



Newsletter October 2011

Issue No. 27

Editor's Note

In July 2011 I took over editorial control and production of the IGI Newsletter from Jonathan Derham who is now the Honorary Secretary of the IGI and as such is kept very busy. I would like to thank Jonathan for the great work he did with the newsletter and will strive to maintain the standards of Jonathan and his preceding editors in the production of this newsletter.

This edition of the IGI Newsletter contains an article from Andy Bowden on the role of Continuous Professional Development within the IGI which forms an integral part of maintaining the professional accreditation of PGeo.

Paul Quigley from the Geotechnical Society of Ireland (GSI) which is one of the Sponsoring Bodies of the IGI has also contributed to this newsletter providing an update on the GSI and news of future events.

All contributions to this newsletter are greatly appreciated and I am sure there is a wealth of information, news and burgeoning articles out there amongst the membership. So please feel free to send them onto me!

Marie Fleming (Editor)

All Articles to Marie at marie.fleming@arup.com.

IGI News

As mentioned in the previous newsletter a new IGI Board is now firmly in place with Dr. Deirdre Lewis the newly elected President of the IGI. The following letter from Deirdre appeared in the Irish Times on August 3rd, 2011.

Sir, - In his recent excellent address to the MacGill Summer School, Ruairi Quinn highlighted the challenges facing modern education in Ireland (Home News, July 28th). He suggested potential reform of CAO point allocations for Leaving Certificate science, technology, engineering and maths ("Stem") subjects. He went on to say that more students take geography or French at higher level than the combined totals taking physics and chemistry.

The current geography syllabus comprises almost 30 per cent of physical geography and geology. For many geoscientists in Ireland, geography provides the only second-level scientific introduction to the study of geology and related geosciences (such as hydrogeology, geochemistry, geophysics, etc).

These subjects address perhaps the greatest challenge of the 21st century, the environmental challenge.

Geoscience includes a diverse array of activities, including mapping of our soils, seabed and mineral resources; mining and quarrying; protection of our groundwater; monitoring of earthquakes and tsunamis; characterisation of natural gas, wave, tidal and geothermal energy resources; as well as world-class collaborative research in understanding earth processes.

A small army of geoscientists works across the island of Ireland in both public and private sectors to ensure sustainable management of our precious natural resources and compliance with EU water, soil, mining and waste directives, using complex technologies.

A study undertaken by the Geological Survey of Ireland in 2007 valued the geosciences' direct and indirect contribution to the Irish economy to be €4.24 billion, or 3 per cent of GNP, creating over 30,000 jobs, many in rural areas.

The Institute of Geologists of Ireland would wish to see geography enhanced and promoted to students as a challenging Leaving Certificate "Stem" subject by the Department of Education, rather than dismissed as a "soft" non-science option. Ireland's response to increasing environmental challenges will depend on fostering and developing excellence in the education of young earth scientists. - Yours, etc,

Dr DEIRDRE LEWIS, President, Institute of Geologists of Ireland

Follow up/References:

<http://www.irishtimes.com/newspaper/letters/2011/0803/1224301767239.html>

Crisis in CPD?

The IGI's rigorous Continuing Professional Development (CPD) programme is possibly the most important factor in obtaining international recognition for the PGeo qualification. A CPD programme and a Code of Ethics are the two most essential planks of a modern professional body. In short, the CPD programme is here to stay.

When we joined the IGI we implicitly agreed to submit our CPD return for any particular year by the end of April in the following year. That is a rule. We also implicitly agreed to submit them on spreadsheets that can be downloaded from the IGI website.

This year less than half of our members had submitted their 2010 CPD by the end of April. The dragging out of the process of getting in the CPD returns wastes the valuable time of the IGI's secretariat. Worse still, the Board has had to 'bite the bullet' and make the unenviable decision to delist four members who have failed to submit their 2009 CPD returns. Crisis might be overstating the situation but there is a problem.

So what is the problem? I have asked numerous people what they think and asked at the AGM for any suggestions. Most people simply put up their hands and say "I know I should get it in on time". A few

have said that they found it hard to fulfil the minimum CPD hours, especially those in full-time employment in industry.

