



52nd Irish Geological Research Meeting

20th – 22nd February 2009, Trinity College Dublin

Provisional Programme

TECHNICAL PROGRAMME

Friday 20th February

1800 onwards: **Registration in the Arts Block**

1920 **Introduction and welcome**

1930 **IGRM guest lecture: Glacial modulation of volcanism in Iceland: Searching for mantle-climate feedback in the earth system**

Dr John MacLennan, Department of Earth Sciences, University of Cambridge

2030 **Reception sponsored by Shell E&P Ireland**

Saturday 21st February

0830 onwards: **Registration in the Arts Block**

0850 – 0900: **Welcome and announcements**

CHAIR: Maja Stanislawska (TCD)

0900 – 0915: **Structural controls on porphyry-type Mo-Cu mineralization at Moly Brook, southern Newfoundland**

E. P. Lynch, M. Feely, D. Selby and D. H. C. Wilton

0915 – 0930: **Fluids associated with the formation of emeralds from the Piteiras Mine, Minas Gerais State, Brazil**

A. Costanzo, M. Feely, E. P. Lynch, N. Blamey, T. Haggan, J. Raggi

0930 – 0945: **Geology of the Newly Discovered Zinc-Lead Deposit at Stonepark, Limerick**

P.B. Redmond, C. Reed, A. Reed and J. Murphy

0945 – 1000: **Stratigraphic Controls on the Zn-Pb Mineralisation at Ballinalack, Co. Westmeath**

R. D. McCool, E. Lynch, C.P. Reed, P.B. Redmond, and D. Rhodes

1000 – 1015: **Geological constraints on the emplacement of the Snap Lake kimberlite dyke, NW Territories, Arctic Canada**

T.M. Gernon, M. Field and R.S.J. Sparks

1015 – 1030: **Calibrating the Carboniferous Timescale: New high precision CA-ID-TIMS U-Pb zircon age constraints from European diagenetically altered volcanic ash layers**

M.A. Pointon, D. Chew, U. Schaltegger, M. Ovtcharova, G.D. Sevastopulo

- 1030 – 1045: **Volcanic and sedimentary processes on an uplifted and subsided magma chamber roof: evidence from the Southern Mountains Zone, Isle of Rum, Scotland**
E.P. Holohan, V.R. Troll, M. Errington, C.H. Donaldson, G. Nicoll & C.H. Emeleus
- 1045 – 1115: **Coffee and posters**
- CHAIR: Lorenzo Cociani and Rosalia Davi (UCD)**
- 1115 – 1130: **Magnitude estimation in earthquake early warning systems**
S. Murphy and S. Nielsen
- 1130 – 1145: **Joint Inversion of Magnetotelluric and Surface Wave Data in an Anisotropic Earth**
E. Roux, M. Moorkamp, A.-G. Jones
- 1145 – 1200: **Near real-time aftershock hazard map for 2008 M6.4 Pakistan earthquakes**
John McCloskey and Suleyman S. Nalbant
- 1200 – 1215: **The Role of Static and Dynamic stress changes associated with the M=4.3 event in the Gulf of Corinth, Greece**
Lorenzo Cociani, Christopher Bean, Helene Lyon-Caen, M. Mollhoff
- 1215 – 1230: **Volcano - Seismic Source Mechanisms at Arenal Volcano, Costa Rica**
Rosalia Davi, Gareth S. O'Brien, Christopher J. Bean, Philippe Lesage and Mauricio M. Mora
- 1230 – 1245: **Elements of the plumbing system beneath Etna Volcano from localisation of Long-Period events recording by a high density network**
L. De Barros, C.J. Bean, L. Zuccarello, G. Saccorotti, G. S. O'Brien, I. Lokmer, J.P. Metaxian and D. Patanè
- 1245 – 1300: **Lithospheric structures in Southern Africa: The SAMTEX project**
A.G. Jones, M.R. Muller, M.P. Miensopust, D. Khosa, P.-E. Share, C. Hogg, and the SAMTEX Team
- 1300 – 1400: **Lunch**

CHAIR: Milo Barham (NUIG)

