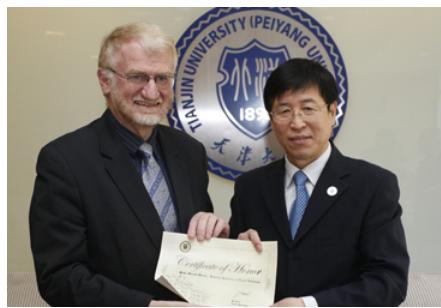


# Engineer's Newsletter

*from the UCD Engineering Graduates Association*

Issue 3 | March 2014



## Professor Orla Feely Appointed VP for Research



### INSIDE THIS ISSUE

#### Gender Balance in Engineering

EGA President PJ Rudden considers the issue of gender balance in engineering.

#### E.T. Hanrahan Memorial Symposium

Held to honour the life of Eamon Hanrahan, one of the 'founding fathers' of Geotechnical Engineering in Ireland.

#### Gerry Byrne in China

Prof Gerry Byrne awarded the title of Honorary Professor by Tianjin University, China.

#### Review: Panel Discussion 2013

Review of the Panel Discussion, led by An Taoiseach Enda Kenny TD.

#### Foundation Day Honours

Dr. David O'Reilly receives Foundation Day Medal

#### EGA Mock Interviews

Mock Interviews conducted for Final Year students in October 2013 and February 2014.

#### International Engineering

Fionán O'Sullivan (BE Electronics, 2013) on his work with Jaguar Land Rover in the UK.

#### Upcoming Events

Annual Spring Lecture & Annual Lunch

### The Governing Authority of UCD has appointed Prof Orla Feely of the School of Electrical, Electronic & Communications Engineering as Vice-President for Research, Innovation & Impact.

Prof Feely is currently Chair of the Irish Research Council, and her appointment was welcomed by Sean Sherlock, TD, Minister of State with responsibility for Research & Innovation, "I warmly congratulate Professor Orla Feely on her appointment.

Professor Feely plays an important role in fostering the research agenda nationally. As chair of the Irish Research Council, she has shown strong leadership in delivering enhanced opportunities to Irish-based researchers. Horizon 2020, the EU framework for research and innovation offers our academics unprecedented opportunities and I am confident that Professor Feely will continue to provide this outstanding leadership."

Prof Feely took her primary degree in electronic engineering at UCD, before undertaking her PhD at UC Berkeley. She later returned to lecture at UCD and is currently Professor and Subject Head of Electronic Engineering. She leads a research group in nonlinear circuits and has received three successive SFI Principal Investigator awards, along with grants and prizes from other national, international and industry sources. She is a Fellow of the IEEE, Engineers Ireland and the Irish Academy of Engineering. She is also a director of the Young Scientist and Technology Exhibition. In 2013, Prof Feely spearheaded the development of UCD's energy research strategy, which led to the foundation of the UCD Energy Institute.

Responding to her appointment, Professor Feely said she was greatly looking forward to the challenge, "We see the benefits of research in terms of societal, economic and cultural impact, as well as on our education system. This role creates a tight link between research, innovation and impact on society. Our community of world-class academics aim to make a difference through their scholarship and my aim is to ensure they have every opportunity to do so."

# GENBALANCE

## Gender Balance in Engineering

by P.J. Rudden, EGA President

**Engineering underpins human progress. Engineering is about the practical delivery of scientifically informed solutions for the great challenges and opportunities in a rapidly changing world. It is therefore surprising that females are not as much part of this challenge as males.**

I know in 2009 the percentage of females as members of Engineers Ireland was approximately 9%. In the same year, the UK Engineering Council reported that 'fewer than 13% of new Chartered Engineers were women'.

UCD reports this year that the percentage of females in the First Year class has fallen to 15% in 2013. In the 1970s I know that the percentage of female engineering students in UCD was approximately 1% but it grew rapidly in the 1980s and 1990s to some 20% - 30% on average.

This is an issue nationally and internationally that needs to be addressed. When I visited UCC and UL as President of Engineers Ireland in 2012 I was informed of concerns on lack of gender balance in the engineering student balance in both colleges.