It does not seem widely known but three years ago the IGI Board decided that all lectures and courses organised and run by the Sponsoring Bodies (IAEG, IMQS, GSI, IAH & GAI) would qualify as Formal Training – that is in addition to courses for which one receives a certificate. Also the hours allotted to Informal Activity was increased to 30 hours and covers technical and scientific reading, library research and web research, and attending lectures, conferences, seminars, trade shows and field trips, which have not been organised by the Sponsoring Bodies. If you are interested in geology it is very easy to obtain the maximum hours for Informal Activity and if you are also an active member of one of the Sponsoring Bodies it is likely that you will obtain substantial Formal Training hours.

But simply completing the number of hours is not just what the CPD programme is about. The aim is that what we learn and gain in additional training should be structured. That is the point of the Personal Plan. As you are aware every year 25% of the CPD returns are selected at random and audited. One of the general comments made by the auditors was that the Formal Training and Informal Activity undertaken seemed to have little relevance to the personal goals and aims of the member.

Below are some interesting definitions of CPD provided by Eugene Daly.

Continuing Professional Development (CPD)

or **Continuing Professional Education (CPE)** is the means by which members of professional associations maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives.

CPD is defined as a commitment to structured skills enhancement and personal or professional competence.

CPD can also be defined as the conscious updating of professional knowledge and the improvement of

professional competence throughout a person's working life. It is a commitment to being professional, keeping up to date and continuously seeking to improve. It is the key to optimizing a person's career opportunities, both today and for the future ([Chartered Institute of Personnel and Development](#) (2000)).

CPD should be engaging, informative and progressive, embracing 'best practice' and easily digestible knowledge. It should neither be excessively demanding nor uninteresting. It should stimulate a desire to learn more about your profession and participate in it (The Association of Personal Assistants).

EurGeol Andy Bowden PGeo

Follow up/References:

<http://www.igi.ie/cpd-and-training.htm>

EU to adopt rules on radioactive levels in water



Monitoring requirements for radioactivity in drinking water are likely to be adopted shortly under the Euratom treaty. These requirements have been finalised for some time but they have still not been set in European legislation.

A proposal put forward by the EU executive on Monday, 01 August 2011 will supersede provisions on radioactivity in the drinking water directive. It integrates permissible levels set by the directive and

monitoring requirements into one single piece of legislation.

Annex II and III of the proposal specify where and how often samples should be taken, and how to conduct these tests. Only a very small percentage of drinking water systems are close to potential sources of man-made radioactive contamination, says the commission. But natural contamination occurs in many regions of Europe.

Follow up/References:

[Proposal](#) and [1998 drinking water directive](#) (see annex 1, part C)

Riches of the Deep

PICTURE THIS: two miles down in the North Atlantic and 1,000 miles offshore, black smoke and super-heated water is billowing from a crack in the ocean floor. As we learned this week, exotic fish, crabs and tubeworms live and thrive in this lightless and toxic environment, causing a rewriting of textbooks. The RV Celtic Explorer and Irish scientists are exploring the last great frontier on earth courtesy of Government funding. It is not an altruistic exercise. The volcanic vents provide valuable information not only on conditions in which life can develop; they also generate massive amounts of metal sulphides, which may contain silver, mercury, lead, nickel and zinc. Such rich deposits are already extensively mined onshore. Ireland lays claim to 125,000 square kilometres of underwater territory and overlying seas - five times its landmass - but research has only begun to expose its potential. Integrated mapping projects of the seabed are providing information on suitable sites for offshore renewable energy projects and for the routing of electricity cables from wind, wave and tidal generators. They also assist in petrochemical exploration and in the charting of safe shipping lanes.



Photo: The RV Celtic Explorer

The Geological Survey of Ireland and the Marine Institute are involved in offshore work where new technologies are pushing the boundaries of knowledge. It is the same on land where geoscience has begun to impact on the public imagination because of its potential to generate jobs and economic benefits. State investment has been estimated to return four to six times the capital outlay. That was certainly the case with the Tellus project, a subsurface geology survey designed in Dublin but only completed in Northern Ireland. Based on the information gained, the Belfast authorities took in four times the survey costs in new mining licence fees. The work is now being undertaken here.



