

iCRAG

NEWSLETTER DECEMBER 2016



Welcome!

Welcome to the iCRAG Newsletter. As you'll see, over the past few months iCRAG researchers have been busy attending conferences, delivering keynotes and bringing the work of iCRAG out to the general public.

If you have any news items that you want to convey to other iCRAG members, please let us know.

iCRAG



Science Foundation Ireland Director of Programmes Dr Darrin Morrissey (left) with iCRAG Deputy Director Prof. Balz Kamber (right) launch the TIGER scanning electron microscope in the iCRAG Lab@TCD

Launch of iCRAG@TCD Lab

December 8th saw the launch of the iCRAG@TCD lab. The facility, which is led by iCRAG Deputy Director Prof. Balz Kamber, comprises state-of-the-art electron and laser beam equipment for the characterisation of geoscience material. The event marks a new era in geo-analysis in Ireland with the launch of the first dedicated scanning electron microscope, funded by Science Foundation Ireland, using the latest in detector technology for the characterisation of minerals. The instrument is a Pan-European collaboration of three leading manufacturers giving Irish researchers a cutting edge in applied and fundamental research.

The TCD geochemistry team will put on a three day postgraduate-level short-course in microbeam analysis on 11-13th January 2017. If you wish to attend, please contact [Deirdre Clayton](#)

Save the Date: iCRAG 2017 conference

The inaugural iCRAG conference will be held in the Aviva stadium's 'Havelock Suite' on Thursday 20th April 2017. This event will serve to showcase iCRAG research to the geosciences community, including academic peers, funding bodies and current and prospective industry partners.

In brief, the day will include a complete poster session, alongside select talks and exhibits. Further information will follow.

Current vacancies

A number of postdoctoral and PhD research positions are currently available in iCRAG. Details on these vacancies are available [here](#).



Recent Success

Bruce Misstear elected Secretary general of IAH



iCRAF Funded Investigator and hydrogeologist Professor Bruce Misstear from Trinity College Dublin was elected as Secretary General of the International Association of Hydrogeologists in September at its congress in Montpellier, France. The IAH is the world's leading association for the advancement of groundwater science, with members in more than 130 countries. As Secretary General, Bruce's role will include outreach activities between IAH and other international and national organisations involved in water science, policy and management.

Bruce is a specialist in groundwater development, and has been involved in groundwater resources projects in many countries in Europe, Africa, Middle East and Asia. He is the author or co-author of more than 150 journal papers, books, research reports and conference papers. The second edition of his international textbook *Water Wells and Boreholes* is due to be published early in 2017.

David Chew receives SFI Investigators Programme award

iCRAF Funded Investigator Dr David Chew (iCRAF at TCD) has been announced as a recipient of the SFI Investigators Programme award, worth €500,000 over 5 years. The award will be used to develop a new image-based approach to dating calcite by the uranium-lead method.

SFI Investigators Programme awards support the development of world-class research capability and human capital in areas of science, technology, engineering and mathematics that demonstrably support and underpin enterprise competitiveness and societal development in Ireland. The Investigators Programme, with its focus on scientific excellence and impact will place Ireland's researchers in a strong position to compete for Horizon 2020 research grants.

Dr Chew's research focusses on the thermal history of Ireland and its offshore basins, sedimentary provenance analysis and the application of geochronology and thermochronology to a variety of problems in the geosciences.

Speaking at the announcement of his award, Dr Chew outlined the work that will be undertaken through this project:

"Calcite is the major rock-forming mineral in limestones, and is a common mineral in veins in zinc and lead ore systems such as the world-class Irish zinc-lead mineral province. This project will develop a new image-based approach to dating calcite by the uranium-lead dating method, using a laser-ablation system coupled to a mass spectrometer."



