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We want our story to stand out from the crowd by telling our stories with flair and colour. For a university that has challenged convention and at times broken the mould, we want to do the same with how UL tells its story.

We set the editorial bar guite high with the theme of **#ThinkBigAtUL** for 2017 but I think the scale and breadth of these articles has cleared that bar. Central to all of these stories are some outstanding UL people such as Razan Ibraheem, Robert Mortell, Mark Quinn and Brenda Romero.

There is a clear outward looking, global theme – from New York to Ghana to the Himalayas to the Golan Heights and Syria.

This is a digital-first publication with www.ul.ie/ullinks being the home of some amazing new video, stories and images. Each will be shared and promoted across multiple channels nationally and internationally, adding up to another major declaration of a university that is telling its story on today's channels and doing so on a scale that matches its ambition.

So snap us, like us, share us and friend us.



Ю @universityoflimerick

I would like to thank my colleagues in the UL Marketing and Communications Division – they are working very hard to transform how UL tells its story so that it reaches a wider audience and this is reflected throughout these pages.

I would also like to thank our many contributors across the university, to the two UL Final Year Project students, Seán and Áine, who made a great addition to the team and to the many UL graduates who became our stories. A big thanks too to our friends in the UL Alumni Association and a special word of thanks to the latest addition to the UL community, Munster Rugby. I think the story of UL and Munster Rugby collaborations is only beginning, so watch this space.

I hope you enjoy the 2017 UL Links and I hope you will share these stories on your chosen social media. We want UL to stand out and so we invite you to **#ThinkBigAtUL**

Mark Mulqueen Director of Marketing & Communications. UL









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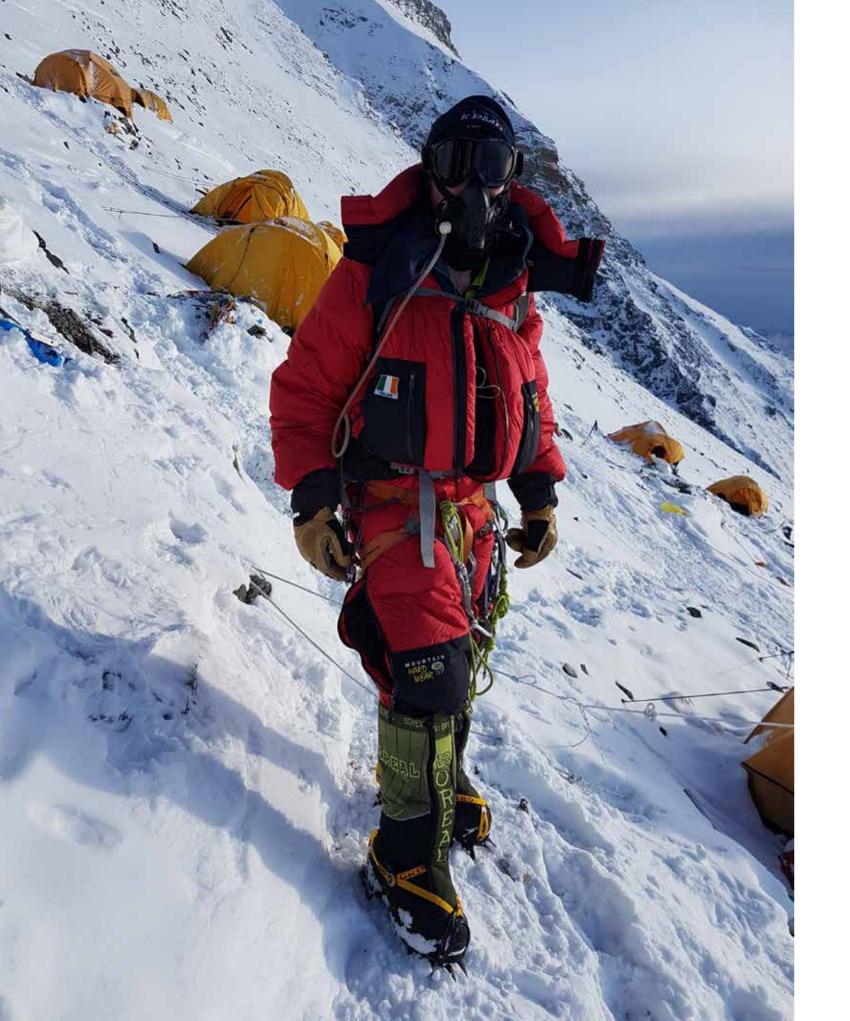
UL graduate Robert Mortell, at 26, overtook student Mark Quinn as the youngest Irish person to scale Mount Everest. Seán Lynch caught up

When University of Limerick alumnus Robert Mortell found himself standing on top of the world's highest peak last year, the overriding emotion was one of elation. There had been some worrying moments however. Just before he had reached the mountaintop, having experienced technical difficulties with his oxygen, Robert had run out of energy and come to a halt.

"It was a worrying point because if you don't have the energy to go up, you may not have the energy to go down," he remembers.

At 26, Robert had just become the youngest Irish person to reach the summit of Mount Everest. A massive achievement, sure, but a little-known fact behind that story is that he captured the title from current UL student Mark Quinn, who was 27 years of age when he completed the mammoth feat in 2011.

While the pair have rarely met face to face, they have more in common than their UL and Everest connections. Both Limerick natives, neither Robert nor Mark come from a family of mountaineers, nor did they expect they would ever be in a position to seek to realise the dream of climbing the world's



It was a worrying point because if you don't have the energy to go up, you may not have the energy to go down.

For Mark, the catalyst for aspiring to reach the top of the world came when he was training for his first marathon at 24.

He thought to himself, "A marathon would be no problem, I could do anything. What's the maddest thing I could try to do?"

The answer he came up with was Everest.

Mark scaled his first mountain, Carrauntoohil, on May 10, 2009 and stood on the highest point in the world on May 20, 2011, just 741 days later.

For Rob, the journey to the top began in 2010, when he pitched the idea of climbing the Matterhorn in Switzerland to his brother. Having overcome their initial fears and lack of experience, the brothers succeeded in 2013, after which Robert continued his preparations to attempt the biggest adventure of his life.

The planning, research and fundraising took many years to line up but his employer, KPMG, was very supportive in part-sponsoring his expedition, alongside Volvo Ireland. The remainder was financed by Robert personally. On the morning of May 23, 2016, the law and accounting graduate made Irish climbing history.

Mark's approach to funding could hardly have been more different.

Without any corporate sponsorship, he financed his climb through local fundraisers and crowd-funding. He used his journey to foster an interest in mountaineering among young people in his community and students of Crescent Comprehensive College, Limerick even held a fundraiser for Mark by climbing Galtymore.

Setting off, Mark did not expect to reach the summit. His only priority at the time was to make it home alive.

"I imagined I would have a funny story about how I got to one of the camps and had to come back down but everything kept going right," he says.





Robert Mortell at base camp.



I had it drilled into myself not to get carried away and celebrate too much but, as the summit came closer, I finally could.

The morning before he reached the summit was one of the highlights of his climb. It was then that he finally knew nothing was going to stop him.

"I had it drilled into myself not to get carried away and celebrate too much but, as the summit came closer, I finally could."

While reaching the top is a climber's aspiration, they are all aware that the descent can be treacherous and, for Mark, this proved to be the case. As one of the last climbers to leave the summit, he felt himself continuously slipping and eventually had to stop. As the final group passed Mark, he realised he was the highest person in the world.

He knew he was in trouble but found himself, as he puts it, "typically sitting on my arse".

He eventually found the energy to finish the rest of the descent, mostly alone. Mark had no major lasting effects from the climb, aside from a mild tingling in his fingers for a few months but it went away "like everything else".

Rob's fingers, however, did not fare as well.

"I suffered from frostbite on my descent, so the tips of my fingers froze and turned black. If the frostbite had reached the first joint in any finger they would have had to be amputated, but I was fortunate to address the issue before suffering any permanent damage," he says.

Mark advises anyone with a dream to make a plan and go for it. "If you want to run a marathon, get out and run five kilometres, then push yourself up to seven kilometres. Once the plan fails, just adjust it, make a new one and don't freak out," he says.

Neither man has plans to climb Mount Everest again in the future, but say they will continue to attempt other smaller peaks around the world.

Robert Mortell speaks at various corporate events and works as an accountant and tax consultant with KPMG, while Mark Quinn is finishing his final year in UL, studying Journalism and New Media.



I suffered from frostbite on my descent, so the tips of my fingers froze and turned black.

Robert Mortell (on left) and Mark Quinn.

Polished GEMS

Professor Deirdre McGrath with colleagues Professor Colum Dunne (centre) and Dr Leonard O'Sullivan.

As the UL Graduate Entry Medical School (GEMS) marks a decade in operation, Professor Deirdre McGrath spoke to **Áine Freeman** on its progress to date and on the future of the facility.

Now approaching its 10-year anniversary, the Graduate Entry Medical School (GEMS) at University of Limerick began in rather humble surroundings.

Originally situated in the C block of the main university building, it has expanded into its own state-of-the-art facility. Student numbers have grown from 32 in 2007 to more than 500 in 2017. International interest is at an all-time high, with nearly one third of the student population comprising non-EU students, predominantly from Canada and North America.

Students who have completed an undergraduate degree in any discipline can apply for the graduate entry Bachelor of Medicine, Bachelor of Surgery course, as GEMS director Professor Deirdre McGrath explains.

"The graduate entry model is the model the Canadian and North America schools work on. It encourages mature and motivated individuals to study medicine so that, when they do interact with patients in the real-life clinical setting, they are experienced, mature and empathic."

For some students, it is a complete divergence from their original career path.

"Our programme accepts students from any background, so we have people who have come from arts and humanties, business and law, learning together with engineers, nurses, physiotherapists and basic scientists. We even had a fashion and design student in the programme," says Professor McGrath.

The difference does not usually put students at a disadvantage. On the contrary, their diverse backgrounds tend to complement each other. "Students coming from different academic backgrounds bring a range of strengths to the table. At the start, science students do hit the ground running, as there is a strong emphasis on basic science in the early years of the programme. What we see, however, is that non-science students, particularly those from the arts and humanities, often have a more holistic undertanding of a patient's problems. So, by the end of the second year, the non-science students perform equally as well," she continues.

The cornerstone of the programme is problem-based learning. "The process is facilitated by a medicallygualified tutor who is there to guide the learning and to ensure that students are grasping difficult concepts. Students are introduced to a patient problem. They bring their prior knowledge and experiences to the table; they identify any gaps in their knowledge with respect to that problem and then fill those gaps through a process of self-directed learning. The learning is consolidated by a small number of lectures and seminars," Professor McGrath explains.

Clinical and communication skills training are other important aspects of the programme. "Students learn how to examine, communicate and perform procedures on each other and on mannequins, trained actors, members of the public and, ultimately, on patients." In the first two years, students work through an early patient contact programme, which focuses on people in the community who have a chronic illness and on women going through pregnancy. "It's very much about learning about illness from the patient's perspective. They go out into the community and meet with the patient to see the difficulties they might have in everyday life. It is something we don't always get to see as a doctor."

Third year students also spend 18 weeks working within a general practice, the only placement opportunity of its kind in the country. "We are very fortunate in that we have overwhelming support from our general practice colleagues. There are 120 GPs in the community that support the programme," Professor McGrath outlines.

"Students can see what happens patients from their initial presentation to a GP and on through their investigative and management processes. It's seeing the patient as a whole, as opposed to just an organ or a disease, which often happens in hospital medicine, due to the constraints that hospital doctors are working under".

Technology has hugely impacted the teaching at GEMS, as students learn much of their skills from procedural equipment, including high fidelity manneguins that simulate normal and abnormal patient scenarios. They are the only medical students in the country who do not use dissection of real cadavers when learning anatomy. Technological resources now allow students to virtually dissect on their computer or tablet. An Anatomage table recently introduced to the school features virtual bodies, letting students learn anatomy and dissect life-size digital cadavers using a touchscreen. This is the most technologicallyadvanced visualisation system worldwide for teaching anatomy.

Professor McGraths notes, "Students are also making the switch from books to mobile devices in their daily education. In an age of mobile devices, this is huge. Students want to be able to sit on the bus and learn and not be restricted to libraries."



GEMS has not only grown in size on the UL campus but its clinical teaching network has also expanded, with more than 300 adjunct teaching staff across the UL Hospitals' Group and five affiliated teaching hospital sites. It has a joint academy with the Royal College of Surgeons at St Luke's Hospital, Kilkenny and with NUI, Galway at Portiuncula Hospital in Ballinasloe.

The school also has buildings for academic use when students are on clinical placement in Tullamore, the Midland Regional Hospital in Portlaoise and South Tipperary Hospital in Clonmel.