Detailed geological information drives mineral exploration, fishing activity, energy projects and various ecological issues. But it doesn't stop there. Studies are currently under way assessing the availability of onshore geothermal energies for electricity generation. Water hot enough to do so with existing technology has been widely found at 5,000 metres. The work goes on. Knowledge of Ireland's complex geology is incomplete. That must be remedied if long-term water demands are to be met through the exploitation of aquifers. Government investment in such basic, life-enhancing information must not become an optional extra.

Follow up/Reference:

This article originally appeared in the Irish Times on Saturday 6th August

<http://www.irishtimes.com/newspaper/opinion/2011/0806/1224301949316.html>

<http://www.marine.ie/>

<http://www.gsi.ie/>

National Heritage Week 2011

National Heritage Week organised by the Heritage Council* was held this year on the 18th to 26th August. The aim of National Heritage Week is to protect and enhance the richness, quality and diversity of our national heritage for everyone and to increase awareness of Ireland's National Heritage and to highlight its importance to public policy and everyday life.



This year's National Heritage Week comprised of over 1400 events across Ireland. A number of events relating to the geosciences were held across the country comprising a range of fieldtrips, lectures and workshops.

In Bell Harbour, County Clare Dr. Ronán Hennessy presented a talk on 'Geology and Railways in Ireland; A Shared Heritage' which reflected on the shared heritage between railways and geology in Ireland that dates back over 200 years. Dr. Hennessy discussed the history and origins of railways in Ireland and the effect of geology on both the route selection and the development of the railway system in Ireland.

The importance of railways in the development of our geological knowledge, and in the revolution in space and time afforded by rail travel was reflected upon, with emphasis placed on the coincidental

emergence of minute-specific railway timetables and eon-scale geological time ranges.

Follow up/Reference:

**The Heritage Council is the statutory body charged with identifying, protecting, preserving and enhancing Ireland's national heritage. National heritage includes Monuments, Archaeological objects, Heritage objects, Architectural heritage, Flora, Fauna, Wildlife habitats, Landscapes, Seascapes, Wrecks, Geology, Heritage gardens and parks, and Inland waterways. www.heritageweek.ie
www.burrenconnect.ie
www.geoneed.ie*

Burren awarded UNESCO-supported Global Geopark Status



The Burren and Cliffs of Moher region of north Clare has been awarded the prestigious designation of membership of the UNESCO-supported Global Geopark network at the 10th European Geoparks Conference in Langesund, Norway.

The Burren now becomes part of a unique group of world locations that form part of the Global Network of National Geoparks. The award is the culmination of a long application process that was coordinated by Clare County Council through the Burren Connect project, with the support of the Geological Survey of Ireland and Shannon Development. There are currently 78 Geoparks in 26 countries worldwide.

Accepting the award on behalf of the Burren and Cliffs of Moher region, Mayor of Clare Cllr. Pat Hayes said "As part of this UNESCO supported initiative, The Burren and Cliffs of Moher region now enjoy global recognition for this unique landscape. Global Geopark status is in recognition of the established

network of specific sites of geological interest, a group of environmentally-conscious tourism businesses and a busy annual calendar of community-based events and activities. I want to congratulate everyone involved in achieving such a standard and Clare County Council looks forward to working with all parties on the further delivery of the Geopark programme".

Global Geopark status is not a legislative designation. Under the Geopark Network Charter each member must respect and adhere to local and national laws pertaining to conservation, planning, land management and access to private property.

"Global Geopark status does not create a national park or nature park and does not permit open access to private property or land. It is the role of a Geopark to encourage visitors and communities to experience geology at publicly accessible sites and trails, where maintenance and access can be managed" continued Cllr. Hayes.

Whilst the award has been granted to the Burren region, the actual components of the Burren and Cliffs of Moher Geopark are presently confined to specific public sites of geological and cultural interest, a network of visitor and education centres, the Burren Ecotourism Network businesses, and established walking routes such as the Burren Way and Burren looped walks.



