In this issue:

- Passed Vivas
- Accepted papers
- Grants, Prizes and Awards
- Conference contributions
- Other Achievements
- Dates for the Diary
- Features throughout



Joel Blackburn: "Building and installing a V-notch weir in a small, steep stream in the Lake District to gauge and log stream discharge within the catchment. Tough work hiking up the fell, hauling boulders and filling 100 sandbags but I can now acquire valuable data for my PhD!"

PASSED PHD VIVAS

- **Mas'ud Baba:** "Fluid migration and subsurface biosphere in basement fracture systems". Supervisors: Prof John Parnell & Dr Stephen Bowden
- **Jonathan Hardman:** "Interplay between volcanism, sedimentation and tectonism in basin evolution". Supervisors: Dr Nick Schofield, Prof Adrian Hartley, Prof David Jolley
- **Niall Mark:** "Igneous intrusions in sedimentary basins: implications for hydrocarbon exploration". Supervisor: Dr Nick Schofield
- **Andrew McLaren:** "What's rural about rural ageing? A non-representational approach". Supervisor: Dr L Philip
- **MD Mostafizur Rahman:** "Sedimentology and characterisation of marginal reservoir facies in fluvial and delta top depositional systems". Supervisors: Prof John Howell & Prof David Macdonald
- **Shuqing Yao:** "Static modelling of a shallow-marine carbonate reservoir analogue: prediction of facies distributions, sequence stratigraphy and fault-associated dolostone geometries". Supervisors: Dr Enrique Gomez-Rivas & Prof John Howell

PASSED MSC BY RESEARCH VIVAS

- **John Barrett:** “The civilisation of Moray: Burghs in the landscape and the landscape of burghs, cc 1150-1250”. Supervisor: Dr Jeff Oliver

Featuring: Marja van den Houten

*Project: ECCI Innovation Consultancy Programme,
NERC and SAGES PGR students*

Business: One Cherry <https://onecherry.co.uk>



“Provides charity shops with a user-friendly and easy-to-use mobile app to start reaching local customers online”

University of Aberdeen PhD student Marja van den Houten (Geosciences) was tasked over ten days to develop a series of recommendations aiming to improve the long-term sustainability of One Cherry. A user-friendly app connecting local shoppers to charity shops, One Cherry aims to make shopping in local second-hand shops easy and enjoyable for everyone. Through her business analysis and use of her network of contacts in the carbon sector Marja was able to provide the business with a set of key outputs which will hopefully provide real opportunities to improve diversification and expansion whilst developing her own career prospects and networking opportunities.

Follow this link for further details:

<https://edinburghcentre.org/news/114>

ACCEPTED PAPERS

- Aliyuda, K. & Howell, J. (2018) Machine Learning Algorithm for estimating Oil Recovery Factor Using a Combination of Engineering and Stratigraphic Dependent Parameters. SEG Interpretation., <https://doi.org/10.1190/int-2018-0211.1>
- Kurjanski, B., Rea, B.R., Spagnolo, M., Winsborrow, M., Cornwell, D.G., Andreassen, K., Howell, J. (2019) Morphological evidence for marine ice stream shutdown, central Barents Sea. Marine Geology, 414, 64-76, <https://doi.org/10.1016/j.margeo.2019.05.001>
- Maclaren, A.S. (2019), 'Rural Geographies in the wake of Non-Representational Theories' Geography Compass. [in press]
- Maclaren, A.S. (2019) 'Geopolitical Imaginaries of the Space Shuttle Mission Patches' Geopolitics, pp. 1-23. [ONLINE FIRST] DOI: <HTTPS://DOI.ORG/10.1080/14650045.2019.1617277> (builds on research from undergraduate dissertation)
- Piovano, T. I., Tetzlaff, D., Carey, S. K. et al. (2019) Spatially distributed tracer-aided runoff modelling and dynamics of storage and water ages in a permafrost-influenced catchment, Hydrol. Earth Syst. Sci., 23, 2507-2523, <https://doi.org/10.5194/hess-23-2507-2019>
- Zimmer, E.H., Howell, J.A., Schofield, N. and Gawthorpe, R.L. (2019). Seismic geomorphology linked to sequence stratigraphy of an Eocene delta in the Outer Moray Firth, UKCS. Marine and Petroleum Geology, 104, pp. 150-167. <https://doi.org/10.1016/j.marpetgeo.2019.03.014>

