

## 53<sup>rd</sup> Irish Geological Research Meeting, Ulster Museum, Belfast

1700 onwards: Registration in the Ulster Museum

1815 Introduction and welcome

1830 ***IGA guest lecture: How a perfectly rational scientist came to believe comets could be dangerous.***

Professor Mike Baillie, Queen's University Belfast.

1930 Reception sponsored by Shell E&P Ireland Limited.

### Saturday 20th February

0830 onwards: Registration in the Ulster Museum

0850 – 0900: Welcome and announcements

The name of the speaker for each presentation is underlined. Students eligible for the presentation prize are indicated by bold italics.

#### Session 1 - Chair - Mark Cooper (GSNI)

0900 – 0915: ***GLAMARous RIDGES : new data on the glaciation of the Celtic Sea.***

Daniel Praeg, S. McCarron, M. Stoker and the GLAMAR Shipboard Party

0915 – 0930: ***First observations on the deglaciation of the NW Irish continental shelf from marine sediment cores.***

Sara Benetti, Fabio Sacchetti, Colm Ó Cofaigh and Paul Dunlop

0930 – 0945: ***Preliminary investigations and U-Th ages for speleothem deposits in Crag cave, Co.Kerry; insights into climate variability during the last glacial.***

*Adelheid Fankhauser* and F. McDermott

0945 – 1000: ***Carbon isotope signals in speleothems record changes in the soil respiration balance during the late Glacial climate transitions.***

*Dominika Rudzka* and F. McDermott

1000 – 1015: ***Comparison of acid preparation techniques for the analysis of carbon and nitrogen from temperate inter-tidal sediments.***

*Kieran Craven* and R. Edwards

1015 – 1030: ***Palaeoclimatological and palaeoenvironmental reconstruction of the Galway Bay area, Ireland: Late Pleistocene to Recent.***

*Bill Wood*, D.M. Williams and J. Murray

1030 – 1100: Coffee and posters

#### Session 2 - Chair - Garth Earls (GSNI)

1100 – 1115: ***Ordovician arc-continent collision within Northern Ireland: new constraints from the Tyrone Igneous Complex.***

*Steven Hollis*, S.Roberts, G.Earls, M.R.Cooper, R.Herrington, Q.G.Crowley and D.Chew

1115 – 1130: ***A reassessment of Lower Palaeozoic structure in the Northern Ireland sector of the Southern Uplands–Down-Longford terrane using airborne (Tellus) conductivity data.***

David Beamish, G. S. Kimbell, P. Stone and T. B. Anderson

1130 – 1145: ***Zonation, U-Pb age constraints and a model for emplacement of the***

**Late Caledonian Newry Igneous Complex, Northern Ireland.**

Mark Cooper, I. G. Meighan, D. J. Condon, Q. G. Crowley and R. M. Ellam  
1145 – 1200: **Geometry and growth of Palaeogene strike-slip faults in Northern Ireland.**

*Hugh Anderson*, J.J. Walsh and M.R. Cooper

1200 – 1215: **Microbial Cycling of Se in Northern Irish Soils Identified by the Tellus Dataset.**

*Jon Fellowes*, Richard A. D. Patrick, Carolyn I. Pearce, Christopher Boothman and Jon R. Lloyd

1215 – 1230: **Re-appraisal of a Conceptual model for the Lagan and Enler Valley Sherwood Sandstone Aquifer - A major groundwater source for the Greater Belfast region, Northern Ireland.**

*Claire Burns*, U.Ofterdinger and J.C.Compte

1230 – 1245: **Cancer and trace elements in Northern Ireland?**

*Amy Barsby*, Jennifer McKinley, Ulrich Ofterdinger, Mike Young and Anna Gavin

1245 – 1345: Lunch

**Session 3 - Chair - Dave McCarthy (Cork)**

1345 – 1400: **Terrestrial geophysical investigation in a karst region: Peterswell Turlough, County Galway.**

*Catherine Elder*, E.Daly, T.Henry and S.Rooney

1400 – 1415: **Investigating the Tanzanian Margin; Initial Results from Tanzania Offshore Paleogene Survey.**

*Niamh O'Sullivan* and C.J.Nicholas

1415 – 1430: **Assessing velocity and impedance changes using interferometry on repeated seismic sources for time lapse monitoring of CO<sub>2</sub> geological storage.**

Louis De Barros, G.S. O'Brien and C.J. Bean

1430 – 1445: **A low-velocity zone atop the transition zone in Northwestern Canada.**

*Andrew Schaeffer* and M.G. Bostock

1445 – 1500: **Lithosphere-asthenosphere interaction beneath Ireland from joint inversion of teleseismic P-wave delay times and GRACE gravity.**

*John P. O'Donnell*, E. Daly, C. Tiberi, B. M. O'Reilly, P. W. Readman, F. Hauser and I. D. Bastow

1500 – 1515: **Deep anisotropy beneath Ireland from shear-wave splitting measurements.**

*Gulten Polat*, P.W. Readman, B.M. O'Reilly and F. Hauser

1515 – 1545: Coffee and posters

**Session 4 - Chair - Breanden MacGabhann (Galway)**

1545 – 1600: **Ireland's carbonate-hosted Zn-Pb deposits: budget and origin of metals.**

Julian Menuge

1600 – 1615: **How real is the extension discrepancy? Progressive polyphase faulting and detachment tectonics in action at Magma-Poor Rifted Margins and Margin Basins.**