Pictured receiving the award from Ms. Margarete Patzak, Programme Specialist, UNESCO is Cllr. Pat Hayes Mayor of Clare, Dr. Pat O'Connor, Acting

Director, Geological Survey of Ireland (on left) and Dr. Ronán Hennessy, Geopark Geologist, Burren Connect County Clare.

Dr. Pat O'Connor, Acting Director of the Geological Survey of Ireland commented *"The Geoparks network was established to help support local communities to sustainably develop their local economy through the promotion of geological heritage and the encouragement of ecotourism initiatives. The Geopark award is granted to regions that have an internationally important geological landscape but the award is not based solely on geology. As a member of the Global Geopark Network, the challenge now will be to further promote the Burren's geological heritage among local communities and visitors, and to help to raise an awareness of this outstanding landscape so as to maintain this designation into the future".*

Dr. Ronán Hennessy, Geopark Geologist said *"The involvement of the many local visitor and education centres, businesses, schools, and communities proved to be an essential contributory factor in achieving the designation".* Since 2008, Geopark meetings and events have been held throughout north Clare to communicate the concept of a Geopark.

Dr. Vincent Cunnane, Chief Executive, Shannon Development said *"the Burren is recognised throughout the world as an iconic landscape of outstanding geology and breathtaking coastal scenery. North Clare is famous for traditional music, dancing, match-making, Gaelic games, food, art and literature. Integral to all of this is a thriving natural and cultural landscape that is difficult to find anywhere else in the world. Shannon Development is very pleased to have worked on this initiative and be part of the group that achieved this global recognition. This award now gives a platform for the further development of eco tourism businesses and other initiatives in the area"*

Ms. Joanne McInerney, Manager of the Burren Outdoor Education Centre and Chair of the Burren Ecotourism Network said *"A Global Geopark must also support education programmes, such as the geology evening course held in spring of 2010 and 2011 in the Burren Outdoor Education Centre. We look forward to continue to play our part in increasing awareness of the important landscape of the Burren. The Geopark project is organising a Geo-Explorer Day*

in collaboration with the Burren Outdoor Education Centre on Saturday October 15th. The day's events will include introductory caving, geo-kayaking, hill-walking and a family beach exploration"

Follow up/References:

For further information or to arrange an interview please contact **Dr. Ronan Hennessy, Burren Connect Project on 086 3974759**. Information is also available at Burren & Cliffs of Moher Geopark project (www.burrenconnect.ie/geopark)

New Standards

The following 3 new British/European/International Standards have been published:

- Soil Quality. Guidance on the establishment and maintenance of monitoring programmes (**BS EN ISO 16133_2011**)
- Soil Quality. Determination of exchangeable acidity in barium chloride extracts (**BS EN ISO 14254_2011**)
- Soil Quality. Effects of pollutants on juvenile land snails (Helicidae). Determination of the effects on growth by soil contamination (**BS EN ISO 15952_2011**)

These new standards are the products of a programme by CEN TC345 Soil Quality to adopt existing International Standards as European Standards (ENs). ISO 14254 was published in 2001, ISO 15952 in 2006, and ISO 16133 in 2004.

ENs are automatically adopted as BSs. The new BS/EN/ISO standards include International Standards that have previously not been adopted as British Standards for a variety of reasons including because they were judged by the BSI Technical Committee EH4 as not being technically adequate, or not relevant to the UK, or because the Committee considered it did not have the expertise to judge whether the standard was of adequate technical quality.

The International Standard [BS EN ISO 16133] gives: *"This International Standard gives general guidance on the selection of procedures for the establishment and maintenance of programmes for long-term monitoring of soil quality. It takes into account the*

large number of objectives of soil-monitoring programmes.

This International Standard is intended to help provide a basis for dialogue between parties which might be involved in a monitoring scheme. Examples of soil-monitoring programmes from several countries are provided in Annex A."

They can be obtained from BSI.
(<http://www.bsigroup.com/>)

Geotechnical Society of Ireland (GSI)



The Geotechnical Society of Ireland represents and promotes geotechnical engineering in Ireland and will shortly be kicking off our lecture series for 2011/2012. Lectures are usually held once a month on a variety of topics, including:

- Investigation of vacuum consolidation of peat,
- Pile design for wind farms,
- Design and Performance of Embankments for the Limerick Southern Ring Road,
- Discussions on Eurocode 7 by consultants and contractors, and
- Guest lecture from an international speaker and also a joint lecture with the IAH.