Featuring: Andres, Lewis, Yogendra and Jesús

Project: The Geology of Clashnessie and Achmelvich

Methods: Electrical resistivity tomography, Ground penetrating radar and Spontaneous potential





Throughout the last week in May, a group of PGR students from Geosciences (Andres, Lewis, Yogendra and Jesús) ran geophysical surveys using ERT, GPR and SP methods to map the geology around the Clashnessie and Achmelvich areas. The aim was to identify faults and fractures, combining near surface geophysical techniques in geology mainly composed of gneisses rocks and quartz dyke intrusions. The location of the study site was stunning – sandy beaches the colours of the Caribbean and typical Scottish wildlife - let's hope the weather will be just as nice next time!

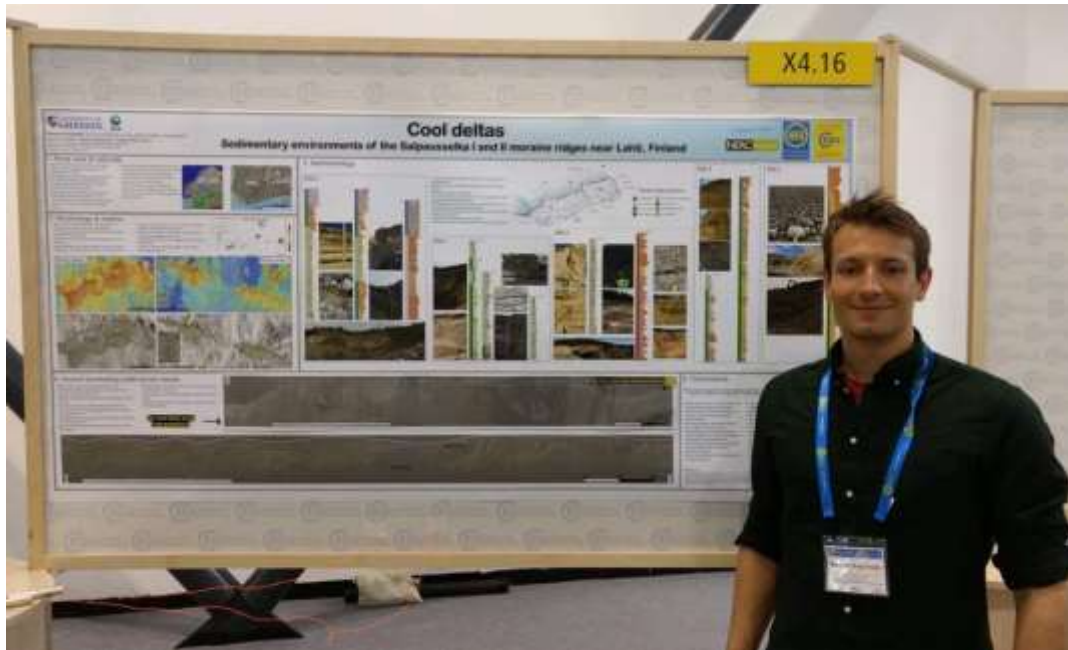
GRANTS/PRIZES/AWARDS

- Kurjanski, B. INQUA - International Union for Quaternary Research 2019 Congress, Dublin, €450 grant awarded for attendance
- Kurjanski, B. "Cool deltas. Sedimentary environments of Salpausselka I and II moraine ridges near Lahti, Finland" European Geosciences Union, Vienna, 2019. The poster won the OSPP award (outstanding student PICO and poster)
- Maclaren, A.S. Royal Geographical Society (with Institute of British Geographers) Rural Geography Research Group Early Career Researcher Conference Grant (2019) - £300 Contribution to the cost of the Ninth Rural Quadrennial Conference which will be held in July, Vermont, USA