- 1400 – 1415: **Insights into the taphonomy of higher vertebrates from decay experiments**
M.E. McNamara and P.J. Orr
- 1415 – 1430: **The origin of an opisthotonic posture in fossil vertebrates**
S.Beardmore and P. Orr
- 1430 – 1445: **Early to middle Tournaisian (Mississippian) ichnology of southern Ireland and South Wales: palaeoenvironmental implications**
Jenny Brittain
- 1445 – 1500: **New Paropsonemid Eldonioids from southern Morocco**
B. A. MacGabhann and J. Murray
- 1500 – 1515: **Cold-Water Coral Carbonate Mound Borehole Records: High Resolution Palaeoenvironmental Histories, Palaeoclimatic Controls on High Biodiversity Habitats and Excess Carbonate Accumulation Centres (ESF-CARBONATE)**
A.J.Wheeler, A.Freiwald, D.Hebbeln, R.Swennen, T. Van Weering, B.Dorschel, H. de Haas, N.Joseph, M. Lopez-Correa, C.Wienberg
- 1515 – 1545: **Coffee and posters**

CHAIR: Vanessa Johnston (UCD)

- 1545 – 1600: **Fluid-rock interaction in the Miocene Tejada Intrusive Complex, Gran Canaria, (Canary Islands): insights from mineralogy, and O- and H-isotope geochemistry**
E. Donoghue, V.R. Troll, and C. Harris
- 1600 – 1615: **Modeling the response of soil carbon to climate and vegetation change during the Younger Dryas; insights from cave deposits**
D.Rudzka and F. McDermott
- 1615 – 1630: **Quantifying the sources of cosmogenic ³⁶Cl in the karst environment: modelling the inputs as a function of altitude, latitude, and hydrogeology**
V. Johnston and F. McDermott
- 1630 – 1645: **The Hydrogeological Control of a Groundwater Dependent Ecosystem in Northwest Mayo**
S. Regan and P. Johnston
- 1645 – 1700: **Irish Geoscience Graduate Programme**
Ben Kennedy
- 1700 – 1800: **Reception and posters**

1800 – 1900: **IGA guest lecture: Where was Odysseus' homeland? The geological, geomorphological and geophysical evidence for relocating Homer's Ithaca**
Prof. John R. Underhill, School of Geosciences, University of Edinburgh

2000: **Conference dinner at Jameson's Distillery, Smithfield**

Sunday 22nd February

CHAIR: Paul Byrne (TCD)

0900 – 0915: **Seismic imaging of the deep structure and deformation of continents**
S. Lebedev

0915 – 0930: **PICASSO Phase I: Magnetotelluric (MT) Investigation of Spain from Madrid to the Betics - preliminary results and models**
J.-P. Schmoldt, A. G. Jones, C. Hogg, and O. Rosell

0930 – 0945: **Dynamics of metamorphic core complex development**
C. Tirel, J.-P. Brun and E. Burov

0945 – 1000: **3D numerical modelling of the evolution of fault zone internal structure**
M. Schöpfer, C. Childs and J. Walsh

1000 – 1015: **Volcano Flank Terraces on Mars: Nature, Origin, and Context**
P. K. Byrne, B. van Wyk de Vries, J. B. Murray, and V. R. Troll

1015 – 1030: **Using migration modelling to improve fault seal prediction**
C. Childs, T. Manzocchi, J.J. Walsh

1030 – 1045: **Interplay of Alpine collisional tectonics and Icelandic mantle plume-related deformation and magmatism in the Early Palaeogene of Northern Ireland: new constraints from the Tellus high resolution geophysical survey**
M.R. Cooper, J.J. Walsh, C.L. Van Dam, M.E. Young, G. Earls, H. Anderson and A. Walker

1045 – 1115: **Coffee and posters**

CHAIR: Cora McKenna (UCC)

1115 – 1130: **Laurentian origin for the Ordovician Grangegeeth volcanic arc terrane; a detrital zircon provenance study**
B. McConnell, Q.G. Crowley and N. Riggs