Maria McNamara featured in Royal Irish Academy's "Women on Walls"

Congratulations to Dr Maria McNamara (iCRAF at UCC) on being selected as one of twelve "Women on Walls" in the Royal Irish Academy. The initiative seeks to make female leaders visible through a series of commissioned portraits to create a lasting cultural legacy.

More information on the initiative is available [here](#).



Tadhg Dornan wins Trinity Lightning Talks
Congratulations to PhD student

Tadhg Dornan on winning the annual TCD School of Natural Sciences and School of Mathematical Sciences talks recently. On the night, Tadhg delivered an outstanding flashtalk on concrete, pyrite and the science within. Tadhg also penned an excellent article on his work – "Concrete: An Aggregate of Problems" - which can be read [here](#).



iCRAG Abroad

Globetrotting

35th IGC in South Africa

An iCRAG contingent of Dr Steve Hollis, Dr Roisin Kyne, Dr Thomas Rielger, Dr Lingli Zhou, Dr Aggie Georgiopoulou and Oakley Turner, along with our collaborators GSI, attended and presented within the shadow of Table Mountain in Cape Town, South Africa, at the 35th International Geological Congress in September. Derived from the individual iCRAG projects, both oral presentations and posters demonstrated the progression of the research, with Roisin and Steve also presenting previous research. Former and current investigators within the field engaged in lively debate throughout the conference, debate which was aided to by the dramatic backdrop and local food and drink delights.

The conference itself covered all aspects of geoscience including, away from aspects of geoscience research, socio-economic, ethics and public engagement conversations. The next conference is to be held in Delhi, India in 2020.



Peter Croot aboard RV Polarstern

iCRAG Co-PI Prof. Peter Croot is currently aboard the RV Polarstern on its journey from Bremerhaven, Germany to Cape Town, South Africa as part of the POGO Smart training summer school. More info on the trip available [here](#).



iCRAG researchers have also delivered presentations and posters at various meeting and conferences, including the following:

- European Mineralogical Conference in Rimini – Maurice Brodbeck (iCRAG at TCD)
- 3rd INISCE International Submarine Canyon Symposium in Victoria, British Columbia, Canada – Kevin Power (iCRAG at UCC)
- 3rd Meeting of the Working Group on Sediment Generation in KU Leuven in Belgium - Jess Franklin (iCRAG at NUIG)
- 43rd Congress of the International Association of Hydrogeologists in Montpellier – Elia Cantoni and Philip Schuler (iCRAG at TCD)
- Let's Talk Science in Ghent, Belgium and the London School of Hygiene and Tropical Medicine – Dr Fergus McAuliffe
- 79th Meeting of the Meteoritical Society in Berlin – David Kaeter (iCRAG at UCD)
- COST Action 'Migrate' working group in Copenhagen - Dr Srikumar Roy (iCRAG at UCD) presented his work on the natural gas hydrate potential in offshore Ireland
- 3rd EAGE Integrated Reservoir Modelling Conference in Kuala Lumpur - Deirdre Walsh (iCRAG at UCD)
- Juergen Lang attended two valuable training workshops one in University of Salamanca on stable isotope analysis and another in Naples on fluid and melt inclusions
- Association of Sedimentologists Annual Summer School in Sardinia, which focused on 'Sediments from Land to Sea' - Arif Hussain, Kishan Soni and Lewis Whiting (iCRAG at UCD). It's a hard life but someone had to take one for the team and spend a week in Sardinia.



Graduate of the Year

Congratulations to David Kaeter (iCRAG at UCD) who was recently honoured as MSc Graduate of the Year at the Institute of Earth and Environmental Sciences in the University of Potsdam.



iCRAG Summit

The inaugural iCRAG Summit took place on June 8-9th 2016 at the Hodson Bay Hotel, Athlone. Day 1 began with opening addresses by Prof John Walsh and Dr Jennifer Craig, which were followed by all project leads delivering updates on their research through presentations and dedicated spoke and platform discussion sessions. After these sessions, a highly enjoyable team building activity was undertaken before everyone retired for the conference dinner. On day 2, discussions focussed on potential cross-spoke linkages, as well as a future planning session. Pictures from the Summit are available in the G Drive Depot.