*Ken McDermott* and Tim Reston

1615 – 1630: **High-precision U-Pb zircon CA-ID-TIMS age constraints from**

**Western European Carboniferous ash layers.**

*Michael Pointon*, D. Chew, M. Ovtcharova and G.D. Sevastopulo

1630 – 1645: **Stable isotopes and the Carboniferous glaciation - No evidence for rapid climate deterioration at the Viséan – Serpukhovian boundary.**

*Milo Barham*, J. Murray, D.M. Williams and M.M. Joachimski

1645 – 1700: **A behind-outcrop coring campaign in the Clare Basin, western Ireland.**

Peter Haughton, Patrick Shannon, Colm Pierce, Ole Martinsen, Andrew Pulham and Trevor Elliott

1700 – 1715: **Toward a 3D crustal-scale, onshore and offshore, regional geological**

**model of Britain and Ireland.**

Graham Leslie, M.R. Cooper, B. McConnell, S.L.B. Arkley, S.J. Mathers, B. Wood and H. Kessler

1715 – 1800: Refreshments and posters.

1800 – 1900: **IGRM guest lecture: Magma-crust interaction: implications for ore formation and environmental crises.**

Professor Nick Arndt, Université de Grenoble

1915: Conference dinner in the Girona Restaurant, Ulster Museum

**Sunday 21st February**

**Session 5 - Chair - Mike Coughlan (Cork)**

0915 – 0930: **Dual isotopic composition of surface water nitrate within the Lough Neagh and Lough Melvin catchments, Northern Ireland.**

Luc Rock, M. Said, C. Barry, B. Foy and K. Thompson

0930 – 0945: **River nitrate levels within Northern Ireland: a comparative catchment study.**

*Judith Watson*, R.H. Foy, C. Jordan and J.M. McKinley

0945 – 1000: **Crustal and mantle flow in the Aegean region: Evidence from seismology and geodynamics.**

Sergei Lebedev, Brigitte Endrun, Celine Tirel and Thomas Meier

1000 – 1015: **The Class Eldoniidae: Palaeontology's 'Rosetta Stone'.**

*Breanden A. MacGabhann* and J. Murray

1015 – 1030: **Taphonomy of marine reptiles from the Triassic of Monte San Giorgio, Switzerland.**

*Sue Beardmore*, Patrick Orr and Heinz Furrer

1030 – 1100: Coffee and posters

**Session 6 - Chair - Milo Barham (Galway)**

1100 – 1115: **Our Outdoor Classroom: Education resources at Marble Arch Caves Global Geopark.**

Kirstin Lemon and M. Magee

1115 – 1130: **Stratigraphy and correlation of the Sarab Formation, Al Huqf area, with the subsurface Ara Group play systems of Oman.**

*Sophia Gold* and C.J. Nicholas

1130 – 1145: **Crustal and lithospheric structure of Tibet from Shear velocity**

profiles.

*Matthew Agius* and S. Lebedev

1145 – 1200: **Probabilistic estimation of slip on historical subduction earthquakes and the longevity of interplate coupling distributions.**

John McCloskey, M. Nic Bhloscaidh, D. H. Natawidjaja, S. S. Nalbant, A. F.

Bell, I. G. Main, M. Naylor and J. Greenhough

1200 – 1215: **The September 2009 Padang earthquake (M=7.6) and implications for seismic risk in western Sumatra.**

John McCloskey, Suleyman S. Nalbant, Dietrich Lange, Frederik Tilmann,

Andy Bell, Danny Natawidjaja and Andreas Rietbrock

1215 – 1230: **Effect of coupling and fault strength on earthquake nucleation in subduction zones.**

*Mairead Nic Bhloscaidh*, John McCloskey, Suleyman Nalbant and Chris Bean

1230 – 1245: **Opportunities for Hybrid Knowledge in Disaster Risk Reduction.**

*Rachel Shannon*, John McCloskey and Max Hope

1245 – 1345: Lunch - sponsored by Conroy Diamonds and Gold plc.

**Session 7 - Chair - Matthew Agius (DIAS)**

1345 – 1400: **The role of magma-sediment-water interaction for base metal mineralisation on the Ordovician ocean floor: microbeam and fluid inclusion investigations of the Bunmahon Formation, County Waterford.**

*Catherine Breheny*, A. Costanzo, M. Feely and K. R. Moore

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1400 – 1415: **A multi-layer model of the volcanology, petrology and geochemistry of the onset of Ordovician subduction of the Laurentian margin: modelling of the Bencorragh and Finny Formations of the Lough Nafoeey Group, Connemara.**

*Zara Archibald* and K. R. Moore

1415 – 1430: **New geological insights into the Dalradian Lack Inlier, Northern Ireland and correlative sequences: implications for lithostratigraphical correlation and gold mineralisation.**

Dave Chew, J.A.S. McFarlane, M. R. Cooper and C.M. Fleming

1430 – 1445: **Fossilized melanosomes and the colour of dinosaurs and birds from the Jehol Biota, (early Cretaceous) China.**

Fucheng Zhang, Stuart L. Kearns, Patrick J. Orr, Michael J. Benton, Zhonghe

Zhou, Diane Johnson, Xing Xu and Xiaolin Wang

1445 – 1500: **Precise sourcing of the granite millstones of the Early Medieval tide mill at Nendrum, Strangford Lough, Co. Down, Northern Ireland.**

Ian Meighan, R.M. Ellam, C. McGinn and T. McErlean

1500 – 1515: Application of Terrestrial Photogrammetry to modelling and monitoring of Antrim coast cliff morphology.

Phillip Millar, W.D.H. Woodward and J. Boyd

1515: **Prizes, final announcements and close of meeting**