New courses are constantly being developed. "We are working with partners within the Faculty of Education & Health Sciences in developing new programmes. One such programme is the innovative Community Wellness and Empowerment in Leadership & Life Skills Programme (CWELL), which aims to empower people in sociallydeprived areas to become leaders.

"We are also currently in the process of developing new masters programmes, including Health Professions Education, which will be launched in September 2018."

As more graduates enter the workforce and make their impact, the opportunities for growth within GEMS are endless. "Those of us within the school can see the incredible potential that GEMS has, if allowed to grow. We are nowhere near yet achieving our potential," Professor McGrath concludes.

Looking forward

As Dr Desmond **Fitzgerald settles** into UL, Anna Nolan discovers the Dublin man is already very familiar with the region

During his early years, the university's new president spent his summer holidays in Kilkee, the County Clare seaside resort affectionately known as "Limerick by the sea". Desmond Fitzgerald's mother, Maureen O'Donovan, was born in Limerick and though they all lived in Dublin with his Belfast-born father, Thomas Joseph Fitzgerald, there were also family visits to her mother in Limerick City.

Schooled in Dublin, Dr Fitzgerald's first degrees in medicine were taken at University College Dublin. While time was spent studying, training and working in the US, much of his career was based in Dublin. In 2016, he was happy and settled in his role as vice-president of health affairs at UCD. Then, the possibility of becoming president of the University of Limerick arose last autumn. Happy as he was in UCD, when he looked at UL, his interest was piqued.

"I had the same reaction as I had with UCD. I felt that I could contribute to bringing UL to the next phase," he explains. "UL is in a position to progress guickly over the next ten years, regionally, nationally and globally.

"From a faculty perspective, UL is notably international but we could attract more international students. This would enrich the experience of the students here in UL and would stimulate us to broaden the curriculum."

Dr Fitzgerald's diverse career spans academic medical research, hospital medicine and teaching, as well as leadership and managerial roles. He was vice-president for research at UCD (2004-2014) before his appointment as vice-president of health affairs.

"I am very fond of UCD, it is my alma mater. Like UL, it is a national success story. After working in academic medicine abroad and in RCSI, I was excited by the idea of developing an entire university, especially in building its research."

As UCD's head of research, he substantially grew the number of PhD students and hugely increased its funding and reputation for research. He also has an impressive reputation for establishing research centres, based on the principle of bringing disciplines together to tackle major challenges. He sees the same opportunities in UL.

"UL has unique strengths, including pharmaceutical manufacturing, material science, automation, aviation and sports, to name a few," he notes. "I would like to see these develop further and work on new areas, such as data analytics and health.

I was excited by the idea of developing an entire university, especially in building its research.

"Data science is making important contributions to areas as diverse as health, robotics, financial services and manufacturing, as well as to social sciences and the arts. For the city and region, there are many ways that data science can contribute - the digital city, for example or the implementation of social policy.

"I am a believer in the value of multidisciplinarity – UL has strengths in fundamental disciplines, in mathematics, physics and chemistry. It has strong computational skills. It has unique expertise in the performance arts, in history, journalism and political science," he continues.

With a successful research background (450 research papers) in medicine, primarily cardiology, it is natural that he stresses the important of UL's Graduate Entry Medical School (GEMS).

"GEMS, and indeed the entire health sciences at UL, is a great success story, not least in providing much-needed healthcare professionals to the region. I'd like to see more medical research that would have a major impact on UL's reputation."

He sees caring for patients as the primary responsibility of any healthcare professional. However, healthcare is far from perfect and there is another responsibility; he wants to know why people get ill in the first place.

"I would like to see UL develop a wider programme, one that takes on the challenges of health and well-being, starting here with our students and staff, by developing a healthy campus. It is an indictment of the third level that so many students are addicted to cigarettes for life when they graduate."

The university has grown extraordinarily from its initial intake of 120 to almost 14,000 on campus in 2016. So, where to next for UL?

"We should create additional programmes that will address the needs of students from this region, so that we are not bypassed in favour of Dublin.

We also need to be seen as a national institution, to attract students from all over the country. In that regard, we have several unique programmes, like aviation and sports. But there is a growing need for UL to go beyond undergraduate.

"We will grow the number of postgraduate students, which currently stands at 10% of the student body. We will double that in the next 10 years. That would be good for development of the region and we will attract more students from overseas with distinct offerings of international relevance. This would also be good for the region, as a sizeable proportion of those students will stay here after graduation."





Although the outcomes of Brexit are at present unpredictable, Dr Fitzgerald sees the opportunities there.

"We are already exploring partnerships with several universities in the UK and working with them to better understand students' needs and to make sure that, whatever is designed, it will function around Brexit," he says.

"International education is responding to the seismic shifts in politics and it's not just Brexit. There are also one to two million overseas students going to the US every year and they are worried by the changes they see. Some of these students may now prefer to come to Ireland."

In these contexts, international university rankings matter, he contends.

"Students will not go to universities that are not ranked. One of the tasks facing us is to improve UL's ranking. That will take time but, then, UL is here to stay."

Off-duty

Favourite authors:

Maeve Brennan, plus American writers Joan Didion, Lucia Berlin and Don DeLillo.

Favourite magazines: The Economist and The New Yorker.

Favourite sports:

Swims, sails a Conway-Waverly owned with friends and follows rugby. "I'll have to switch to supporting Munster," he notes.

Favourite holiday spot: Venice.



Brenda Romero at her Galway office.

BAFTA-winning game designer Brenda Romero will be presented with an industry legend award with her husband, John, later this summer. She spoke to **Seán Lynch** about getting ahead of the game.

From making games out of spare parts as a child, to teen years spent working in development, Brenda Romero has grown into a multi award-winning game designer.

The industry veteran, now a lecturer at University of Limerick, cannot remember a time when she wasn't absorbed in gaming. Growing up in New York, her early love of game design stemmed from arcade stalwarts like *Pac-Man*.

"I would get my allowance, which at the time was five dollars a week, and I would immediately put it into the nearest arcade every week, without fail," she says.

At 15 years of age, Brenda turned her passion into her job, working in start-up company Sir-Tech Software. She stayed with them for 18 years before moving to Atari, where she worked on the *Dungeons & Dragons* series.

She began teaching game development and design in 2006. The transition towards academia was a smooth

one for Brenda, as she already had an interest in research and teaching.

"It felt natural to go into teaching. Part of being a game designer is learning from someone better than you are, so it felt like, with teaching, I was doing the same things as a senior game designer but in a more formal structure," she says.

The New Yorker lectured in various universities across the US before moving to Ireland in 2014 as a Fullbright Scholar, researching the Irish game industry and education system.

Along with her husband John, who is also a game designer, she moved to Galway in 2015. She is now course director of the new MSc in Game Design and Development at UL.

"I compare how I teach to cooking. You could come into a classroom and I could just talk about recipes to you but unless you make and taste them, they're not going to have the same effect," she says.

There is no choosing between teaching and designing for Brenda. "My life is all about games. My husband is also a games designer so, really, games are our lives. We're playing, making and talking about games all the time."

The main advice she gives to aspiring game developers is to learn and practice code as early as possible.

In 2009, Brenda developed the game *Siochán Leat*, which she used to teach her daughter about their ancestry, dating back to the Cromwellian invasion of Ireland.

According to the UL lecturer, teachers should follow suit and use games to teach difficult subjects. "Having students play and make games about difficult topics helps them learn about it," she believes.

Ireland's reputation in the game development industry is growing, according to Brenda.

"I think the games we are making are absolutely getting out there and the strength of the Irish community is becoming known," she outlines.



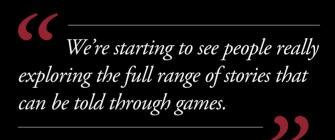


"People no longer need to work in major corporations to successfully create games, a fact that is helping Ireland's game development community grow.

"Because you don't need to have a massive team to make games anymore, there are more games getting out there that we wouldn't have seen years ago. Now, we're starting to see people really exploring the full range of stories that can be told through games," she adds.

The broader range of themes being explored recently in games has excited Brenda more than ever. This diversification is caused, in part, by the widening demographic of gamers.

"People tend to think it is a 17-year-old kid in his parents" garage but, instead, the person who spends the most





The person who spends the most money on games is a 43-year-old woman.

money on games is a 43-year-old woman. We tend to write off mobile and casual games as not real games," she states.

This shift has helped inspire more women to follow in Brenda's footsteps and get involved in game development.

"There are certainly more women now than there ever were in gaming. The percentage of women involved is eking up every year, which is good," she outlines, adding that there are more diverse characters featured in games now.

Brenda believes it is impossible to predict how the industry will evolve.

"One of the funniest questions I get asked is 'where do you see the gaming industry in five years?' It always feels like an opportunity to make a fool of myself, because the industry is just constantly changing," she says.

Brenda cites the growth of YouTube gaming as one of the biggest challenges facing the industry today. She believes the full play-through of games being available to watch for free is problematic.

"It renders games moot when millions of people are watching them for free. It has to have an impact on sales if you can just watch a game. It's changing the way a game is made."

In 2013, Brenda was listed as one of the top 10 game developers by Gamasutra.com and Develop magazine named her among the 25 people who changed games. Often described as "an industry legend", Brenda doesn't feel the label accurately describes her. "I am just trying to make games and I don't see myself as a legend."



The number of awards she is accruing would suggest otherwise. In April, she was honoured by the British Academy of Film and Television Arts (BAFTA) at their flagship games awards.

BAFTA's Special Award acknowledged Brenda's illustrious career in game design, her advocacy for the art and creative process behind game-making and her commitment to encouraging the next generation of talent in the industry.

Brenda says she is grateful that the artistic potential and power of games is being recognised. "I've devoted my life to games - making them, teaching them, playing them - and to receive any honour from the community is incredible. But a BAFTA? It's well beyond anything else."

Later this summer, she and John will be presented with the Development Legends accolade at the Develop Industry Excellence Awards 2017. The award recognises their decades of influence within the industry and their work on ground-breaking franchises such as *Doom*, *Wolfenstein, Wizardry, Jagged Alliance* and the BAFTAwinning *Ghost Recon* and *Dungeons & Dragons* series.

The Romeros have also been announced as keynote speakers at Develop:Brighton, one of Europe's leading game developers' conferences, which runs alongside the awards in July. Her keynote, *Stay: How Not to Burn Out and Thrive in the Game Industry*, looks at the positive reasons so many people stay in the games industry despite pressures, and explores lessons learned from industry veterans.

"To say that I feel unworthy of many of the awards I've received is an understatement," says Brenda. "The industry is always changing, so it's really hard to feel like somehow you're sitting on a throne because there's always something new to learn."

Brenda's new Masters of Science in Game Design and Development begins at University of Limerick this autumn.

Tough conversations

Louise O'Neill's *Asking For It* has been selected for UL's One Campus, One Book campaign. She speaks to **Seán Lynch** about her experiences as a writer and activist.

Starting tough conversations has become a trademark of multi award-winning author Louise O'Neill.

From the small town of Clonakilty in West Cork, she has become one of Ireland's leading voices on sexual consent, violence and rape.

It has been quite a journey for Louise.

She dreamed of being an author from a young age but she struggled with her writing while studying for her BA in English at Trinity College Dublin. The "art of academic writing practiced at university" is very different to the expressive style with which she feels more comfortable, she notes.

"Creatively, I felt quite stifled," she says. This, she believes, prevented her from pursuing her dream sooner.

After completing a postgraduate diploma in fashion buying, Louise moved to New York in 2010 to intern as an assistant stylist for the senior style director of *Elle Magazine*, Kate Lanphear. Experiencing anorexia and bulimia for much of her life, she suffered a relapse while in New York.

"I started seeing a very good therapist and a big part of my growth was letting go of worrying what other people thought of me and letting go of a tendency towards perfectionism."

This change in perspective helped Louise to be less intimidated by the idea of writing a novel.

On her return to Ireland a year later, she began to draft *Only Ever Yours*. Feminist ideals heavily influenced the themes in her debut novel, which is set in a dystopian future where women are created for the pleasure of men.

"When I was young, it was the Spice Girls who were my introduction to Ireland is a country which continually tried to control women's bodies, vilified women's sexuality and it really stuck with me how relevant it is in Ireland. That was the catalyst for Asking For It.

feminism but it was my parents who were very encouraging in teaching me that I could do whatever anyone else could."

Louise began reading feminist literature as a young adult. "I had internalised quite a lot of misogyny and ideas of masculinity and femininity. I didn't feel like I had the freedom to express my sexuality in the same way that was so normalised for my male peers."

She believes that mandatory sex education classes should be rolledout in all schools throughout the country. "In the current system, there's never any mention of gay, or transgender sex and it doesn't discuss things like desire, pleasure, mutual respect and boundaries. Consent is never even mentioned," she states.