On the other hand, the University of Sydney reports in May 2012 'mid-year female graduates of engineering and information technologies experiencing record numbers'. So it's not a universal issue on a global scale.



There are many reasons put forward for the lower participation of females in the engineering profession. Factors involved include:

- Lack of emphasis on STEM subjects taught at second level in girls' schools
- Cultural perceptions of women
- Influence of family attitudes
- Favoured career/life balance
- Variations depending on various branches of engineering and science

In general terms there appears to be a predominance of males in the physics, engineering and IT areas while the reverse is the case with social science and life sciences generally.

My own personal experience is one favouring a 50:50 male:female balance as achievable as the technical and project management skills of both genders are manifestly equal and need to be recognised as such. Engineers Ireland recognised this ideal balance in the widely acclaimed TV advert on 'Chartered Engineer - bringing dreams to life for me and you'.

The EGA are concerned at the developing gender balance issue at UCD Engineering and will set up a Board Subcommittee to make recommendations to help address the current situation.

# E. T. Hanrahan Memorial Symposium

**The E.T. Hanrahan Memorial Symposium was held at the School of Civil, Structural and Environmental Engineering in September 2013.**

The main objective of the symposium was to honour the life and work of Eamon Hanrahan, who died in 2012 after 95 productive years. Eamon was former Associate Professor and Head of Department and was one of the "founding fathers" of Geotechnical Engineering in Ireland. His research work on the engineering behaviour of peat is still highly regarded internationally.

The symposium was attended by some 50 delegates, including Eamon's family, retired and current academic staff members and members of the geotechnical community in Ireland. It provided the opportunity to the delegates to hear of some of the latest developments in peat mechanics with speakers from Irish practice and from the Netherlands and Sweden.



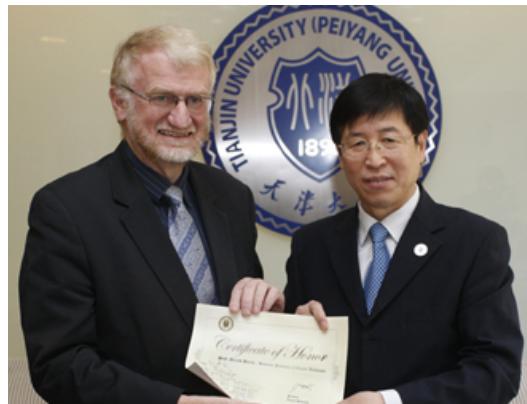
Pictured at symposium were (l-r): Dr Mark Richardson, Head of School of Civil Structural and Environmental Engineering; Prof. Máire Ní Annracháin, Professor of Modern Irish Language and Literature; Emeritus Professor Tom Casey; Mrs. Deirdre Hanrahan; Prof. Mairéad Hanrahan Department of French, University College London; Dr Tadhg O'Hannrachain, Senior Lecturer, School of History and Archives; Dr Mike Long, School of Civil Structural and Environmental Engineering.

## Prof Gerry Byrne Receives Honorary Professorship from Tianjin University

**On 25 October 2013, Tianjin University, China, awarded the title of honorary professor to Professor Gerry Byrne, Principal of UCD College of Engineering & Architecture and Dean of Engineering.**

Tianjin, with a population of 13 million, is a metropolis in northern China and one of the five national central cities of the People's Republic of China (PRC). Founded in 1895 as Peiyang University, Tianjin University was the first university established in China and is among China's top universities. In its almost 120 years of existence, Professor Byrne is only the 75th recipient of the Honorary Professorship Award.

The UCD School of Electrical, Electronic and Communications Engineering has partnered with the Tianjin School of Optoelectronics and Precision Engineering to offer a dual qualification and will receive masters students into UCD commencing in September 2014.



Pictured: Prof. Gerry Byrne receiving the award of honorary professor from Tianjin University President, Prof. Li Jiajun.

# EGA Panel Discussion 2013

The EGA Autumn Panel Discussion took place in October 2013 and was led by An Taoiseach Enda Kenny. The Taoiseach was welcomed to UCD by EGA President PJ Rudden who introduced him as a Taoiseach who was finally leading Ireland back to a position where we are masters of our own destiny again.