The lecture details will be displayed soon on our webpage

www.engineersireland.ie/community/societies/geotechnical.

The majority of our evening lectures are broadcast live as webcasts on [Engineers TV](#) or are available to download as recordings from the website. The Geotechnical Society will also be hosting a

conference on major road projects carried out on a variety of ground conditions in Ireland in the past ten years in 2012. Details will be finalised later this year.

International Society for Rock Mechanics



The International Society for Rock Mechanics (www.ISRM.net) has nominated the Geotechnical Society of Ireland as the host chapter in Ireland. The main objectives and purposes of the ISRM are:

- to encourage international collaboration and exchange of ideas and information between Rock Mechanics practitioners,
- to encourage teaching, research, and advancement of knowledge in Rock Mechanics, and
- to promote high standards of professional practice among rock engineers so that civil, mining and petroleum engineering works might be safer, more economic and less disruptive to the environment.

The joining fee for individual members is €8 per annum. If you are interested in joining ISRM please contact Derek Luby (dluby@slrconsulting.com).

Paul Quigley (Arup) CEng MIEI PEng

Follow up/References:

www.engineersireland.ie/community/societies/geotechnical

www.ISRM.net

Health Protection Agency Publication July 2011

Impact on Health of Emissions from Landfill Sites RCE 18

Most waste in the UK has traditionally been disposed of to landfill sites. This can generate considerable public concern about the health effects of emissions and there have been suggested links to a range of health effects including cancer and birth defects. The Health Protection Agency (HPA) recognises that the practice of disposing of waste materials to landfill can present a pollution risk and a potential health risk. However, modern landfills are subject to strict regulatory control which requires sites to be designed and operated such that there is no significant impact on the environment or human health. An assessment of the health risks posed by landfill sites and other forms of waste management was published by the Department for Environment, Food and Rural Affairs in 2004, incorporating a review of the assessment by the Royal Society. The HPA has now carried out a review of more recent research into the suggested links between emissions from landfill sites and effects on health. This review encompasses the results of a number of epidemiological studies, detailed monitoring results from a major project funded by the Environment Agency, and advice sought from the Committee on Toxicity of Chemicals in Food, Consumer Products and the Environment. The HPA concludes that there has been no new evidence to change the previous advice that living close to a well-managed landfill site does not pose a significant risk to human health.



It is important that research continues to inform the risk of exposure from UK landfill sites. This should include the development of more sensitive sampling and analytical methods for pollutants detected

around landfill sites and, ideally, surveys of pollutant concentrations around more sites. It would also be valuable if more complete toxicological data were available for some of these pollutants. Detailed site specific risk assessment should remain an important part of the permitting and management process.

The HPA is aware that concerns about the health effects of landfill sites often stem from historic sites. However, it is not possible to provide definitive advice regarding historic or closed landfill sites which pre-dated waste management regulation in the UK, due to the large variability in wastes which entered these sites, and the variability in their design and operation when open. Where landfills are the subject of local concern, site-specific monitoring and/or modelling is needed to aid any risk assessment and address any uncertainty about the nature of any emissions.

The role of the HPA is to provide expert advice on public health matters to government, stakeholders and the public.

Follow up/References:

The full publication can be downloaded at:

<http://www.hpa.org.uk/Publications/Radiation/DocumentsOfTheHPA/RCE18ImpactonHealthofEmissionsfromLandfillSites/>

Institute of Materials, Minerals and Mining (IMMM) Medal for Excellence

The Medal for Excellence from the IMMM is awarded for conspicuous contribution during the year or cumulatively over a number of years to the art, science and practise of the mining industry. In 2011 it was awarded to Dr. John Ashton FIMMM, Chief Geologist at Tara Mines.