According to Louise, ideas around gender and sexuality need to be discussed more outside of a university environment.

"The real problem with judging how the younger generation learn and interact online is that it's elitist. If information is not coming through an academic language, then it's seen as worthless," she says.

Louise wrote her second novel *Asking For It* with this in mind. She wanted to discuss the issue of sexual consent in an accessible way for young girls. In the first draft of *Only Ever Yours*, she had wanted to explore the idea of legitimate rape. Her editor believed that the issue was too important to end up as a footnote in the novel, so it was removed.

Following some high-profile cases in the United States and what she saw in the media's treatment of women, Louise couldn't stop thinking about the issues of rape and consent.

"Ireland is a country which continually tried to control women's bodies, vilified women's sexuality and it really stuck with me how relevant it is in Ireland. That was the catalyst for *Asking For It*," she says.

The book has sparked many conversations around issues of sexual consent and rape culture. Interest in the novel has elevated Louise's profile and while she sees her role in discussing these issues as positive, she says it has been challenging to manage alongside her writing.

"I started to feel quite guilty because it felt like if I didn't keep talking about these issues and raising my voice, they were going to fall out of public view. But I am a writer and that is something that is difficult to balance.

"I did withdraw in the last year but it really has been about figuring out





how to navigate that uneasy existence between being a writer and also wanting to use my voice for something greater," she explains.

Louise sees social media as a way to balance her writing and activism. Despite some negative experiences online, it has opened her eyes to other perspectives.

"Twitter introduced me to ideas around race, gender, intersectionality and sexuality that, growing up in a very monocultural town in Ireland, I wouldn't have had access to," she says.

Encouraging aspiring authors to let their writing flow and to not expect too much of themselves, she adds, "if I can do this, anyone can".

"If you have a first draft, no matter how rough and messy, you can work with it, chisel it and shape it into something that is worth publishing," she says.

"Believe in yourself, believe in your voice. Don't try to copy anyone else, there's only one of you."

Brave is a word often used to describe Louise for igniting difficult conversations with her writing around rape, consent and victimblaming. The word doesn't sit easily with the author.

"If someone is involved in a hit-andrun no one would say they are brave for telling their story but because of that element of shame that people attach to survivors of sexual violence, that's why we think people are brave for talking about it," she says.

In its selection as UL's One Campus, One Book campaign, Louise believes talking about these issues means society is beginning to accept that women "should be able to live in this world without paying the price of sexual violence".

Summer in the City Joseph O'Connor

Frank McCourt Chair in Creative Writing

Two of Frank McCourt's great loves, teaching and writing, are combined to stunning effect in glittering Manhattan.

It's a sultry July evening and I am seated on the podium in a large, beautiful room at NYU, reading from my novel Ghost Light. To one side of me is the great Irish poet Mary O'Malley; on the other, the peerless musician Martin Hayes is playing that most heart-breaking of slow airs, The Coolin, which lofts and glides like a Connemara tern. The music aches with silences and they fall as leaves. His eyes are closed. We're gone.

Fifth Avenue is outside. Manhattan is glittering. In here, we're wrapped in music and words.

Four rows away from me, in the capacity audience, among members of the McCourt family and Ireland's wonderful Consul, Barbara Jones, is my all-time literary hero, the novelist Peter Carey, twice winner of the Booker Prize. And there are sixty creative writing students, most from

America, some from Ireland. I'm wondering where it all went right.

This is the first night of the inaugural UL Frank McCourt Creative Writing Summer School, New York, an idea that seemed to appear on my pillow one morning around the time I started working at UL three years ago. I talked with the marvellously supportive Ellen McCourt, Frank's wife, about it and with that strong friend of UL Creative Writing, Loretta Brennan Glucksman. How better for us to celebrate Frank and his remarkable achievement than to combine his great loves of writing and teaching and to do it in the lower Manhattan his writings evoke with such vivacity, grit and grace? This great Limerick New Yorker, for whom my chair at UL is named, made Angela's Ashes his tale of two cities. In 2016, the 20th anniversary of its publication, we founded the summer school in his honour.

Shannon Airport, our excellent supporters, made the venture doable. Given their own unique and lasting role in the Limerick/

Manhattan story, and in the wider nexus of interconnections between America and Ireland, we could not have dreamed of more apt and able partners. Professor Eoin Devereux, my friend and colleague, came on board from the start. His extraordinary organisational skills, his wisdom and guiet persistence were remarkable. He never got the memo that it isn't possible to organise a complex series of workshops, lectures and seminars in Manhattan from an office three thousand miles away in Limerick. With princely calm and a wry, rock 'n' roll humour, he put whatever show we had to offer on the road.

But still, we had anxieties. Would anyone come? Two weeks before hand, at the Sheen Centre on Bleeker Street, New York, with the help of our friends at the Irish Arts Centre, we held An Evening For Frank McCourt. Performers included Jean Butler, Larry Kirwan, Pierce Turner, Lisa Dwan, Maeve Higgins, Charlotte Moore, Ciaran Fitzgerald and Gabriel Byrne. Everyone was supportive and encouraging about the summer school, none less than Alphie

McCourt, Frank's gentle, charming brother. It proved to be the one and only occasion when I would meet that beautiful man, who passed away only days later, as the school commenced. To have had his wife Lynn and brother Malachy with us as we got going was a special honour indeed. Their courage and grace blessed the gathering.

We were fortunate in our choice of opening speaker. Thinking of it now, I see it unfurl in the present tense: Professor Sarah Moore, the greatest lecturer I have seen, is working a room full of writers, both experienced and new, combining knowledge, passion and remarkable insight with the delivery skills of a stand-up comic. At the close of her session – I am not making this up – the students burst into rapturous applause.

Then the recollections come in kaleidoscopic tumble: The heat of Manhattan in July. Iced coffees. Sore feet. The alleluia of police sirens. Hot dog vendors. The throb of jazz. The fountain in Washington Square Park, to which some of the students would drift at lunchtime, to stand in the living parasol of its misted spray. Donald Trump on the radio talking about what he'll do as US President. (Like, that's ever going to happen.) Ellen McCourt laughing gently at the preposterous heat. Eoin Devereux spellbinding the room with his talk on Oscar Wilde and Morrissey of The Smiths. Gabriel Byrne, backstage with us at the Evening For Frank, dark-eved with exhaustion from his four-and-a-half hour appearance that afternoon in a matinee of Long Day's Journey Into Night but not wanting to cancel us, because of his

affection and respect for Frank. To walk past the open door of a classroom and see the students, rapt with attention as Donal Rvan, Marv O'Malley and Giles Foden teach them small and big things: how to think about <u>a sentence, how to</u> make the words float, how to structure a novel or poem, find a voice, tell your story, come into the scene late, leave it early, and a hush, and teach can be so intimately a beautiful quietness, suddenly filling Glucksman Ireland House, as sixty people bend their heads and

start to write.

So many times we heard laughter and, once or twice, we saw tears. At open mic sessions in the house on Saturday night and McSorley's Bar on a still Sunday morning, students stepped forward, some nervous, to read us their story, in many cases for the first time. We heard honest, memoir, even songs! Our youngest scholar was 16, our most lifeexperienced was senior by a good many years. We had a New York City firefighter, published writers, fulltime students, office workers, some retired folk, moms, dads. I think Frank would have loved the breadth of it, the sense that creativity is for everyone, the idea that to write, read



related that they become the tributaries that sustain each other.

All in all, then, an unforgettable Manhattan adventure in learning, for those of us who taught and, I hope, for those who studied. Many of them continue to meet up regularly in New York to share ideas and to write, which is such an amazing pleasure to think about. Limerick went to New York and look what happened. I can't wait to do it again. We'll be there funny, sad, sweet work, prose, verse, this coming June. I'll be thinking of Alphie as we set out our stall; his noble, funny, wise presence. And I'll be thinking of Frank, as I often do. Pulitzer prize-winner, international bestseller, doctorate holder, honouree. There was little he couldn't do with words. He could skim them all the way across the Atlantic. But his favourite title of all was the noblest one: Teacher Man.

Social conscience

From Syria to Storyful, UL graduate Razan Ibraheem talks to **Tracey Walsh** about sidelining the classroom for journalism

The conflict in her native Syria was just five months old when Razan Ibraheem first walked onto campus at University of Limerick. It was 2011 and Razan was harbouring aspirations of a life in teaching. There to complete a Master's Degree in Teaching English to Speakers of Other Languages (TESOL), Razan had a job awaiting her in Syria, where she eventually hoped to open a business.

"I worked as a teacher for 10 years. I did my diploma in education and my dream was to go back to Syria and, in the future, to open my own business in language teaching."

Events in her home country would change her trajectory. "When it started, we never thought it would get to this level of violence and brutality. Before the war, Syria was ranked one of the safest countries in the world, especially in the Middle East. That is why the violence is so shocking for us, because it is not part of our culture. We went from a secure society to a really brutal war." After completing her Master's, she worked in Limerick before opportunities led her to Dublin and a stint in Facebook. She is now a social media journalist with Storyful, a News Corporation-owned company, which provides verified social content and information.

"I never thought to be a journalist professionally but I was always motivated politically. I used to write my own articles but I think the war has made every Syrian into a journalist in some way. Social media plays a huge part in that. I thought this is a way that I can do something, so I combined my English, my writing, my social media experience and my interest in politics and I became a journalist."

Part of her work involves authenticating online video content. She finds it difficult to remain objective watching footage of her country's sorrow playing out on a world stage.

"You cannot remove yourself from it. You are very connected, even if it was not from my own country,

the most difficult thing to see is children dying in front of the world. Your people are dying and you cannot do anything about it.

As a Syrian woman, Razan feels a huge responsibility to make sure the plight of her people is not lost in the global political landscape.

"I think it is a moral duty for every Syrian to speak up for the children and women. Social media is a great platform to highlight the situation. My focus is on humanitarian efforts but there is a duty to talk to all sides and try to do something; to ask the question, what is Syria? In the media, it is represented by bloodshed and terror. We must show the Syrian culture. We must highlight the real people and landscape and what it means to be Syrian."

A number of families have been resettled in Ireland since the beginning of the year. Those Razan has spoken to all have one issue in common.

"What they want more of is English classes because language is so important. They want to go into the workforce and contribute to society.

"The number one element, in terms of importance, for integration is language and number two is work. It opens doors; they meet new people, they have purpose. If people cannot work, you are preventing them from moving forward. I think once a person is in the country and has applied for refugee status, then they should be allowed to work."

Named Irish Tatler's International Woman of the Year 2016, making sure women know their rights in their adopted countries is equally important to Razan.

"It is hugely important to empower women and young girls in all walks of life but especially in Syrian women and indeed all women of refugee status. They are strong, intelligent women and they need to realise that their voice is important and that they must stand up and be heard."

It will be seven years this summer since Razan saw her home in Latakia. Situated on the Mediterranean, it is always on her mind.



Before the war, Syria was ranked one of the safest countries in the world, especially in the Middle East.

"In the north and east of the city, there is ongoing fighting. I always think of my family, friends and relatives there. I try to keep in touch with them but it is really tough. I talk to my friends but they are always waiting for a solution. They have lost hope and lost faith in the international community to find a peaceful solution in Syria."

Razan hopes to return there one day.

"If there are six or seven million people outside of the country, who is going to rebuild it? I will be one of the first people to go back when I can; I think most people will try to go back."

For now, Razan is happy in Ireland. Her rising profile here is adding its own pressure however. "I feel more responsibility. I feel that I must keep speaking up and keep people informed and talking about what is going on. It means I have a very busy life but I feel it is the least I can do."

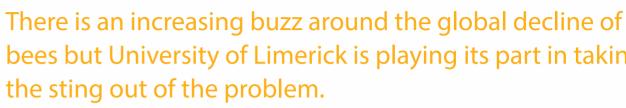
She is getting better at taking a little time for herself.

"I realised I needed to make space for myself, so I started getting out more a few months ago. I like cycling and walking. I took up meditation and a little yoga, just to disconnect for a while. I also like theatre and art and I try to force myself to get out and not to always work."

While Dublin is her home for the foreseeable future, Razan holds fond memories of her time in the Mid-West.

"I think UL was my best experience in my life; it was a turning point in my personality, my career and my future. I love Limerick. The teachers were very supportive there and I made amazing friends. It was such a positive part of my life."

Generation of the second secon



The global collapse of bee populations is increasingly hitting the headlines but, as yet, no one has come up with a wholesale solution to stall the decline.

But, to cut to the buzz, while many land and marine species are also facing a similar fate, the loss of bees would have the most severe consequences for the human population's food chain, posing an enormous threat to our very survival.

It is estimated that almost three-guarters of our wild plants rely on insect pollinators, of which bees are the most important, as well as being vital pollinators of food crops.