The EGA President outlined how engineering manufacturing was leading the national recovery through the export of our food, biomedical, pharma, ICT and other engineering products. Indigenous manufacturing represents some 50% of total manufacturing in Ireland - a fact that is often lost with the media emphasis on FDI manufacturing. This is also essential, but is not the only ingredient in our industrial mix.

When making his opening address, the Taoiseach stated that the Government's top priority is jobs: 'a strong manufacturing sector is essential to growing our exports to sustain and create jobs in innovative, home-grown businesses as well as in foreign companies who locate in Ireland.' The Taoiseach was then followed by our Panel Speakers, four leading manufacturing entrepreneurs from across Ireland who each presented their own ideas on how to grow their businesses.

The first speaker was Ian Quinn (Chairman, Creganna-Tactx Medical) who called for a stable environment to allow manufacturing which has a future in Ireland.



EGA President PJ Rudden, Prof. Gerry Byrne, An Taoiseach Enda Kenny and Dr. Hugh Brady President of UCD

'Short term jobs will come from small indigenous businesses. Long term jobs will come from innovative Irish enterprises.' Creganna currently employ over 800 people.

'Manufacturing is sustainable in Ireland' said Martin McVicar (founder of Comblift). 'It is better to be a big company in a small niche market than a small company in a big market. There needs to be a close link between R&D and Sales/Marketing and we have a relatively short time to market'. Manufacturing long load and specialised forklifts, he has grown employment from 160 in 2009 to 275 in 2013 and hopes to grow to 400+ by 2018.

Philip O'Doherty (founder of E&I Engineering) is in the electrical switchgear export business from Donegal, with 475 staff in Ireland and 220 staff in Dubai. He promoted lean manufacturing and working with the education sector to produce highly skilled employees including showing local schools around his factory.

Dr Edmond Harty is the CEO of Dairymaster and employs over 300 staff making automatic milking machines. 'Innovation is the key' he said, 'we are about making dairy farming more

profitable, more enjoyable and more sustainable. Universities should be demonstrating the value and validating the performance of products. This would help exports. I can't get the people with the right skills in Ireland'. A number of the speakers spoke of the support to FDI companies whereas there should be more State supports for indigenous Irish firms.

UCD Dean of Engineering Gerry Byrne then gave the Response to the Panel Discussion and spoke of the need to internationalise manufacturing education and practice calling the new cyber world the 'Internet of Things'. This was akin to the 4th generation industrial revolution which is now creating transformational in the way we manufacture and go about our business. Colleges like UCD are adapting to these new challenges and will continue to do this. Gerry was recently Chairman of the Irish Academy of Engineering, who developed a national report on 'The Future of Manufacturing in Ireland', which he presented to the Taoiseach.

Throughout the evening the Taoiseach took extensive notes and then gave an unscheduled but very welcome and detailed response to what had been said. "You four people represent the future of manufacturing and you have direct access now to the Head of Government. We hear what you are saying and we will investigate and act further if it creates new jobs for our people. I want to ensure jointed up Government thinking to ensure that we are acting correctly and efficiently. The Government through our Action Plan for

Jobs will continue to support measures that will capitalise on our advantages - our people, our proximity to key markets and our pro-business policies."

There was a very full and appreciative audience at the event including the Chairman of Enterprise Ireland Terence O'Rourke and its Director of Cleantech Industry and Global Markets Tom Kelly whose efforts were praised by a number of the Panel Speakers. The audience had many questions about industrial policy to which members of the panel replied.

Feedback on email, Twitter and Facebook concerning the event has been very positive, as were the personal comments of many attendees who thought it to be a most entertaining and inspiring event. Particular thanks are due to UCD President Hugh Brady, Professor Gerry Byrne, Michael Redmond Buildings Officer, EGA Administrator Clare Davidson and security officers for permission and assistance in making the event such an unqualified success in the view of those who attended.