- 1130 – 1145: **A U-Pb zircon age constraint for the Ordovician Tyrone Plutonic Group ophiolite, Tyrone Igneous Complex, Northern Ireland: implications for plate models and Grampian orogenic amalgamation**
M. R. Cooper, S. R. Noble, Q. G. Crowley & R. J. Merriman
- 1145 – 1200: **A geological overview and geochemical investigations of the Lough Nafuoey Group, South Mayo**
Z. Archibald and K. Moore
- 1200 – 1215: **A possible ‘Newer Granite’ source for deep crustal xenoliths from East Lothian, Scotland**
E. Badenszki, J.S. Daly and M.S.A. Horstwood
- 1215 – 1230: **Palaeoproterozoic orthogneiss on Colonsay, SW Scotland**
J.S. Daly, M.J. Flowerdew, C. McAteer, M.S.A. Horstwood, M.J. Whitehouse and D.M. Chew
- 1230 – 1245: **Provenance, depositional processes and diagenesis in Upper Jurassic sandstones in the northern Porcupine Basin, offshore western Ireland**
A. Siemes, S. Tyrrell, P.D.W. Haughton and P.M. Shannon
- 1245 – 1300: **Resolving sedimentary recycling signals in provenance analysis: problems and possible solutions?**
Shane Tyrrell, Peter D.W. Haughton, J. Stephen Daly and Patrick M. Shannon
- 1300 – 1400: **Lunch**
- CHAIR: Marco Patacci (UCD) and Breandán MacGabhann (NUIG)**
- 1400 – 1415: **Pleistocene drift development on the eastern Porcupine Seabight margin, NE Atlantic: results from site U1318 (IODP307)**
R O’Donnell, B. Dorschel, A.J. Wheeler, A. Foubert, D. Hebbeln
- 1415 – 1430: **Turbidity Current Ponding and Resulting Deposits**
Marco Patacci, William D. McCaffrey, Peter D. W. Haughton
- 1430 – 1445: **Episodic collapse of a turbidite onlap slope, Late Miocene Tabernas Basin, SE Spain**
L. Baudouy, P.D.W. Haughton and J.J. Walsh
- 1445 – 1500: **Geometries of Permo-Triassic basins along the NW European Atlantic Margin**
K. Štolfova and P.M. Shannon

- 1500 – 1515: **Unravelling the 2.7 Ma Depositional Sequence from the Challenger Cold-Water Coral Mound (IODP Exp. 307): Sediment Contributors and Palaeo-Environments**
Mieke Thierens, Jürgen Titschack, Veerle A.I. Huvenne, Boris Dorschel, Jan-Berend Stuut, Rory O'Donnell, and Andrew J. Wheeler
- 1515 – 1530: **Multiphase Late Jurassic – Early Cretaceous rifting in the Porcupine Basin, offshore Ireland**
C. Bulois and P.M. Shannon
- 1530 – 1545: **Evolution of a Geopark: the world's first transnational Geopark at the Marble Arch Caves Global Geopark, Co. Fermanagh and Co. Cavan**
K. Lemon
- 1545 – 1600: **Mapping offshore geology from multibeam data south of Waterford Harbour**
Peter F. Croker and Maria Judge
- 1600: **Prizes, final announcements and close of meeting**

POSTER ABSTRACTS

A cluster of *Maccoya* (Echinoidea) from the Carboniferous of County Donegal

M. Barham, J. Murray and G. Sevastopulo

Trace Element Abundance and Human Epidemiology in Northern Ireland – the Tellus Case Study

A.V. Barsby, J. Offerdinger, J. M. McKinley, M. E. Young

Seismology in Schools (Seismeolaíocht sa Scoil) Pilot Programme

T. Blake and G. Campbell

The subvolcanic history of carbonate and silicate magmas in the Beara Peninsula, Co. Cork

A. Brady and K. Moore

Understanding Late Midlandian and Holocene depositional history of Donegal Bay: a high resolution seismic reflection interpretation

C. Clarke, C. Brown and S. Benetti

Irish sills and the Palaeocene-Eocene Thermal Maximum

K. Fernandes, S. M. Jones, R. Hardy, G. Clayton, R. Goodhue

Preservation of Biomarkers in Green River fossil fish and sediments

J. Hellawell, F. L. Gill, R. P. Evershed, R. D. Pancost, C. J. Nicholas and R. Goodhue

A crustal contribution in arc andesites: crystal isotope stratigraphy from Edgecumbe Volcano, Taupo Volcanic Zone, New Zealand