- Maclaren, A.S. Loughborough University Invited Speaker funding (2019) - £380 Grant award for the Loughborough University Institute of Advanced Studies Research Symposium on Nationalism and Nation Branding
 - Mosca, J. Findlay Harris Dick Prize for Pictish Research, £500 prize to be used for upcoming photogrammetry field trips to Orkney and Shetland.
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Jonathan Mosca: Arbroath, Barns Mill, Dunardtrek and Marns Mill Trench. "With more than five hundred known examples in Scotland, these promontory fortifications sites, many endangered by coastal erosion, are very understudied with only a handful being reliably dated. Simply put, I am performing case studies in certain regions to get an idea on the morphology of promontory fortifications, and to date as many sites as possible with the aim of discovering if morphology might shed light on the age and cultural ties of a fort. My methods include photogrammetry and field excavation, and I currently await lab results for dates from samples from the excavations. The photogrammetry has already highlighted structures heretofore unrecorded."



Bartek Kurjanski: Cool deltas. Sedimentary environments of Salpausselka I and II moraine ridges near Lahti, Finland” winner of EGU outstanding student PICO and poster 2019

CONFERENCE CONTRIBUTIONS - TALKS

- Ayiineetigo, D.A. “Technological Transitions as an evolutionary process: a Multi-level Perspective on two case studies from Ghana”. Green Economy Research Centre Seminar Series seminar, Aberdeen 2019
- Heptinstall, E.A., Parnell, J. Serpentinite nickel content in the UK and Republic of Ireland: Potential consequences for Microbial life. Astrobiological Society of Britain 8, Newcastle University, 25th -26th April 2019
- Kurjanski, B. “Cool deltas. Sedimentary environments of Salpausselka I and II moraine ridges near Lahti, Finland” BSRG, December 2018
- Maclaren, A.S. 'Relational Ruralities: Exploring geo-historicity through the lives of older people' - Paper presentation as part of the Trans-Atlantic Rural Research Network (TARRN) Annual Meeting (April, 2019), Aberdeen
- Maclaren, A.S. 'The UK Space Agency and constructing "Global Britain"' - co-submission with Daniel Sage (Loughborough University) as part of the Loughborough University Institute of Advanced Studies Research Symposium on Nationalism and Nation Branding

- Phillips, S.P., Howell, J.A., Hartley, A. J. "The Dakota Sandstone a transgressive shallow marine system of the San Rafael Swell region, Utah, U.S.A.", BSRG, 2019



Zoe Wakeford: Mapping ancient lava flow emplacement with drone imagery and modern analogues: An introduction to Z-FLOW - an holistic lava flow emplacement dynamics model, GASS2019

- Piovano, T. I., Tetzlaff, D., Carey, S. K., Shatilla, N. J., Smith, A., & Soulsby, C. "Spatially distributed tracer-aided modelling of dynamics in storage and water ages in a permafrost influenced catchment", EGU General Assembly 2019, Vienna, April 2019
- Sketsiou, P., Napolitano, F., De Siena, L. "Kernel-based Coda Attenuation Imaging: A Non-Linear Multi-Scale Approach", European Geosciences Union Annual Meeting (Vienna) 7-12 April 2019
- Wakeford, Z. Hole, M., Jolley, D., "Mapping ancient lava flow emplacement with drone imagery and modern analogues: An introduction to Z-FLOW - an holistic lava flow emplacement dynamics model", Geologists' Association Student Symposium (GASS2019), Burlington House, Piccadilly, London, 17th May 2019
- Zimmer, E.H., Howell, J.A.: Clinof orm dip along strike as a key to delta characterisation. BSRG AGM, Edinburgh, December 2018