One estimate puts the value of bees to the Irish economy at €53 million per annum.

A 2015 report from a United Nations group found that populations for 37% of bee species globally are in decline, with 9% facing extinction.

The Irish situation

There are currently 97 species of bee in Ireland: one honey bee, which is mainly a managed species, 20 species of bumblebee and 76 of solitary bees. More than half of Ireland's bee species have undergone substantial declines in their numbers since 1980, with 42 suffering decreases by more than 50%.

The Irish Bee Red List, published in 2006, notes 30% of Irish species are threatened with extinction: six are critically endangered, 10 are endangered and 14 species are considered vulnerable. Of the 20 bumblebee species, four are endangered and two are vulnerable. Two species have become extinct in Ireland within the last 80 years.

For example, the Great Yellow Bumblebee has suffered a serious decline in Ireland since the 1970s. It is now



bees but University of Limerick is playing its part in taking

confined to small areas of high floral diversity, called machair, in the west of Ireland.

Locally, as an act of solidarity with the bees, the UL Environmental Society has initiated an Apiary Project, co-ordinated by Dr Adam de Eyto, which trains volunteers in beekeeping. It now has three thriving hives on campus. Furthermore, the meadow adjacent to the apiary is being managed as a "wild flower meadow" and the cuttings are timed to maximise floral biodiversity.

What the findings showed is that of 29 countries surveyed globally, Ireland had the highest honeybee mortality rate, at 29.5%, over the winter of 2015-2016.

Varroa

Pests and disease are the main threat to honeybees, particularly the parasitic mite varroa, which has been present in Ireland since the 1990s. It is implicated in transmitting a range of viruses, which have major health implications for colonies.

The National Apiculture Programme has been based at the University of Limerick for nine years, where the main researchers are Dr Mary Coffey and Professor John Breen. Run by the Department of Agriculture, Food and Marine, with funding from the European Union, the latest programme, which runs until 2019, involves collaboration





with Teagasc Oakpark in Carlow, NUI Maynooth, NUI Galway, the Federation of Irish Beekeepers Associations and the Native Irish Honey Bee Society.

Tackling the varroa problem is one of the programme's primary aims, explains Professor John Breen.

"Our research is mainly on colony health. As part of that, we run an annual COLOSS survey on mortality rates and about 450 beekeepers were surveyed last year in Ireland. What the findings showed is that of 29 countries surveyed globally, Ireland had the highest honeybee mortality rate, at 29.5%, over the winter of 2015-2016.

"We are testing various possible ways of controlling the mite, which will hopefully control the viruses," he adds. "We are providing technical assistance to beekeepers, We need more toleration of untidy patches in gardens and on roadsides. Brambles, while maybe unsightly, are good for bees.

maintaining the research colonies and testing different ways of controlling mainly varroa."

The programme is also trying to combat American foulbrood (AFB), one of the most threatening epidemic diseases in honeybee colonies. In the present study, a protocol to identify AFB in a colony, using bacteriological analysis of honey, is to be developed. "This task will also allow us to establish if it is practical to use this method as a diagnostic tool for AFB, rather than the traditional testing of brood comb."

The pesticide curse

To meet global population growth and resultant food demand, the pressure on pesticides (insecticides, herbicides, fungicides) to deliver higher standards for crop protection has increased. These pesticides are applied to crops but reach bees through pollen, nectar, the air, water or soil. Although herbicides and fungicides may not have direct toxic effects on pollinators, herbicides reduce the amount of food available, and fungicides may interact with other pesticides and have negative impacts on bees.

In recent years, the use of neonicotinoid insecticides has been limited by EU regulation. 'Neonics' have been shown to reduce colony growth and queen production in bumblebees and possibly navigation in honeybees.

Habitat destruction

The availability of food plants and nesting sites has been drastically reduced through intensive farmland, forestry and industrial use. Those areas of habitat that do remain have declined in quality.

Research undertaken by Dr Veronica Santorum in UL's Department of Biological Sciences shows there are very f ew bumblebees seen on County Limerick farms, compared to sites in the Burren in County Clare, which has more flower diversity.

One issue causing this is the intensification of farming,

which has resulted in fewer flowers within the sward and in hedges.

The loss of natural and semi-natural habitats is another problem as, for example, removing hedges removes the sunny sites where solitary bees nest.

Our tendency to tidy up the landscape rather than allowing wildflowers to grow along roadsides, field margins and in parks and gardens is also playing a role in fewer of these resources being available, adds Professor Breen.

"We need more toleration of untidy patches in gardens and on roadsides. Brambles, while maybe unsightly, are good for bees. If you are into gardening, be mindful that single flowers are better for bees than double flowers," he says.

Wildflower warning

There is a caveat on efforts to introduce more wildflowers to the countryside however. A recent campaign by Cheerios to give away flower seeds was both wildly popular and controversial. The cereal maker's move to distribute 1.5 billion seeds to the public to boost the ranks of North America's bees drew praise from some quarters for trying to highlight the plight of the bees. However, others are fearful it could do more harm than good by introducing invasive species to ecologically-sensitive environments.

Professor Breen is an advocate of being mindful of the sensitive nature of ecology. "If you want to sow wildflowers, there are sources of Irish wildflower available here and they should be used. Be careful of the types of wildflower.

"If you want an example of a double-edged sword, the invasive species Himalayan Balsam is rampant on the banks of the River Shannon locally. Beekeepers consider that it is a valuable late source of nectar in September/October. So, while the honeybees love it and it looks pretty, it is absolutely an invasive species when it is out of control," he concludes.

Letters

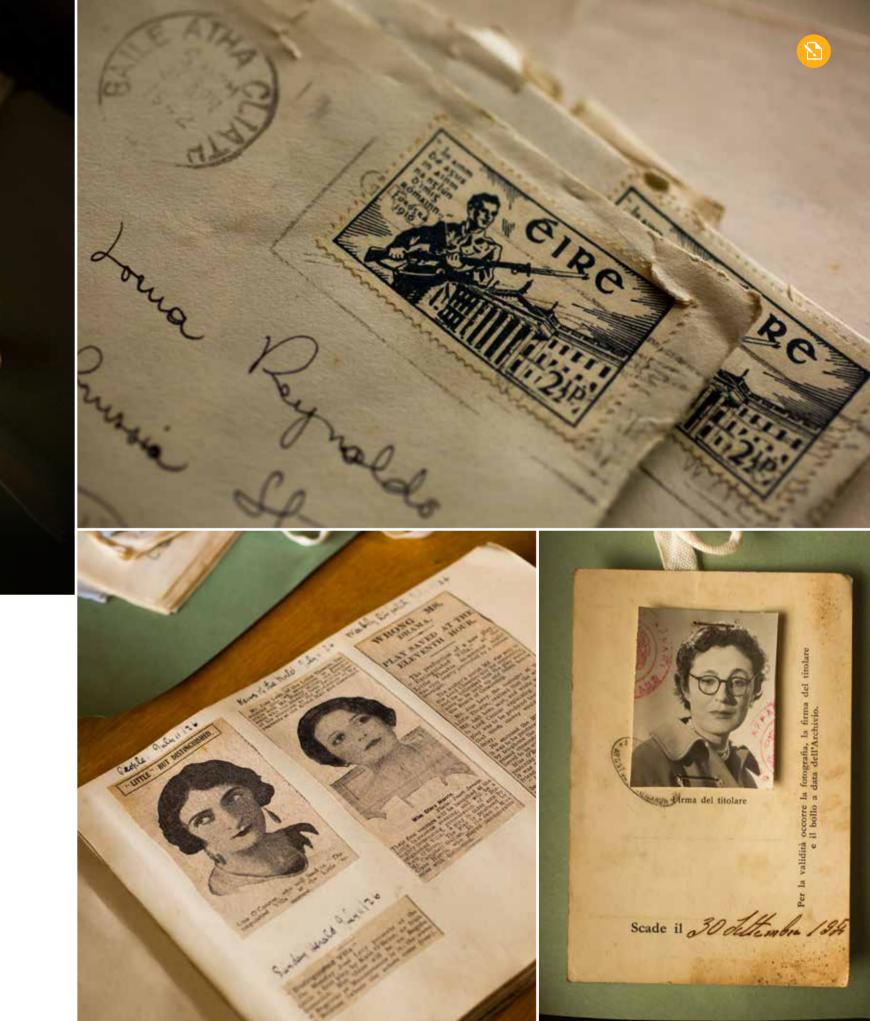
4310, Brief Lar

Over 600 letters belonging to the famous Limerick writer, Kate O'Brien, have been donated to University of Limerick's Glucksman Library. The extensive collection of letters, written from across the globe from the 1920s up to the 1970s, gives a vast insight to the writer and the woman herself, whose work was banned in Ireland for a time.

Ken Bergin, head of special collections and archives at the library, said the letters, which were donated by one of the writer's relatives, Clare Hannigan (nee O'Mara), are "a real coup" for UL and will greatly add to their existing collection on O'Brien.

After the success of her play *Distinguished Villa* in 1926, she was awarded both the 1931 James Tait Black Prize and the Hawthornden Prize for her debut novel *Without My Cloak*. O'Brien is best known for her 1934 novel *The Ante-Room*, her 1941 novel *The Land of Spices* and the 1946 novel *That Lady*. Her 1936 novel, *Mary Lavelle*, was banned in Ireland and Spain, while *The Land of Spices* was banned in Ireland upon publication. In addition to novels, she wrote plays, film scripts, short stories, essays, copious journalism, two biographical studies and two personal travelogues.

O'Brien's letters touch on her personal indulgences, including her art collection, which featured at least one of Picasso's works, her time during the Blitz in London, her difficulties in finding a good housekeeper, her attempts at gardening and her extensive travels around the world, where she locked herself away to settle down to writing.



At home with Munster

By John Keogh

Andrew Conway outside Munster Rugby's high-performance centre at the University of Limerick.

Munster's move into a new high-performance centre at University of Limerick is already starting to pay dividends. After a few challenging years in Europe, they are back among the elite and flying high.

Andrew Conway has played a huge role in this revival. The former Blackrock College man moved to Munster in the summer of 2013 and is making hay after a couple of injury-ravaged seasons.

Conway is fulsome in his praise of the new facility. "It's incredible," he says. "I don't think it can be overstated about how big a difference it has made.

"The lads never knew anything different than travelling, whether it was Limerick to Cork or Cork to Limerick, once or twice a week. You were cutting down the training time you had together and the time you had together as a squad was so little when compared to other professional teams.

"I think it was the only professional sports team in the world that didn't have one proper training base."

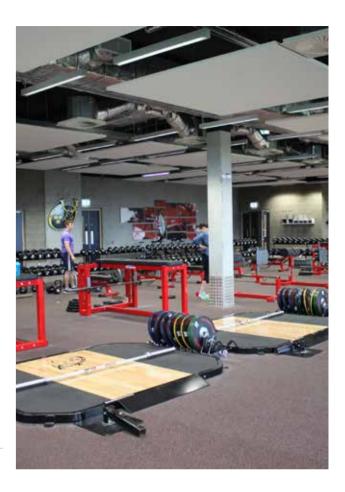
When things were going relatively well with Leinster, I just had something in my gut, I don't know what it was but it was pushing me towards here.

"A few things have fallen into place and other things have aligned but it is a huge, huge part of how we have gone this year and, hopefully, how we can continue to go."

The move to Munster came as a bit of a surprise to most, as Conway was highly regarded at Leinster. He says it had been on the cards from the moment he left school, however.

"It was probably a long time coming really, as I was always a Munster fan," he admits. "We went across to Cardiff for a few of the Heineken Cup finals and I always had a bit of a soft spot for them."





"Not many people know this but when I left Blackrock, there was potential for me coming to Munster at that point but I decided to stay with the Leinster academy and work my way up through there.

"When things were going relatively well with Leinster, I just had something in my gut, I don't know what it was but it was pushing me towards here.

"I actually got onto my agent to see if we could make the move, to see if it would be possible. When Munster were keen, I wouldn't say it was an easy decision but it was a decision I was delighted with," he notes.

That decision has proved to be a shrewd one. The move to Limerick has been relatively smooth and while there may be a lot going on in Dublin, the quieter city suits the professional athlete's life more, he feels.

The new training base at UL is helping Munster on the field and Conway is quick to point out that despite the college being an extremely busy place, it is not distracting.

"You kind of notice the students less now because, before, we were in the gym just above them, so you would be knocking around and seeing all the classes going on.

"But now, we are pretty much segregated with our own full building, which is brilliant. We don't have to go anywhere for meetings, the pitch is right here, our changings rooms are right here, the gym is in between, so we don't stray too far from it because we have everything at our feet."