Science Apprentice Magazine

During November the Earth and Resources episode of the *Science Apprentice Magazine* was released with the *Irish Independent*, reaching readers right across the country. Many thanks to all who helped contribute to this fantastic resource for children, teachers and parents, especially Prof. John Walsh and Dr Roisin Kyne. Alongside the release of the magazine, iCRAG launched a video of our trip to the Arigna Mining Experience in Roscommon. You can view the video [here](#) and collect your science apprentice star [here](#).



iCRAG featured on Silicon Republic

iCRAG Centre Manager Dr Jennifer Craig, and postdoc Dr Roisin Kyne, were interviewed by Silicon Republic as part of the Real Faces of Science series. The interviews covered topics such as geoscience careers, diversity in the STEM sector and the transition from research into management. You can read both interviews on the news section of the iCRAG [website](#).



Atlantic Ireland and Geoscience Ireland

PIP, our largest industry sponsor, held its annual conference 'Atlantic Ireland' on 1st-2nd November in the Hilton Double Tree, Ballsbridge. Team members from the Marine, Hydrocarbon and Geophysics spokes delivered presentations and posters which were very well received. Our Clare Core Display developed with Statoil proved to be a very popular exhibit.



In addition, iCRAG was well represented at Geoscience Ireland on November 2nd in Dublin Castle, with all PhDs and postdocs presenting posters to the geological community. It was also great to have the iCRAG Scientific Advisory Committee in attendance at both conferences.



Update of Mike Philcox's *Blue Book*

The team within the 3D Ireland Platform and TP 1 of the Raw Material Spoke (John Guven, Dr Roisin Kyne, Dr Koen Torremans, Robert Doyle and Dr Cole Jiulin Guo) are currently in the early stages of working together with Dr Mike Philcox to revise and update his seminal *Blue Book* on the complete stratigraphy of the Irish Lower Carboniferous. This book was originally published in 1984 and as work progresses we look forward to updating you in future Newsletters.

It's a dextral world: Loughshinny field trip

In September the first iCrag-wide fieldtrip took place, with a large delegation from iCrag visiting Loughshinny. Keep an eye out for upcoming fieldtrips and training opportunities.



Selected latest publications

Prof. Chris Bean (iCrag at DIAS): Micrometre-scale deformation observations reveal fundamental controls on geological rifting. *Scientific Reports*. Available [here](#).

Dr Muhammad Mudasar Saqab (iCrag at UCD): Seismic geomorphology and evolution of early mid Miocene isolated carbonate build ups in the Timor Sea, North West Shelf of Australia. *Journal of Marine Geology*. Available [here](#).

Dr Zsuzsanna Toth (iCrag at UCC): Controls on subsurface methane fluxes and shallow gas formation in Baltic Sea sediment (Aarhus Bay, Denmark). *Geochimica et Cosmochimica Acta*. Available [here](#).

Dr Lingli Zhou (iCrag at TCD): Formation of hydrotalcite coating on the aluminum alloy 6060 in spray system. *Clay Minerals*. Available [here](#).