A full attendance for the Panel Discussion at the Clinton Auditorium



Taoiseach Enda Kenny addresses the EGA attendance



Panel speakers Philip O'Doherty, Martin McVicar, Edmond Harty and Ian Quinn meet an Taoiseach Enda Kenny

# UCD Foundation Day Honours Dr David O'Reilly



The UCD Foundation Day Medal was awarded to Dr David O'Reilly at the UCD Foundation Day Event last November. The Medal is awarded annually to a University College Dublin graduate who demonstrates great achievement.

Dr O'Reilly is a UCD Engineer (BE Chemical, 1968) who rose to the very top of one of the most competitive industries in the world as Chairman and CEO of Chevron Corporation.

"In recognition of his meteoric rise from UCD Chemical Engineering student to the pinnacle of the world oil industry and equally for his willingness to give back to his alma mater, not just financially, but also of his time, energy and wisdom to nurture future generations of UCD students, it is my great pleasure to present the 2013 UCD Foundation Day Medal to David O'Reilly," said UCD President, Dr Hugh Brady.

"David always appears to carry his great achievements lightly, and is equally engaged and courteous in discussions with undergraduate students and with national leaders. Generations of students and researchers in UCD will benefit from his leadership and from his generosity."

The Medal is awarded annually to a UCD graduate who demonstrates great achievement. Previous recipients of the UCD Foundation Day Medal include: Peter Sutherland, Maeve Binchy, Brian O'Driscoll and Bill Whelan. It was inaugurated in 2004 to coincide with the 150th anniversary of UCD's founding. This story originally appeared in UCD News.

## Upcoming Events

### Annual Spring Lecture & Annual Lunch

We're pleased to announce that **Pat Rabbitte TD**, Minister for Communications, Energy and Natural Resources, has agreed to deliver the EGA Annual Spring Lecture, which will take place on Thursday April 3rd 2014 at 7pm in the Clinton Auditorium. The theme for the evening will be 'Meeting Ireland's Energy Challenge', and should provide for a topical, interesting evening.

This year's **Annual Lunch** will take place in the John Field Room, National Concert Hall at 12.30 on Tuesday, May 27th 2014. The highlight of the event will be the presentation of the 2014 Distinguished Graduate Award, which will be presented during the lunch. The 2013 Distinguished Graduate was Dr. Liam Connellan (BE Mechanical & Electrical, 1957), and a review of the event is available [here](#).

If you would like to attend either of these events, please register with [ega@ucd.ie](mailto:ega@ucd.ie).



Prof. Gerry Byrne, Dr. Liam Connellan, EGA President PJ Rudden and Marie Connellan at last year's Annual Lunch.

# International: UK

## My Experience with Jaguar Land Rover

by Fionán O'Sullivan (BE Electronics, 2013)



**"I've always wanted to work in alternative energy and this was the first real opportunity I had to do so"**

I moved over to the UK last July to work with the Hybrids & Electrification department with Jaguar Land Rover. I originally applied for the JLR graduate scheme with half an eye on joining the Hybrids department. I've always wanted to work in alternative energy and this was the first real opportunity I had to do so. My first day was a daunting prospect, because despite getting the job with a car company, I don't actually have a driving licence nor know anything about engines.

My fears were unfounded as my home team really gave me the opportunity to settle in. My first few weeks involved sifting through all documents to do with the team, having one-on-one meetings with technical specialists and crawling around some of the prototype vehicles. I was given responsibility over both of the teams hybrid Range Rovers, which involved a surprising amount of hands-on-labour, heaving around spare tyres and changing batteries. Tragedy struck when 'Vehicle Safety' claimed one of my Rangies, filled it with crash-test-dummies and painted it blue. It was akin to giving me a puppy for a month, letting me grow to love it and taking it away again (or crashing it at high-speed into a wall).

My work in my home department is 90% testing, the other 10% being developing tools for the testing. My team design the software for all hybrid functionality for the cars, including regenerative braking system, torque control, management of the high-voltage battery and all the new warning lights and measures for driver safety (explosion imminent, run away).

If you're a UCD Engineer and would like to give your opinion on what you see as important developments in the world of engineering then please email [ega@ucd.ie](mailto:ega@ucd.ie).