Conway's superb form for Munster this season was recognised with a call-up to Ireland's Six Nations squad. He made his international debut in their 13-9 victory over England in the final game of the tournament. His first Irish cap was the culmination of a lot of hard work, which Conway describes as a "dream come true".

Despite his increasing profile in the world of rugby, Conway enjoys the quiet life. He lives in Castleconnell, just 10 minutes from the university and the potential distraction of social media is not something that occupies his time, although he does admit to putting a few pictures of himself and his dog up on Instagram.

"My life is relatively boring these days. My Leaving Cert wasn't the best but I'm trying to make up for that now by being an avid reader. Not of anything educational, more just different types of books.

"I find myself on the couch at home with my Kindle as opposed to the TV and despite what I tell the lads, they don't believe me, it's true."

The new high-performance centre has a state-of-theart gym, treatment room and a 65-seat auditorium but Conway's favourite place inside the facility is something a lot simpler.

"There is a little room with two bunk beds. It's actually unreal because we work really hard Monday, Tuesday and Wednesday and it is tough going, especially if you are recovering from a game on Saturday.

"We are told that any extra bit of recovery time you can get is giving you an edge and to have somewhere where you can put the head down for half an hour and chill out – I doubt there are many places like it in the country," he concludes. We don't have to go anywhere for meetings, the pitch is right here, our changings rooms are right here, the gym is in between, so we don't stray too far from it because we have everything at our feet.

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Raising the bar

Establishing a professional high-performance coaching system is key to improving athletes' performances on the world stage, writes Drew and Hayley Harrison, who have spent 22 years in this capacity at University of Limerick.

It is several months since Thomas Barr stunned the nation with his performances in the Rio Olympics, coming fourth in the 400m hurdles final and breaking 48 seconds for the first time.

The challenge to set the bar ever higher is always a priority in sport. The question now is, how?

Key to improving the level of athletics in Ireland is better-trained coaches and providing and supporting a high-performance coaching programme through selected third level institutions. If the very best environment is created for coaches, then they can provide the very best environment for athletes.

Optimising the total training environment of an athlete includes ensuring there are good facilities, equipment, proximity, quality accommodation and a top-class training squad.

Coaches play a pivotal role in this, as they can monitor all aspects of a training environment and ensure optimal performance on demand.

Providing high-performance coaches is essential if athletes who have highperformance potential are to have a realistic chance of reaching their goals.

High-performance coaches should be distinguished from other coaches by their level of technical knowledge and skills acquired through specialised education, experience and continuous professional development. Providing sustainable, on-going support for a truly high-performance coaching system in Ireland is the first priority, if we are to consistently deliver athletes that are capable of major championship finals and medals.

At present, Irish athletics relies too heavily on volunteers to coach Olympic and major championship athletes. Government funding for sport is directed through Sport Ireland and expenditure on coaching across all sports in the last five years shows zero investment in face-to-face coaching, according to the Irish Sports Monitor Annual Report 2015. National governing bodies can allocate some of their funding to coaching but it is not a requirement and Athletics Ireland,

at present, does not directly allocate any of its funds to coaching.

Some coaches may have received formal education through their governing body but it is unlikely that this alone could adequately prepare them for working in a high-performance environment. Others may assert that coach education is best if 'learned on the job' but this is very time-consuming and the outcome is uncertain. Alternatively, a more professional education, with the goal of establishing high-performance coaching as a profession, would require extensive third level training. However, if third level institutions provide highlevel technical expertise and knowledge, along with the opportunity to work in a high-performance environment overseen by some of the best coaches and academics, then Ireland could potentially establish the foundations of a true high-performance coaching programme.

These professionally-trained coaches could be mentors for aspiring highperformance coaches and this workforce could really develop more athletes like Thomas Barr.



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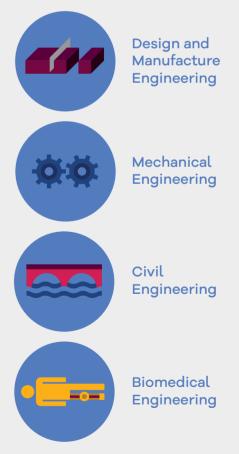


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Lowering back pain myths

by Áine Freeman



Dr Mary O'Keeffe has become the first University of Limerick graduate to win a Marie Sklodowska-Curie Fellowship, awarded for her research into lower back pain as a physiotherapist. Dr O'Keeffe began studying for her bachelor's degree in physiotherapy because of a love of sport and a desire to treat sports injuries but she quickly realised it was the research side of her degree she enjoyed most.

"When I came to UL, a lot of the course was about pain science, research and the evidence for certain treatments and it was this aspect of the course that appealed to me most," Dr O'Keeffe explains. She was inspired to research back pain because of the prevalence of myths surrounding the condition.

"A lot of what I thought was true about back pain before starting my degree turned out to be completely wrong when I was exposed to the science of it. It was fascinating. That made me reflect that if I'm thinking that way about back pain, a lot of the public must think that way too. There are many misconceptions about back pain but, when you examine the evidence, they are not backed up. The unfortunate thing is these myths drive unnecessary fear over diagnosis and treatment, which all fuel increasing disability and reduced recovery. "When people get back pain, there is a tendency for people to wrap it in cotton wool. This is now shown to be unhelpful. We don't see this with other body parts. Changing poor beliefs on a societal level should be a target for all back pain researchers," she says.

Dr O'Keeffe continued her research at PhD level. "I applied for a PhD through the Irish Research Council to research lower back pain. My research group was looking at a more multi-dimensional, holistic approach to back pain, where you consider the physical, psychological, lifestyle and social aspects of a person's back pain and associated disability to see is this better than usual care," she recalls.

Exercise is the best preventive strategy for back pain but probably underused. Medications don't speed up recovery and don't have strong benefits but they are given out as easily as sweets.

As part of this research, patient trials were conducted. "We carried out a clinical trial in three HSE centres in Ireland, which involved recruiting people with chronic low back pain. We measured certain things, for example their pain, their disability, their fear, their mood, how long they'd been off work and so on, before starting treatment. Measurements were taken after treatment and again six and 12 months later. People were divided into two different treatments - one would get our oneto-one multi-dimensional treatment and the other would complete exercise and education in a group setting. We wanted to see is one approach superior to the other."

Dr O'Keeffe's view on lower back pain and how it should be treated has now changed completely. "Back pain is as common as the cold and most people worldwide will get it at some point but 98% of it is not dangerous or serious. Most of it will run its own course without the need for treatment. This should come as a huge comfort to the general public, with the key thing being not to panic.



You can have back pain without back injury.

"This was a huge shift in my thinking, as we now know that pain can be driven by multiple things, including physical, psychological, health, lifestyle and social factors. All pain is 100% real, even when non-injury factors are involved. For example, bed rest was a thing I thought would be good before my physiotherapy degree but now we know this is very unhelpful. Staying off work is unhelpful for back pain, so people should be encouraged to return to work as soon as possible. Exercise is the best preventive strategy for back pain but probably underused. Medications don't speed up recovery and don't have strong benefits but they are given out as easily as sweets.

"This idea that we need to sit in a particular posture or we need to sit straight, that hasn't been found to be true at all. We're finding that there actually isn't any ideal posture. The back is a very strong structure, it isn't like a Jenga game, where pieces like discs or bones randomly fall in or out. It is rock solid. Unfortunately, the general public don't know these things and this needs to change. They need to be informed of the science," she outlines.

Completing her PhD in June 2016, Dr O'Keeffe was awarded a Marie Skłodowska-Curie Fellowship from the European Commission in January 2017. These prestigious fellowships are presented to researchers who show great potential to make a difference in their field.

Through this fellowship, Dr O'Keeffe will carry out further research at University of Sydney, supervised by Professor Chris Maher, the world leader in low back pain research.

"When I go to Sydney, I will be doing advanced analysis of my PhD trial, for example medication and costs. Also, I will be getting involved in other projects which I wouldn't have access to here, for instance, I'll be involved in drug trials, exercise trials and research into over-diagnosis and over-treatment," she says.

The fellowship also means she is receiving more media coverage, something she hopes to use to spread her findings to a larger audience. She will begin her two-year research fellowship in Australia next January.

"I've been in UL for eight years now, so I think going to a new group will be great. I'm really looking forward to it", Dr O'Keeffe concludes.

Building *a future* in manufacturing

The nature of the manufacturing industry is changing. UL Links explores how University of Limerick is meeting those challenges.

It is no secret that the manufacturing industry took a serious hit in the aftermath of the economic collapse. With the worst of the recession now over and a lesson learned that building, buying and selling property is not a sustainable ground for any economic policy, Ireland is beginning to focus on industries with output.

Currently, the manufacturing sector employs 205,700 people directly and up to 400,000 indirectly. With the focus on employment, innovation and industry, the resurgence in manufacturing is taking a different path to previous generations.

Technologies such as automation, autonomous robots, the Internet of Things (IoT) and cloud computing are transforming the way manufacturing facilities are designed and supported. This innovation, known as the fourth industrial revolution (Industry 4.0), requires different skillsets than before. With the demand in place, the emergence of Industry 4.0 has led to a skills shortage for companies like SL Controls.

Established in 2002, SL Controls has evolved into an internationally-recognised industry leader in Equipment Systems Integration and support. The organisation works with companies in the pharma, medical device, healthcare, food and beverage sectors, which require high-level expertise in industrial IT integration and regulatory compliance.

Industry 4.0 requires the creation of 'hybrid products', which consist of both products and services. By leveraging IoT and cloud technologies, along with key equipment partners, SL Controls is at the forefront of creating these hybrid products for the manufacturing sector. It is also developing the industry's understanding of Industry 4.0 and ensuring that engineering graduates have the necessary skills.

The University of Limerick recently worked with SL Controls to develop a Masters of Engineering in



Above: Dr Seamus Gordon in the mechatronics and automation labs at the University of Limerick. Opposite: Shane Loughlin, CTO and co-founder of SL Controls; Dr Seamus Gordon, UL and Keith Moran, managing director of SL Controls.

Mechatronics to meet market needs. The first of its kind in Europe, graduates get to work with the latest in robot and information technology at the cutting-edge of manufacturing.

"Because of the recession, there is now a scarcity of experienced manufacturing engineers, particularly in mechatronics/automation. These technologies are the heart of Industry 4.0," says Dr Seamus Gordon, Mechatronics course director and a key player, along with Dr Huw Lewis of the Graduate School, in a collaborative effort with Shane Loughlin, CTO of SL Controls, in the development of the programme.

Mr Loughlin says it is hugely important that third-level institutions can stay on the pulse of this industry.

"We have increasingly found that graduates are not properly prepared to enter the workplace, as education trends have fallen behind real-world advances in a rapidly evolving manufacturing industry. The demand created by the increase in multinationals, coupled with the fact we are now entering the fourth industrial revolution (Industry 4.0), means we need to act now to safeguard the future of engineering in Ireland. At SL Controls this is our priority and we want to ensure we are doing all we can to uphold Ireland's reputation of educating top quality engineers.

"It is vital that all third level institutions are moving at the same pace as industry and properly responding to the changes. There is no room for complacency, as we will only get left behind," he adds.

Aimed at engineering students and those already working in automation and manufacturing who want to upskill, students have the opportunity to work on a replica manufacturing line, to integrate complex data and run tangible work scenarios in the automation lab, under expert tuition. This hands-on type of learning is the ideal environment for creating more skilled and proficient graduates, who are capable and experienced enough to go straight into industry.

Industry 4.0 is set to create exciting career opportunities for graduates in Ireland and across the globe, with job prospects in everything from engineering, project management and system architecture. By strategically investing in education, in particular in programmes like the M.Eng in Mechatronics, Ireland is poised to capitalise on this unique opportunity.

Material interest

Video technology is revolutionising how atoms are observed, making it a game-changer in materials research.

Consumer-driven, the electronics market is increasingly under pressure to produce faster, smaller, cheaper, more power-efficient devices. On an operational level, this means working with new materials and shrinking geometries and, to this end, the use of transmission electron microscopes (TEMs) are becoming ever more essential.

University of Limerick's newly-installed FEI Titan Themis in the Bernal Institute is giving researchers the opportunity to be at the forefront of these technological shifts.

Until recently, these machines were still-image cameras but now video technology has arrived. As Dr Andy Stewart explains, most detectors used in TEMs can record up to 100 frames per second. By contrast, the new UL TEM, at 1600 frames per second, can capture events on a hundredth of the timescale of the human eye sending signals to the brain.

"This new detector is an add-on to the system at UL, giving us the capabilities to see things more clearly."

Recent developments mean it is now possible to observe materials in a range of environments, including gases and liquids, under heating or while passing an electrical current through the material. This in-situ microscopy is enabling materials to be studied atom by atom in conditions close to a real-world environment.