**Featuring: Katya Dimitrova Petrova, Winner of
Aberdeen Uni's got Talent 2019**

*Project: The Three Minute Thesis Competition (3MT®),
Methods: A compelling spoken presentation on research topic and its
significance in just 3 minutes*

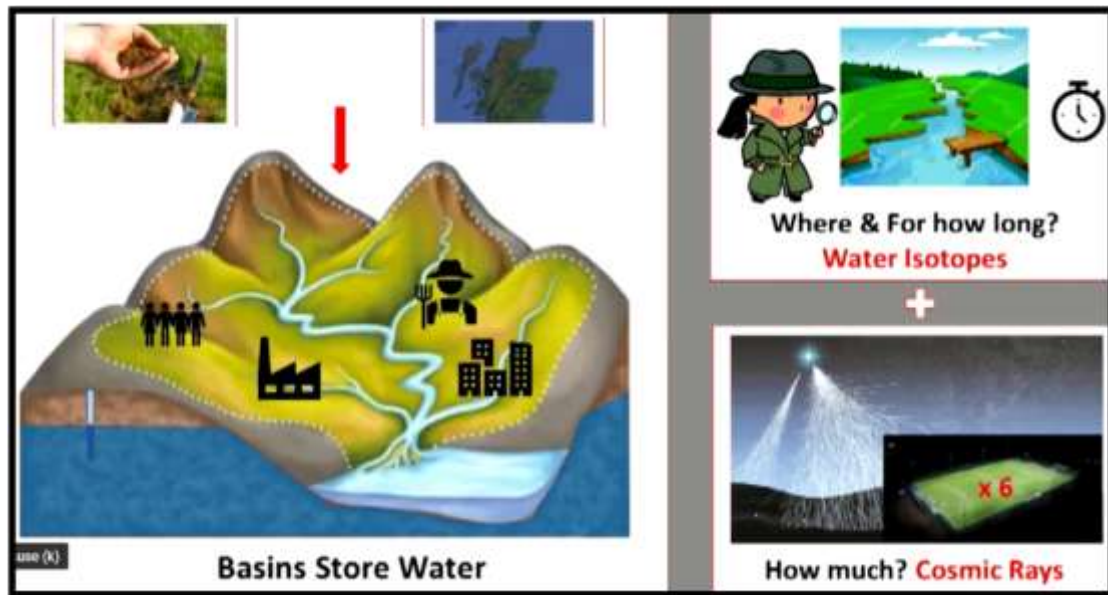


As part of this year's May Festival, "Aberdeen Uni's Got Talent" encouraged students to instead of singing and dancing, give a compelling spoken presentation on their research topic and its significance in just three minutes. The Three Minute Thesis Competition (3MT®), now celebrated in many international and UK universities, originated in the state of Queensland, Australia, which at the time was suffering a severe drought. To save water, residents were encouraged to time their shower, and many used a three-minute egg timer for that. The then Dean of the University of Queensland, Alan Lawson, put two and two together and the idea was born.

In this UoA edition, it was once again water that was liked the most. In "Water: victim and driver of change" Katya Dimitrova Petrova, PhD student in the Northern Rivers Institute, briefly introduced the public to her project on subsurface water storage in an actively changing agricultural basin in NE Scotland. Katya's story on water, isotopes and cosmic rays goes on to represent UoA in the UK semi-finals this summer.