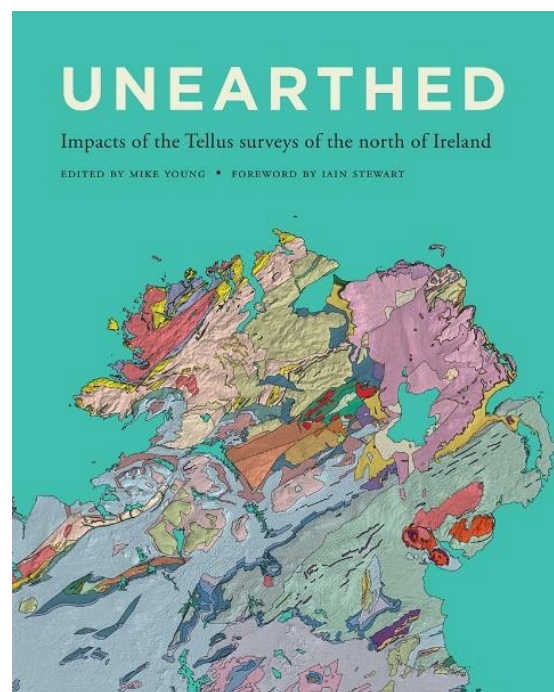
iCrag in the sky

Dr Conor Cahalane (iCrag at NUIM) and the NCG are in the process of design and development of a new airborne sensor pod for high resolution aerial surveys, and have been testing over Dublin Bay. This pod, incorporating RGB, multispectral, hyperspectral and thermal imagery has potential to be applied to slick feature identification, topographic and bathymetric surveys, coastal and environmental monitoring, precision agriculture, aquaculture and infrastructure mapping.



Launch of Tellus

Impacts from the Tellus survey of Northern Ireland and the six northern counties of the Republic of Ireland have been showcased in new book entitled *Unearthed: Impacts of the Tellus surveys of the north of Ireland*.



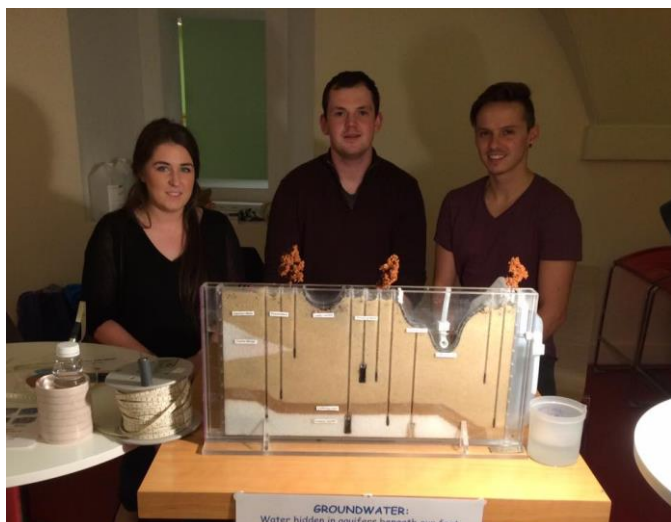
iCrag Director Prof. John Walsh co-authored Chapter 14 which examined igneous activity in the north of Ireland during the Palaeogene period, and post-doc Steve Hollis co-authored chapter 12 on sulphide mineralisation in the Tyrone igneous complex. The publication can be downloaded [here](#).



iCRAG at Probe

September 30th saw European Researchers' Night return to Trinity College as Probe. The campus-wide event comprised of music, talks, performance, films, food, experiments and workshops that explored the fascinating research that is shaping our world.

iCRAG had three excellent exhibits including the groundwater model run by Damien Mooney and Prof. Catherine Coxon, Ore to the Core run by James Stratford and Oakley Turner, and the Augmented Reality Sandbox run by Torsten Uhlig, Fani Papageorgiou, Maurice Brodbeck, Hilde Koch, Foteini Drakou and Dr Catherine Rose.



The "Ploughing"

In September iCRAG attended the National Ploughing Championships in Screegan, Co. Offaly. The "Ploughing" is the largest outdoor festival in Europe with over 300,000 people in attendance. Dr Robbie Goodhue (iCRAG at TCD), Aileen Doran, Dr Cole Guo and Dr Srikumar Roy (all iCRAG at UCD) and Dr Conor Cahalane (iCRAG at NUIM) had a hectic but enjoyable day communicating geoscience and engineering to a very engaged audience.



Grow Your Own Crystal Competition launched

The 2016 Grow Your Own Crystal Competition has been launched by iCRAG and SSPC – the Solid State Pharmaceutical Centre.