Combined with the fast detectors, this is leading to a seismic shift in the understanding of material applications in products across industries using semiconductors, pharmaceutical drug materials and investigations of novel 2D materials, which constitutes increasing activity at the Bernal Institute.

Dr Andy Stewar

"We are researching new 2D materials which are showing great promise," notes Professor Ursel Bangert, Bernal Chair of Microscopy and Imaging.

Professor Bangert is currently working on tailoring the opto-electronic properties of 2D materials. She is looking at implanting atoms into 2D materials in order to be able to tune the band gap, which will advance the semiconductor industry.

Understanding what happens at an atomic level when we heat materials up, plug appliances in, take our medication or combust fuel in a car engine will ultimately teach us the fundamentals of how the world operates, notes Dr Andy Stewart.

The Titan Themis at UL is one of only a handful in the world and with its in-situ capabilities, it has already helped researchers to win European funding to investigate the growth of pharmaceutical crystals in liquids under magnetic fields.

In-situ TEM is a fast evolving area of research; having these capabilities available on a state-of-the-art microscope will help keep Irish research, both academic and industrial, at the forefront of materials research.

"We have capabilities here that no one else has, so having access to this cutting-edge equipment is putting us ahead of the game," Dr Stewart concludes.



By Dr Sheila Killian, Assistant Dean of Research at Kemmy Business School

Tax has an enormous, sometimes hidden, effect on our daily lives. It affects what we buy, how we buy it, if we order online or shop in the local town. It impacts the services on offer locally, what the government can afford to supply, what private businesses are incentivised to offer. It shapes our savings options, the size and security of our pensions, our children's educational opportunities, the health services we can avail of. It redistributes wealth and can also concentrate it in the hands of a privileged few. It can strengthen or undermine entire industries through specialised incentives. The tax system both funds and forms services that, depending on their reach and availability, can either create opportunity for social change, or widen the gap between rich and poor. Most of us don't see it like that. Workers look at tax as that part of their payslip they never get to see – the wedge between "gross income" and the important part that gets lodged to our bank accounts. Businesses tend to see tax as a cost, to be managed like other costs, minimised and avoided if possible. If you only see tax as a cost, avoiding it can seem rational, even sensible. But tax avoidance is not cost minimisation in the same win-win way as switching off the lights or using less paper might be. In fact, tax avoidance contributes directly to inequality, both nationally and internationally. For that reason, the European Union has funded a €5 million research project to address the problem. A team of researchers from the Kemmy Business School at UL, working as part of this consortium, will focus on the role of tax expert networks. There are two intertwining lines of argument against aggressive tax avoidance: the moral argument and the sustainability perspective. Morally, tax avoidance diminishes the ability

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Tax & inequality

So, the design and effectiveness of the system really matters for the sort of society we want to live in.

of the state to tackle problems of inequality, poverty and homelessness, while multinational tax avoidance also undermines the capacity of developing countries to provide basic services for their people. The common good, funded by tax revenue, is

undermined and, critically, this is usually done in a way that will not directly impact the avoiding business in the short term. Services like financial infrastructure, telecommunications and policing tend not to be on the frontline for government cutbacks in the same way as social services. The employees of a business may not even be directly affected, unless they have a child with special needs, or an elderly relative depending on state services. Even then, they are unlikely to connect the reduced services that they are experiencing with the tax decisions of the business.

Longer term, however – and this is where the sustainability argument comes in - widespread tax avoidance means fewer libraries, reduced funding to education, a less functional health service and poorer public transport. All of which makes a country less open and equal. That inequality, in turn, creates instability, making the country less attractive to live in and less functional as a place in which to do business.

It is important that professional experts are aware of the long-term impact of their tax decisions, even when that impact is initially remote from the business. Tax avoidance is not just cost minimisation and tax is more than a technical issue. The short-term victims of tax avoidance are often out of the line of sight of tax avoiders; the long-term victims are all of us.

Planning for Brexit



In the wake of the UK's exit from the EU, director of the International Commercial and Economic Law Research Group, **Professor Raymond J Friel**, believes planning is paramount.

"Plans are useless but planning is indispensable," according to General Dwight D Eisenhower, supreme commander of the D-Day landings, one of the most complex military operations ever undertaken.

Talking in military terms, in war, as in life, plans seldom survive first contact with the enemy and it is the ability to adapt and change to a differing reality on the ground that separates the victorious from the vanquished. Plans are useless because they are made with imperfect information: we simply do not, and cannot, know all the myriad of factors we will face when implementing a plan.

So why is planning indispensable? The best planning separates the factors of which we cannot be certain from those which we can. Knowing this enables us to respond to the certainty in the problem and be alert to the uncertainty. In essence, this is the hallmark of how we teach law at UL and as we face into Brexit and all its ramifications over the coming years, Ireland will increasingly need legal graduates with that capability.

There is a lot that we are uncertain about with respect to Brexit. We don't know what the final relationship between the UK and the EU will look like. We don't know if the UK will surge economically or perish into irrelevancy. We don't know if the EU will disintegrate or become more federalised.

Brexit certainties

We can be certain of a number of

things that will occur as a result of Brexit, however, for which planning will be indispensable.

Firstly, English will become a minority language within the EU. It will be replaced with French or German and the inevitable marginalisation of English will impact on Ireland significantly.

Secondly, the influence of the common law, a shared legal tradition between Ireland and the UK, will diminish rapidly. Within the EU, common law will become almost unique to Ireland. The common law is the predominant legal framework for international trade, as it is the legal system that operates in nearly half of the G7 countries, including the USA. Without UK judges in EU courts It was an article of faith for the government that our low corporate tax rate was sacrosanct, regardless of what other sacrifices needed to be made.

to provide this influence, the legal system will revert to a more localised civil law approach, as operated before Ireland and the UK joined in 1973.

Thirdly, the absence of the UK will remove the strongest opponent to the increased standardisation of EU tax regimes, whose purpose is to remove internal tax competition, a competition from which Ireland has benefitted hugely. Even as Ireland sought financial help from the Troika, it was an article of faith for the government that our low corporate tax rate was sacrosanct, regardless of what other sacrifices needed to be made. It was EU member states, other than the UK, which fought hardest for it to be amended.

Finally, the EU Commission has recently become guite insular, attacking major US corporations operating within the union on competition, state aid and privacy infringements. One only has to look at the recent state aid ruling against Apple in Ireland and investigations against Google, Facebook and others for evidence of this. The UK's more liberal laissez-faire attitude to US companies will no longer moderate the more interventionist approach of the EU. The post-Brexit decision of Apple to establish a large headquarters in London, as well as Snapchat's decision to locate its European headquarters there, stands as testament to the UK's legal environment.

These certainties match almost exactly what 'Ireland Inc' has used to attract Foreign Direct Investment over the last number of years – an English-speaking common law trading environment, with a low corporate tax rate that is conducive to foreign investors. How then can we prepare in a context where locating in Ireland will not, irrespective of whatever agreement follows Brexit, allow unfettered access to one of the world's largest markets – the UK?

Planning at UL

The Law School at UL has already begun to not merely plan but to implement change to reflect the certainties of Brexit in terms of students, research and community engagement. UL's programmes offer law students the choice to learn a modern European language, as well as an opportunity to study at a wide range of European partner law schools for a semester. Students can also avail of similar exchange opportunities within the US and Canada, while transatlantic courses have been piloted using video conferencing, giving access to students to a wide range of US legal experts.

A primary research area is the intersection between law and technology and UL projects include the commercialisation of drones and the 'Uberisation' of the workforce. In partnership with colleagues in the Kemmy Business School, two Horizon



2020 research awards have been secured on risk and liability issues for autonomous and semi-autonomous cars.

Reaching out to the community with events such as the IP Law Café, we are creating bridges to multinationals located in the Mid-West, building capacity among SMEs to deepen IP management and providing a networking forum between US and Irish business people and academia.

The recent success of Sarah McCarthy in the 2016 A&L Goodbody Bold Ideas Award is indicative of the next generation of law students graduating from UL.

Sarah won the award for an online tool to connect young Irish Fintech start-ups that lack the necessary funding to progress their ideas with investors from across the world online, using the crypto currency Bitcoin.

The Law School at UL is answering the certainties that we know Brexit will create by graduating a new breed of law student who is able to work in a global environment, driven by an entrepreneurial spirit and alive to the legal challenges that surround the widespread introduction of increasing levels of new technology.

These graduates will help navigate us through the uncertainties posed by Brexit, providing us with the confidence that they will have the ability to respond correctly as these uncertainties resolve themselves.





Dr Juliette McMahon and Claire Harnett were surprised at camp life in the Golan Heights, when they travelled there to complete a workplace survey for the Defence Forces, writes **Áine Freeman.**

Since 1974, the United Nations Disengagement Observer Force (UNDOF) has maintained the ceasefire between Israeli and Syrian forces in the Golan Heights.

When Dr Juliette McMahon travelled to the area of operation with Claire Harnett in December, to complete a workplace survey for the Irish Defence Forces, their image of what the soldiers would be doing was much different to the reality.

"They are constantly on alert. They do preparation exercises every day because there is always a chance that something is going to happen," Dr McMahon, a lecturer in HRM and industrial relations at Kemmy Business School, notes.

Dr McMahon surveyed focus groups of the Defence Forces across Ireland in 2015. The aim was to gather information from soldiers about their wellbeing and their opinions about life within the Defence Forces. The following year, it was decided that the survey needed to be conducted with those operating overseas.

"The idea of the survey was to have a say, so it was felt we needed to get the voice of the overseas troops. What they're facing overseas is a lot different in many ways from what they are doing at home in Ireland."

Both women stayed for five days in the nearby village of Kibutz Ein-Zivan. They held the focus groups with soldiers based in Camp Ziouani, which is "quite an isolated place. It's near villages but there wouldn't be huge interaction".

Dr McMahon felt the seriousness of the situation in the Golan Heights when they entered the camp. "The first thing they did was to sit us down and take us through the logistics of the camp. They pointed to these armoured clothing, flack-jackets and vests and said 'they're yours, they have to stay beside you and if anything happens, that's the first thing you take'. They took us through the procedures if we had to leave in a hurry. That brought it home to us how serious it was."

They then organised the camp into groups. "We researched into why people feel the way they do about the Defence Forces, good, bad or indifferent and what are the key things for them being overseas," Dr McMahon explains. Camp life was not what the researchers were expecting.

"The conditions are tough, the camp is welcoming but, for example, there is no alcohol allowed and you can understand that, given the situation that's going on in the Golan Heights. The things we take for granted, like being able to go out and go down to the shop, is not an option for the soldiers. They're quite restricted. They're over there to do a job, they're not over there for a holiday and that's very clear."

The everyday danger that is a reality for the forces was apparent. "The guys have to be able to go from cleaning the kitchen or preparing dinner to being in Mowag tanks, at their positions, ready to go in 10 minutes," she says.

Along with seeing the troops at work, Dr McMahon also saw a more personal side. "They really are a tight-knit bunch. They said they do things they would never have considered doing before, like playing bingo and cards in the night."

The connection to the University of Limerick was also evident, with several past students on site. "It was



Dr Juliette McMahon and Claire Harnett with members of the Defence Forces in the Golan Heights and (opposite page) with Joe Freeley of the Irish Defence Forces at University of Limerick.

so good to go into the camp and see UL alumni after UL alumni as Defence Force members. They were in UL studying mainly master degrees in our department. From a personal point of view, you're lecturing in industrial relations, leadership and human resource management but, very often, we're teaching it from the point of view of a private sector organisation. Then you see leadership and people skills being utilised in a very different context," she adds.

After their work in the Golan Heights, the two women travelled to Jerusalem to complete a focus group with Irish Defence Force workers in the United Nations'Truce Supervision Organisation (UNTSO). The troops there are observing the West Bank and Jerusalem situation.

"To go to Jerusalem and see the division, for someone who's heard about these things but never seen them, it's fascinating to see the observers and the work they do and the lives they lead."



Dr McMahon believes the results from such a trip are immense. "You get to do research which informs what you do and gives you an insight into the lives of overseas officers.

"I don't think we have any real sense of what these men and women are doing and the service they are providing, not just for Ireland, but for Europe and the world."

An African adventure

Eleanor Brennan spent seven months in Ghana working in a leprosy centre. She spoke to **Áine Freeman** about her co-operative placement working for Ghana native and UL alumnus Dr Mark Mantey.



Now in her final year, journalism student Eleanor Brennan spent her co-op placement in Ghana, working in administration and public relations for the Padre Pio Rehabilitation Centre.

Headed up by Dr Mark Mantey, who completed his undergrad, masters and PhD in UL, the centre is also known as Ahotokurom or 'place of serenity'.

Dr Mantey grew up in a leprosy village close to the centre, as both of his parents suffered from the disease. He later secured funding from the National Lottery in the United Kingdom to develop the village, which became known as Enyindakurom, or 'the village we did not expect'.