The developed software will go onto all of the production Range Rover Hybrids, so an incredible amount of effort is being put into testing and validating the design. The cars are expected to work in all environments. This meant a few afternoons spent with my laptop sitting in the prototypes in a thick furry onesie at -30°, checking the software had taken the right measures for the conditions.

As part of the grad scheme, I'm required to do a 3 month placement in anything from HR to Sales, as well as a few placements with other teams within engineering. I'm currently halfway through a placement with electrical power supply, where they're looking at innovative new ways to power 'everything else', i.e. air conditioning and heated seats, within the car.

There are of course some frustrations with job. Least of which being that everyone in this country, almost without exception, assumes my name is Fiona. Sadly, in a company of 90% petrol heads, a lot of people don't take hybrid and electric cars very seriously.

Leam itself is a small town that punches above its weight. It's the home of thousands of Warwick university students, making it an incredibly fun and vibrant for a town smaller than Waterford. Surprisingly, it attracts a lot of decent bands and comedians, with the likes of Russell Howard (who lives here) and Jimmy Carr playing regularly. I also got the chance to see the Darkness live with some of my fellow graduates. For a change of scenery, Birmingham and London have been great for the occasional night out. Coventry is also close, but there be dragons.

The best thing about the grad scheme is the other grads. JLR are hiring 300+ graduates a year, most of which live in Leamington Spa. This makes for a fantastic after-work social scene. It's the closest thing to being a student whilst not being a student that I can imagine.

# Mock Interviews

**Last year the Engineering Graduates Association decided to assist Final Years by conducting Mock Graduate Interviews for those graduates who wished to avail of this service.**

These interviews were kindly organised by Karina O'Neill Marketing Manager for the College of Engineering and Architecture and took place in October 2013 and February 2014.

After a slow start, the service has proven to be very popular with Final Year engineers. This is not surprising as it's a highly useful service of which all Final Year students should avail to improve their prospects of early employment after graduation.

To have the benefit of scrutiny of your CV and career progress to date by a senior peer engineer prior to Employer Interview will be of great value.

Firstly, the student gets advice on CV preparation, to focus on strengths and emphasise positive personal achievements to date. Secondly being questioned on the quality of your career to date helps identify any gaps in learning and experience for future employment. It also gives the student greater confidence to face his or her employment interviews.

The EGA interviews were conducted on a Saturday morning, and thanks are due to the Board members who gave up their free time for this work, particularly Michael Loughnane, Ann Fingleton, Donal Wyse and Tony O'Brien. It is hoped that the UCD Final Year engineers will benefit from this experience as they prepare to

graduate in 2014 and seek employment.

Those who have switched to the new 5 year Masters programme (a prerequisite for Chartered Engineer status with Engineers Ireland post 2013) will have a further opportunity to train with mock interviews in 2014/15.

This aspect of career development is considered important to the EGA, and the UCD Careers Consultant Dr Aisling Harkin has recently been co-opted to the Board.

## Join the EGA [Click here](#)

Once you've graduated, you don't have to say goodbye to UCD Engineering for good - with UCD's EGA (Engineering Graduates Association) you can still benefit from many of UCD's facilities and maintain a connection with UCD Engineering, its staff and your classmates while you venture into further study or the working world.

To qualify as an Engineering alumnus and apply for EGA membership, you need to be a UCD Engineering graduate or have studied Engineering at University College Dublin for at least one year at either undergrad or postgrad level. Current and former members of staff are also eligible to apply.

Membership of the EGA entitles members to be informed of and attend Engineering-specific events (Annual Lecture, Distinguished Graduate Award, EGA Gold Medal Ceremony, Autumn Panel Discussion), receive the quarterly EGA newsletter in addition to receiving a copy of UCD's unique alumni magazine, UCD Connections. The magazine is published annually and is a great way to keep in touch with UCD, find out news and stay informed.

As well as this, EGA members can avail of discounted rates on adult education courses and discounted access to UCD's indoor and outdoor courts - tennis, squash, handball amongst other activities. You are also entitled to reduced membership of the new 50 metre pool – we can arrange a free day pass if you would like to try it out before joining.

Membership rates are as follows: €25 – member; €20 – overseas member, €250 / €500 - corporate members.

We look forward to welcoming you at an EGA event very soon!

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