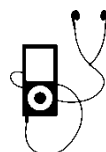
The aim of the competition is for an individual second-level student to grow a single crystal. Crystals will be judged by a panel of experts from iCRAG and SSPC.

You can enter your crystal by tweeting us a picture using #sspc_crystals. More information on how to enter and what crystals to grow can be found on the [iCRAG website](#).



iCRAG on the radio

Dr Tiernan Henry (iCRAG at NUIG) was featured on RTE Radio 1's Sunday Miscellany in November with an artistic take on geology. If you missed the show you can listen back [here](#).



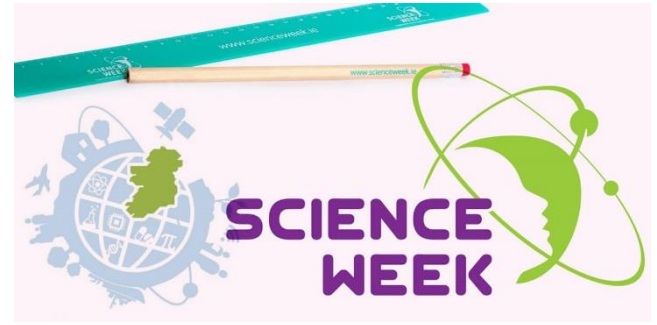
Science Week 2016 at iCRAG

Science Week (13th-20th November) at iCRAG was quite a busy week. Not only did our science take over the radio waves, TV screens and all of our daylight hours, but the supermoon during Science Week helped cast a pearly glow on our nights as well. Events kicked off on Saturday 12th, when iCRAG Education and Public Engagement Manager Dr Fergus McAuliffe was on Newstalk's Futureproof speaking about the science news of the week. On Sunday 13th, Dr Maria McNamara (iCRAG at UCC) took part in Celebrate Science in Cork. On Monday 14th, Dublin's Notre Dame School joined iCRAG in UCD for a geochemistry workshop using a 'Spectroscope in a Suitcase' run by Alex Russell and Fani Papagorgiou. Also on Monday, the second series of '10 Things to Know About' kicked off at 8.30pm on RTE1. The series will run for the next 6 weeks and is co-presented by Fergus. Tuesday 15th saw iCRAG take its smartphone microscopes up north to the Cavan & Monaghan Science Festival (pictured). Rackwallace NS, St Louis GNS and Corcaghan NS all took part in the workshop run by Dr Lea Duran (iCRAG at TCD) and Aileen Doran (iCRAG at UCD)

On Wednesday 16th, iCRAG made it way to Athlone, to give several Smart Futures geology career talks at Our Lady's Bower Secondary School. iCRAG researcher Dr Roisin Kyne and Kishan Soni (iCRAG at UCD) and Dr Steve McCarron (iCRAG at NUIM) all helped to inspire tomorrow's geoscientists! In the afternoon, iCRAG Director Prof. John Walsh made an appearance on Swipe TV on RTE2 (pictured) to chat about the Science Apprentice magazine. On Friday 18th, all eyes and ears were glued to the radio for the livestreaming of the Ray D'Arcy show on RTE1 with Fergus, Deirdre Clayton and Tom Blake from DIAS who demonstrated seismic waves and plate tectonics using digestives, jam, cream cheese and a slinky. On Sunday 20th, iCRAG were well represented by Dr Pat Meere and Juergen Lang at Neptune Stadium, Cork, during Cork Science Festival.

If you know of any primary schools that would like a visit from iCRAG and our microscope workshop please get in touch with [Fergus](#).

By Dr Anthea Lacchia – iCRAG at UCD.



iCRAG on social media

For those new to iCRAG, there is a LinkedIn [group](#) for all of our members. Just search for "iCRAG Members" on LinkedIn to join.



Have something you would like to see covered?
Get in touch: fergus.mcauliffe@icrag-centre.org