Eleanor explains, "Mark grew up in Enyindakurom, the leprosy village where people who were undergoing treatment stayed in, as the leprosy hospital was just down the road. They couldn't keep travelling back to their homes because some of those people lived in different countries, so the journey was too much. Instead, they started squatting in this village and over time, people starting building makeshift houses. After Mark got his education in Ireland, he came back and became director of the centre and it blossomed into what it is today."

The Padre Pio Rehabilitation Centre is a place for those who have become marginalised, physically disabled and disadvantaged as a result of leprosy. The centre is based in the Cape Coast region and provides care and a community for people who have been affected by the disease. There are a variety of facilities and services for sufferers and their families, which help them in overcoming the everyday struggle of having a connection to leprosy.

Eleanor decided to travel to Ghana during her second year at college. "I've always wanted to go to Africa; I've known that since a young age. So when I heard about this opportunity, I did some research. I became really interested in leprosy and what the sufferers go through. I thought this was a great way to travel to Africa and immerse myself in a new culture, while doing some good," she says.

Eleanor travelled to Ghana in June 2015 with two other UL students. She lived in Enyindakurom with members of community who had suffered from leprosy and, although now cured, endure the stigma connected with it.

Although Eleanor's official title was public relations and administration, her role varied greatly from day to day.

"You definitely had to be very flexible. One thing I learned about Ghana is that everything changes; they run on their own time. We used to called it Ghana time. In the course



of one day everything could flip, so you had to constantly be flexible."

Her day began with the Muslim call to prayer at 4am. After a morning workout and a bucket shower in the open air, Eleanor made her way to the centre by bus. The bus ran primarily to pick up children who attended day care in the rehabilitation centre.

"At 7am, Bernard the bus driver would pick us up. Some of our wildest times were on that bus because Ghana doesn't have roads, only dirt tracks, so the potholes were nuts. You are packed onto this bus, which is a 20-seater and there are 50 people on it, you've got music blaring, kids screaming, it was crazy," she remembers.

Eleanor spent a lot of time with the children. She helped them get off the bus, as well as making sure they were clean and fed before their day began.

"The kids really worshipped us because we would play with them. It's a very adult society where the adults don't play with them, but the volunteers were happy to. It was good fun.

"We ran a homework club as well because, when there weren't blackouts, we had one of the best sources of electricity in the village, compared to other houses. So if the kids wanted to do their homework at night-time, they could sit on our porch and use the porch light to do it."

Her day at work, after helping with the children, consisted of meetings with her boss and some of the nuns working on the compound and dealing with applications for funding. Visitors to the centre were also common and Eleanor spent much of her time ensuring these visits went well.

"The Ambassador of Ireland to Ghana, Sierra Leone and Nigeria came to the centre for a week with his wife and daughter. I was in charge of him during his stay. Meeting him and getting to spend so much time with such a figure was an amazing experience," she continues.

Eleanor also began to run English lessons for the staff working on the compound around the centre.

"A lot of Ghanaian people have jobs there but they couldn't speak English or needed to improve their English, so I ran adult literacy classes," she says.

The days were short, even in the summertime. With darkness falling by 5:30pm. It meant the girls lived a quiet life.

"You'd come home in the evenings and Gladys, our housekeeper, would have dinner ready. You'd shower again and then the electricity would probably go, so you wouldn't have a phone because it would be dead. We'd hang out with the children or we'd walk around the village at night or we'd read. We read a lot of books. It was a very peaceful lifestyle.

"Ghana changed my outlook on a lot of things. Specifically, poverty and what poverty actually means. We spend a lot of time watching charity ads and we think that's what poverty is, but it's not. That's what normal life is in Africa, it is what it is," Eleanor concludes.



Mark Doyle

bonne

From New York to New Zealand, UL graduates are living in every corner of the world. In recent years, thanks to an economic recovery, many have returned home.

Taking in a view of the Empire State Building every morning, Tríona O'Sullivan was a long way from her West Cork roots. Graduating from University of Limerck with a BA in Business Studies in 2014, she wanted to strike out and do something unique.

Moving to Manhattan in 2015 was a way to exert her independence. "It was something I wanted to do on my own to prove I could handle it. At home, people had certain standards and expectations of me, whereas when I went to New York, I could make mistakes and put myself out there," she says.

Walking out of the subway and stumbling onto the set of Law and

by Seán Lynch

Order SVU is something that was certainly unique.

She recalls her shock at meeting the cast. "They were all chatting and taking selfies with me. I grew up watching the show with my dad, so I rang him afterward at 2am and told him what happened. It was a surreal moment, especially for him."

Tríona worked as an executive recruiter at Innovo Staffing, just a five minute walk from Central Park. After 15 months there, the experience helped her to land an associate role with Barden Recruitment in Dublin.

Also graduating with a degree in business, Mark Doyle's journey to Manhattan 17 years earlier could hardly have been more different.

Mark spent his co-operative placement working in Portland, Maine and in Tokyo, where hr met his wife, Ciara O'Brien. When he completed his final exams, he landed a lucrative graduate role with Jameson Irish Whiskey in New York.

Perks of the job included an apartment on Manhattan's Upper

East Side, complete with a doorman and view of the Hudson River. He was later promoted to European brand manager for the company and spent four years travelling back and forth between Europe and New York.

Despite his success abroad, Mark wanted to move home.

"It was my choice to leave New York. I probably could have stayed but I was keen to come back and gain experience in Ireland. I missed it," he says of his move back in 2001.He secured a job with Diageo and from there went on to work with Northern Trust and Eircom. He is now the head of group brands at AIB in Dublin.

"Working in different countries helps gain perspective," Mark says. "I gained a lot of experience with different industries and countries when I moved abroad, which I think was the best way for me to expand my horizons."

Tara Russell was inspired to move abroad by travelling during her UL degree. As part of her BA Applied Languages, the Tipperary woman worked in Germany for her cooperative placement and studied in France on Erasmus.

"I think co-op and Erasmus are the perfect opportunities to find out w hat area you might be interested in," she notes. Tara moved to a small town near Stuttgart after graduating in 1998 to work in a translation company. Living there fostered in her a love of the outdoors.

She moved back to Ireland in 2007." was very happy in Germany, but it was family that brought me home. As my mum was getting older and towards retirement, I wanted to come back."

Tara now works as a freelance translator in Dublin, enjoying the freedom that comes with her role.

"I've never regretted the decision to freelance back in Ireland. I still have flexibility in when I work and how I work and that's wonderful. I wouldn't have these opportunities without having lived and worked in Germany," she says.

Like Tara, Darren Smyth enjoyed the outdoor lifestyle when he moved to New Zealand in 2010, three years after graduating with a BA Engineering from UL.

He went from designing ovens in Limerick to designing systems for military troops to train for the battlefield.

Darren saw it as "an opportunity to go overseas and gain some experience". He loved the more active life in New Zealand. "Instead of people going to the pub, people went to the beach there, with picnics and barbeques,"

he says. He moved back to Limerick last year, after he and his wife had their first child. Now working as a mechanical design engineer for Megadale Ltd in Galway, Darren

"I would definitely advise it for any young person coming out of college to consider moving abroad. It's the best experience I've ever had, no regrets at all."



Tara Russell

would recommend moving abroad to students after his own experience. Darren Smyth

Tríona O'Sullívan

Div ide 8 conquer

Irish band Beoga has been the focus of much attention over their recent collaboration with Ed Sheeran. **Áine Freeman** hears from UL graduate Niamh Dunne.



When we first met Ed, we were like 'Oh my God!' because he's so recognisable but after that, it was just like getting to know a fellow musician really. He was great craic.

Husband and wife team and UL graduates, Niamh Dunne and Sean Óg Graham, have had a hectic few months of late. Since the announcement that their group Beoga would feature on two tracks on Ed Sheeran's third studio album Divide, their media profile has gone into orbit.

For Limerick woman Niamh, who is both classically and traditionally trained, her interest in music began at a very young age." I was given my first fiddle at the age of four. My sister played at that stage and I was chomping at the bit to get a go myself."

Hailing from Caherconlish, the Dunne family are steeped in music and Niamh's father, Mickey, is a well-known piper. "I am massively grateful that I was given every chance to be a musician right from the beginning. It's all down to them [parents], their efforts and commitments."

Niamh completed a Bachelor's Degree in Irish Music and Dance at the Irish World Academy of Music and Dance in UL, crediting it as "the time of my life". It was during her co-operative placement that she joined Beoga and she has been working and touring with the band since.

Beoga's fifth studio album, Before We Change Our Minds, was recently released to critical acclaim. "It's probably the album we are most happy with to date. After 14 years on the go, we are probably more comfortable and confident in our instincts," notes Niamh.

Their collaboration with Ed Sheeran came about "naturally". Fellow musician and friend of the band, Foy Vance, had played some of Beoga's tracks for Sheeran when they were on tour. He was so impressed that he asked them to be involved with his new album.



The group spent some weeks at Sheeran's recording studios in Suffolk."We had a few beers and just hung out and it was just very relaxed. When we first met Ed, we were like 'Oh my God!' because he's so recognisable but after that, it was just like getting to know a fellow musician really. He was great craic," Niamh commented. She said Ed is "the real deal".

"He's a talent unto himself and is massively productive as a musician and performer. He has tapped into something creatively that people can relate to."

Beoga co-wrote Galway Girl with Ed, with speculation abound that Niamh herself was the inspiration behind the track. While Niamh herself laughed off such rumours, stating she is a true Limerick woman, the track does feature one of their own pieces, Minute Five. The band also features on the number Nancy Mulligan's.

Niamh described the style of music as "folky in a sense, probably because of the nature of our instrumentation and style of playing but it's very much an Ed Sheeran sound. It's got his style and substance with a flavour of Beoga in the mix".

Beoga has been thrown more directly into the public eye following the announcement of their collaboration. "We've had a lot of people approach us and it's a great position to be in. Hopefully, it will bring our music to a larger audience."

Niamh's profile took another boost with the announcement that she and her family would be honoured for their contribution to the music scene in Limerick, with a special reception to be hosted by Mayor Kieran O'Hanlon.

The band is determined to make the rest of 2017 as successful as its beginning. "We are recording again this summer, so it's an exciting time for us. Keep an eye out for lots more touring and music in 2017. Onwards and upwards," she concluded.

We've had a lot of people approach us and it's a great position to be in. Hopefully, it will bring our music to a larger audience.



Twenty-one students have been awarded degrees in UL's inaugural Paramedic Studies programme. UL Links caught up with two of the graduates, Kevin Reddington and Mark Callanan, to find out what a paramedic's typical day, if there is such a thing, is like.

Mark Callanan National Ambulance Service Paramedic

I work 12-hour shifts at a time, which could be from 8am to 8pm for a day shift or 8pm to 8am for the night shift. I work with another crew member, which can be either another paramedic or an advanced paramedic. We start every shift by doing a number of checks, for example, the monitoring and resuscitation equipment, trauma and medical management devices. We ensure all of this vital equipment is in place, easily accessible and are in good working order. By the very nature of this job, you cannot leave pre-shift checks to chance; someone's life may depend on it.

This job is full of learning, development and, sometimes, challenges. It is a job where we, as practitioners, don't know where we will be sent to next, as it is dependent on the 112/999 call received by our colleagues in the National Emergency Operations Centre (NEOC). The calls we attend range from locations such as open fields with an injured farmer, to the side of a busy motorway in the case of road traffic collisions, or in the warmth of someone's front room for a person who has an emergency at home. We can get calls to packed churches on a busy Sunday morning, or unlit back alleys of our cities and towns. We look after people from all walks of life, all ages and backgrounds who need our services at a time of emergency for them.

Every shift, every call and conversation provides us with an opportunity to learn something new or develop a new approach to a presenting problem. Advances in research and education are constantly pushing the paramedic profession to new heights. New medications and techniques allow us to help patients in better ways, providing more comfort to the sick and injured. Understanding the interactions between all of the body's systems enables us to provide help to people who require our service.

Developing and maintaining good communication skills are vital. Establishing a level of trust with the patient allows us to gain vital information, thus guiding our clinical decision-making.

I love my job as a paramedic, as it gives me the opportunity to help people and really make a difference.



Kevin Reddington Fire-fighter/Advanced Paramedic

Working as an advanced paramedic/fire-fighter with Dublin Fire Brigade could be described as one of the best jobs in the world because of the variety of the workload, the challenges of the working environments and the camaraderie. This variety stems from not only the nature of the emergency calls we respond to but also, on any given day, I could be assigned to duties on the fire engine, the ambulance or the rapid response advanced paramedic car.