Màiri Gardner, John Gamble, Bruce Charlier, Rob Ellam, Richard Price, Dene Carroll

First results from an onshore/offshore wide-angle seismic experiment in SW Ireland

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

A pilot study of underground Audio-magnetotelluric (AMT) measurements and its application for the mining industry

Colin Hogg, Alan G. Jones, Jessica Spratt and James. A Craven

Field Geological Insights into the Structural Development and Petroleum Geology of the Mandawa Basin, Southern Coastal Tanzania

W.E. Hudson, C.J. Nicholas, S.D. Bennett, A. Mweneinda, I. Newth, P. Copestake, M. Thomas

A geophysical investigation of the Ringfort located on the Gowlaunlee estate, Co. Galway, Ireland

Sarah Kwateng

Role of computational geophysics in volcano seismology

I. Lokmer, G. S. O'Brien and Christopher J. Bean

Geological and Fluid Inclusion Studies of the Contact Zone between the Galway Granite and its Country Rock, Screeb, Connemara

O. MacManusa and M. Feely

Detrital zircon provenance and Ordovician terrane amalgamation, western Ireland

B. McConnell, N. Riggs and Q.G. Crowley

The Structural Evolution of Highly Extended Terranes

Ken McDermott and Tim Reston

New ⁴⁰Ar – ³⁹Ar ages for lava flows and sills within the Antrim Lava Group, NE Ireland

C. McKenna, J. Gamble, P. Lyle and P. Renne

Geoscience outreach in Ireland: recent developments in the Burren aspirant Geopark

M. McNamara and C. Gleeson

Unrest of Turrialba volcano (Costa Rica): Geophysical, Geochemical and Geodetical data during ten years of monitoring

F. Martini and OVSICORI-UNA Volcano Monitoring Group

MCMT3DID - a finite-element, 3D MT inversion code using local coordinates for each site and solving for distortion parameters

Marion P. Miensopust, Colin G. Farquharson, Alan G. Jones

Investigation of the controls on earthquake rupture speed

S. Murphy and C. J. Bean

Timing, relations and cause of plutonic and volcanic activity of the Siluro-Devonian post-collision magmatic episode in the Grampian Terrane, Scotland

J.C. Neilson, B.P. Kokelaar and Q.G. Crowley

The VARNET-96 refraction seismic project re-visited: fine-scale structure within the Irish Caledonides

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

Large-scale Acoustic Classification of Multibeam Echosounder Datasets within the INFOMAR Program

R. O'Toole, C. McKeon and D. Hardy

Characterising The Role of Basin Margin Structure On Finite Strain Patterns Across A 'Cleavage' Front From The Variscan Of Southern Ireland

Parker, C., Meere, P., Mulchrone, K., Stevenson, C.

Provenance of Western Irish Namurian Basin sediments inferred using LA-ICP-MS detrital zircon U-Pb geochronology

M.A. Pointon, R.A. Cliff, B.W.D. Yardley, D. Chew

Crustal anisotropy from local observations of shear wave splitting in the Marmara Region, Turkey

G. Polat, N.Meral Ozel, O.Tan and S.Ergintav

Crustal anisotropy in southwest Ireland from analysis of controlled source shear-wave seismic data

P.W. Readman, F. Hauser, B.M. O'Reilly, V.C. Do

Regional Case study: Using geostatistics to increase the accuracy of NO₂ mapping for governmental reports, in Northern Ireland

D.P. Robinson

Mapping of Cloyne Caves, County Cork and the relationship between levels of strain in the host bedrock and the extent of cave development at this site and others in County Cork

J.Savage, I.MacCarthy & B. Higgs

A comparison between lithospheric scale numerical and analogue models

J. Sheehan, B O'Reilly, and Dimitrios Sokoutis

Phosphatic overgrowths on zircon grains in Carboniferous sandstones

M. Stanislawska, U. Klötzli, E. Klötzli, D. Chew, W. Lustenhouwer

Ireland's first ITRAXTM: a marine sediment prospective

Jonathan N. Turner and Xavier Monteys

Spatial analysis approaches to modelling water quality in Northern Ireland

J.Watson

University research using Tellus data

Michael Young, Mark Cooper & Alex Donald