If you would like to hear the talk, please follow this link:

<https://youtu.be/cgnL0KSfQKA>



CONFERENCE CONTRIBUTIONS - POSTERS

- Aliyuda, K., Howell, J. and Hartley, A. Stratigraphic Control on Oil Field Performance in Clastic Reservoirs of the Norwegian Continental Shelf, AAPG ACE San Antonio, Texas, USA., 18-22 May, 2019.
- Kurjanski, B. "Cool deltas. Sedimentary environments of Salpausselka I and II moraine ridges near Lahti, Finland" European Geosciences Union, Vienna, 2019. The poster won the OSPP award (outstanding student PICO and poster)
- Sketsiou, P., Colombo, C. S., De Siena, L., "2D Coda Attenuation Mapping of Vrancea, Romania Using Sensitivity Kernels", American Geophysical Union Fall Meeting 2018 (Washington, DC) 10-14 December 2018
- Worms, S., Griffiths, C.M., Owen, A., Howell, J.A., Hartley, A.J., "Quantitative Prediction of Sandbody Connectivity within Distributive Fluvial Systems Using Process-Based Numerical Modeling", AAPG ACE, San Antonio Texas, May 19. – 22 2019

Featuring: David Ania Ayiineetigo

Seminar Series: Green Economy Research Centre Seminar Series
Topic: Technological Transitions as an evolutionary process: a Multi-level Perspective on two case studies from Ghana



Abstract: How does the GE transition come about in relatedness to Renewable Energy and Tourism in Ghana? The emergency of climate change and the scientific consensus on its impacts necessitates a departure to a 'new turn' of the 'old way', by combining green (ecology) with growth (development). This study therefore seeks to investigate the Green Economy transitions in developing countries.

David comments: "I argue that the Green Economy is a neo-liberal agenda and foreclosure to other development paths foisted on the Global South by the Global North and that any form of transition must therefore be seen as "Just". The reason for a "just" is because, transition scenarios I evidenced from an in-depth, qualitative semi-structured approach on On-shore Wind Power (OWP) in Ghana is externally driven and not endogenously, because of weak local capacities at the national levels, which are a result of historical path dependent processes, instituted by Global Production Networks (GPNs). So while GPNs play a role in un-locking paths in the global south, they equally have and continue to create new path dependencies in the process."

To find out more about these seminar series please follow this link:
<https://www.abdn.ac.uk/geosciences/departments/geography-environment/events/index.php>



Aaron Neill: The River Feshie - still snapped by the DJI Phantom 3 Pro drone as part of a video compiled in the following link: <https://youtu.be/blKNWsDmmBc>

NEW PHD STUDENTS

Archaeology

- Zachary Hinckley – Supervisor: Dr G Noble “Defining early medieval fortified enclosures in Scotland”
- Caitlin Jacobsen – Supervisor: Dr R Knecht “Prehistory of Southwest Alaska”

Geography

- Mohammad Alattar – Supervisor: Dr C Cottrill “Developing a better understanding of active travel behaviours and interactions with the built environment”
- David Flood – Supervisor: Dr P Niewiadomski “Green economy transitions in tourism in the Margaret River Region (WA, Australia)”
- Eva Loerke – Supervisor: Dr J Geris: “UAV Thermal Remote Sensing for Assessing River Temperature”

Geology

- Lauren Chedburn – Supervisor: Dr N Schofield “Overthickening of the Cretaceous Sequences on the Norwegian Margin.”
- Mustapha Garba – Supervisor: Dr Q Gan “Characterize Micro-Macro Fractures and Permeability Evolution in Carbonate by coupled Hydro-Mechanical-Geophysical Model”
- Ogheneworo Offeh – Supervisor: Dr S Bowden “Organic Geochemistry of Devonian Terrestrial Organic Matter”



Andrew Maclaren: Montage of research fieldwork site East Lothian, Scotland

THANKS

Many thanks to all those who sent in contributions – we hope that this newsletter gives all PhD researchers more of an idea of what goes on in the School of Geosciences, and if you have any ideas or suggestions for the next issue, please do not hesitate to contact one of the PGR representatives.

REMINDER:

Wednesday meet-up: Alternating between 1-2pm Union brew / 5pm -7pm St. Machar bar