Dr John Ashton joined Tara Mines in 1983 and is a long-standing advocate of the importance of geology to the mining industry. He played a pivotal role in improving the understanding of mineralisation in Ireland. As part of the in-house geological team at Tara, he was responsible for organising researchers on topics such as age dating and isotopic studies. Publishing this knowledge has advanced the understanding of carbonate-hosted base metal deposits. Ashton used this geological awareness to

help improve grade control and resource estimation protocols.



Dr John Ashton FIMMM(on the right) receiving his Medal for Excellence from Jan Lewis President of the IMMM.

Follow up/References:

www.iom3.org

News of Members

Bon voyage and best of luck in all their adventures to EurGeol Stephen Bradley PGeo and his family who have just set up home on the beautiful island of Reunion in the Indian Ocean.

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Best wishes to EurGeol Lloyd Twomey PGeo and his family on their recent departure to Brisbane, Australia. Lloyd will continue to work as an Associate in Arup based in the Brisbane Office. Due to his current geographical position Lloyd has resigned from his position on the Board of the IGI.

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Congratulations to EurGeol. Prof. Stephen Daly, P.Geo. who has recently taken over as Head of School at the UCD School of Geological Sciences. Prof. Daly will take over from EurGeol. Prof. Frank McDermott, P.Geo.

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Consultant Geologist Gareth Jones PGeo gave a general overview on Fracking or "Hydraulic Fracturing" on Clare FM, Morning Focus programme - August 8th 2011. A podcast of this interview is available on the IGI website at the following link:

<http://www.igi.ie/news/interview-on-fracking-clarefm.htm>

Book Review



Unfortunately there are no book reviews this quarter – if you would like to review a book please send your review to marie.fleming@arup.com.

Conferences/Upcoming Events





INFOMAR
Integrated Mapping for the Sustainable Development of Ireland's Marine Resource

INFOMAR welcomes you to the 2011 Annual Seminar

Dates for your diary: November 16th-17th, 2011

Details and Agenda to follow

Location: Marine Institute, Rinville, Oranmore, Co. Galway

www.infomar.ie No registration fee required

Numbers limited so please confirm attendance ASAP to: linda.greagh@marine.ie

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Conferences/Upcoming Events

55th Irish Geological Research Meeting

The 55th Irish Geological Research Meeting will be hosted by University College Cork and the School of Biological, Earth & Environmental Sciences (UCC) over the weekend of the 17th - 19th February, 2012. Further information is available at <http://www.ucc.ie/en/bees/research/IGRM2012/>

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IRISH GEOLOGICAL ASSOCIATION GOLDEN JUBILEE YEAR 2011

IGA –Celebrating 50 years of exciting geology - and in the City of Science.

For more information on the IGA's proposed program of events please refer to:

<http://www.geology.ie/>

Photo-File



Child labour on Inis Mór

Source: Photo by Marie Fleming

Please send a favourite geo – or environmental picture to this spot.

Newsletter published by:

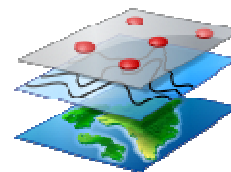
Institute of Geologists of Ireland
c/o UCD School of Geological Sciences, University
College Dublin, Belfield, Dublin 4, Ireland.
Phone: +353 1 7162085. Fax: +353 1 2837733.
Email: info@igi.ie.



ONLINE GEOSCIENCE DATABASES & MAPPING

SHORT COURSE

Trinity College Dublin
(Museum Building, Room M20)



Thursday 10th November 2011: 9H30 – 13H30

The IGI is organising a 1 day seminar on publicly-available datasets and associated online mapping and GIS web interfaces. Presentations will be given by experts from government agencies including the GSI, EPA & EMD. Topics covered will include:

- Bedrock geology
- Minerals
- Soils and subsoils
- Hydrogeology and Groundwater Protection Schemes
- Water Framework Directive
- Water features and hydrometric data
- Geophysics
- Geotechnical databases
- Landslides
- Aggregate potential mapping
- Borehole databases
- Seabed mapping
- Document Management System online
- 3-D modelling and visualisation

Lunch, tea and coffee included.

LIMITED AVAILABILITY OF PLACES, SO PLEASE REGISTER SOON

For further information and registration details, visit www.igi.ie
CPD points will be applicable for this short course