Taking one particular day's events, it could go like this: At the start of the shift, we check our equipment, ensuring it is all accounted for, tested and re-stocked if necessary. This is commonly interrupted by an emergency call, the first of which is to a man in cardiac arrest. On arrival at the scene in the response car, we find an ambulance and a fire appliance already in attendance and performing CPR on the man. Despite all our efforts, a decision to cease resuscitation was made. Our role then transitions from providing advanced life support to caring for and informing this man's family of his death and the formalities that are required.

The next call-out is to a collision between a Luas tram and a bus. On arrival at the scene, multiple Dublin Fire Brigade resources are present and continuing to arrive, as well as the gardaí and National Ambulance Service. Our role is to assess, prioritise and provide treatment/advanced life support to casualties and liaising with the incident commander regarding transport and extrication decisions. In all, we assessed five casualties who were then transported to a nearby emergency department.

After the frantic morning, calm is somewhat restored, so we use this lull in activity to continue our equipment checks. After we have dealt with two people that had overdosed on illicit drugs, the final call of the day is to a three-yearold child, who has suffered a leg fracture. On arrival at the home, it is obvious that the child has broken his femur and requires intravenous fluid resuscitation and pain relief, which we provide, before transporting him to the emergency department.

Then it is time to return to the station to re-stock and prepare for the next watch to take over responsibility for the capital's citizens.

Global reach from UL base

As the managing director of Action Point, an award-winning supplier of software development and information technology support services, David Jeffreys knows what it takes to stand out from the graduate crowd.

What do you do?

I founded Action Point in 2005 with John Savage, our technical director. We have clients all over the globe. We help them with business process automation, Internet of Things solutions, legacy system redevelopment, managed services, 24/7 helpdesk services, business continuity and disaster recovery. Our headquarters is actually based on the UL campus.

What's the motivation?

The team and I want to become the leading indigenous technology services company in Ireland, serving clients nationally and internationally.

When did this first become of interest to you?

We started Action Point because we felt we could provide a higher standard of technology services than others. For us, it was about building long-term relationships with clients. The technology is the solution but the real value is applying that technology strategically, to align with a client's business goals. We wanted to show organisations how technology can be a business enabler and play a central part in their growth strategy.

Who and where is your target market?

We target mid-market, public sector and enterprise companies in Ireland, Europe and the USA.

How is technology affecting your sector?

Of all the technology trends that are taking place right now, perhaps the biggest one is the Internet of Things. It's the one that's going to give us the most disruption, as well as the most opportunity, over the next five years. Another is mixed-reality. For example, the Microsoft Of all the technology trends that are taking place right now, perhaps the biggest one is the Internet of Things. It's the one that's going to give us the most disruption, as well as the most opportunity, over the next five years.

HoloLens headset allows users to see and interact with realistic holograms in actual, physical environments. Users can share their viewpoint with others, even when they're in different physical locations.

Even within more traditional businesses, electronic document interchange is improving the speed of information exchange and mobile devices still have not been fully leveraged by many verticals. There are exciting areas for growth in all of these spaces.

Where did you go to school and what subjects did you favour?

I attended Wilson's Hospital School, a boarding school in County Westmeath. Believe it or not, my favourite subjects were maths and physics.

What is your leadership approach?

I favour a collaborative team-based approach, where we focus on solving problems, not allocating blame. We win as a team, or lose as a team.

Do you use social media?

Yes, I use Twitter and LinkedIn. I tweet on our company profile from time to time alongside our marketing team but, personally, I see the most value from LinkedIn as a 'virtual networking' tool. Your network is your net worth and LinkedIn has helped me build that.

How has the way in which you work changed from when you began?

As a founder of a tech company, you start by doing



everything. Eventually, you realise you can only take on so much, so you start hiring people. When you hire people that are better than you, it allows you to refocus what you do on the higher value items, or those which you are best placed at. Essentially, over time, you move from doing the job to getting the job done.

You must relentlessly identify the key parts of what you do that are special and unique to your organisation and ensure that, as others come along, they continue in the same vein. It's about giving people the high-level direction and leaving them the space to figure the rest out for themselves. Now that the organisation is 80+ people, my job is much more strategic and conceptual. I try to spend at least 30% of my time working on 12 to 36 months in the future. Where will we be with technology? Where does the company need to be in the market? What alliances and partners do we need and so on?

10 years from now: Make a prediction?

As Bill Gates has often said, we all have a huge tendency to overestimate changes that occur on a five-year time horizon but underestimate the changes on a ten-year horizon.

In ten years, technology will be even more pervasive. Wearables, such as Microsoft HoloLens, could be everyday tools and self-driving cars will have gained much wider adoption. Within Ireland, I would hope that we take Brexit as a strategic opportunity and both MNC and financial services are much broader. With our unique position as the only English-speaking country in the EU, I would hope that our indigenous companies can position ourselves to be propelled forward.

Within Action Point, I would expect the company to continue to expand, with offices across Europe and on both the east and west coast of the US.

I could say I hope to be retired but the truth is I enjoy this work way too much. The challenge is always something that keeps me going.

Finally, give us one memory of your time in UL...

Of all the things from UL that have influenced me, it's the co-operative education work experience that has most contributed to where we are today. The contract that allowed us to start Action Pont can be traced back to the people we met and worked with on co-op in second year.





Keep ahead in the cloud

Over the course of her career, Niamh O'Byrne (BA '91) has come to know the value of travelling. Visiting countries as diverse as China, Japan, Brazil and Canada, she explains "each travel experience provided me with a new idea of how I can approach and solve different challenges in my job".

Now living in New York, where she is Global Head of Certification at Amazon Web Services, Niamh says working in IT is exciting, especially "in the Cloud space".

Growing up in Galway, Niamh was interested in taking European Studies. "In 1987, University of Limerick was the only Irish third level institution offering a degree in European Studies."

After a summer spent in London, Niamh rented a room from a family in Elm Park, close to UL. "In the next room there was another girl, Michele, from Galway," she remembers. "Today, Dr Michele O'Dwyer is Associate Dean at UL's Kemmy Business School."

In her second year, Niamh and her classmate, Helen Murphy, who is now head of the Education Department at Waterford Institute of Technology, rented a mobile home off the old Golf Links Road. Niamh recalls fondly, "that was such a fun time for me and Helen".

Lit and Phil Society meetings and debates were the highlight of Niamh's weeks. "The ones who kept me on my toes with their wild and passionate discussions were Donal Waide, now director of sales at BitFlow, Neville Bourke, HR director at Bank of Ireland and Brian O'Farrell".

"My strongest memories of UL are the history lectures by Professor Brian Faloon and the challenge of finding a guiet place to study during the dreaded week 10 of every term, just before exams!"

Niamh also recalls her student days as a time when "no one had a laptop, so we all shared the computer lab. No one had mobile phones, so if you wanted to meet someone, you knew to go to the Stables and if you waited around long enough, they would eventually come in to have a drink or a coffee".

Following graduation, Niamh moved to Boston after her father had seen an advertisement for US lottery visas and encouraged her to apply. Her first job was with a computer software company, Allaire Corp, which was purchased by Macromedia (now Adobe). She next joined PTC and then Pegasystems. She led the IT certification programme at each of these companies.

Niamh reveals, "many people ask me how I ended up in my field and the truth of the matter is that I did not choose the field, it seems to have chosen me. Early in my career, I was recruited by Steve Curtin, who saw something in me. At Allaire, I shadowed Steve for a year - it was almost like an apprenticeship - and he taught me everything he knew. I honestly believe if Steve had not taken that chance on me, I don't think that I would be where I am today".

Moving to New York, Niamh took some time away from the workplace following the birth of her daughter, Siobhan, in 2005. In 2008 she joined Motorola and a year later, her son Cillian was born. It was a particularly challenging time "juggling a threeyear-old, a newborn and a job in IT".

In 2012, Niamh joined Amazon Web Services to build a new certification programme.

"The purpose of a certification programme is to validate a person's knowledge of their job," she explains. "I've been fortunate in my IT career. I've been able to maintain a less formal approach to work and have also discovered that my outgoing personality and my Lit & Phil debating skills have come in very handy," she concludes.



Rachel Guerin (BBS 2010, GDip 2011) and Tony Foote (BBS 2008)

Rachel and Tony met as undergraduates at UL in 2008. "It was the University Concert Hall that brought us together, we both worked there part-time as front of house staff." Following their wedding vows in 2015, the couple returned to the campus for some big day photography. They are working and living in Dublin, where Tony is business controller for Google Payments, while Rachel is on a career break from teaching. She is beginning a career with tech company, Zendesk, working in their finance team.

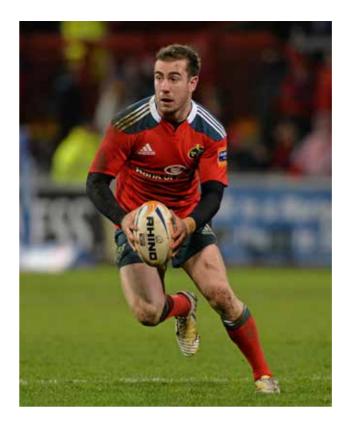


John V Healy **BEng (Electronic Engineering) 1990**

Based in Phoenix, Arizona, John is vice-president and general manager of data centre network solutions in the Data Centre Group at Intel Corporation. A specialist in network transformation, John has more than 25 years of leadership experience in the communications industry. The Limerick man first joined Intel in 2001 in Shannon, initially serving as marketing manager for network processors in the Europe, Middle East and Africa regions. Before joining Intel, John held various engineering management and business development roles at Telecom Éireann and Eircom Ltd. He is a chartered engineer in Ireland and a chartered European engineer. A member of the Institute of Electrical and Electronics Engineers, he is a regular industry speaker and writer on topics related to network transformation, softwaredefined infrastructure and NFV architecture.

An award-winning showbiz journalist, Alexandra is the founder and CEO of Goss Media - Goss.ie, GossGirl.ie and LAgoss.com. In addition to these entertainment websites, Alexandra is also a director, actress, writer and producer, creating short films and TV formats under her production company, Sweet Rose Pictures. Before launching Goss.ie in 2014, Alexandra worked as a showbiz reporter for the Evening Herald and Irish Mail on Sunday. She is a previous winner of the NNI [now NewsBrand Ireland] Showbiz Journalist of the Year. During her time in UL, Alexandra worked for the Limerick Post and Spin South West.





David Egan BSc (Industrial Chemistry) 1991

Originally from Carrickerry in County Limerick but now living in Amsterdam, David co-founded technology start-up Core Life Analytics. The company is based on data analytics software that was developed in his lab, the Cell Screening Core, at the University Medical Centre Utrecht (UMCU). Core Life Analytics has recently signed an exclusive agreement with UMCU for the rights to commercialise this platform, HC StratoMineR, as a cloud-based service. David says, "biologists are generating ever larger and more complex data sets. Our services make it possible for them to rapidly analyse their own data, so that they can generate the knowledge that is needed for the development of the cures of tomorrow."

Clodagh Cavanagh BBS 2003

As managing director of Abbey Machinery in County Tipperary, Clodagh runs the company founded in 1947 by her grandparents. Today, it is one of Ireland's most successful farm machinery companies, having recently moved to a 100,000 sq ft facility and exporting to markets in Australia, New Zealand, Saudi Arabia, United Arab Emirates, France, Iceland and the UK.

Clodagh joined the company in 2004 as a trainee accountant and took over from her father as managing director in 2012. Based in Toomevara, Clodagh was a finalist for the prestigious EY Entrepreneur of the Year award in 2016. She and her husband, Steve Smyth, are expecting their second child in August.



JJ Hanrahan BBS 2015

Kerry man JJ signed his first professional contract with Munster Rugby in 2012. The out-half spent three seasons at the club, was nominated for the IRUPA Try of the Year award and won the Golden Boot Award in 2014 for his kicking average. He also secured caps at Under 20 level for Ireland and was nominated for IRB junior player of the year in 2012. JJ joined English Premiership side Northampton Saints in 2015. Later in 2017, after two seasons with Northampton, JJ will be returning to Munster on a two-year contract.



Open Day



ICO hitting all the right notes in Austri

Reformation was the theme of the Irish Chamber Orchestra's March programme, which saw them dazzle audiences at the University Concert Hall before travelling to the prestigious Vienna Konzerthaus for a two-night appearance. They also performed at Heidelberger-Frühling, one of Germany's most celebrated music festivals.

Orchestra-in-residence at the Irish World Academy of Music and Dance, the ICO has a full schedule of performances that run from September to April.

Watch out for University of Limerick open days taking place October 19th and 20th, 2017. www.ul.ie/opendays





UL students make a good case in Canada

UL students Eoin Hann (third year Civil Engineering), Darren Feehily (second year Mechanical Engineering), Patrick Lu (second year Electronic and Computer Engineering) and David Monaghan (second year BBS), have become the first team outside of Canada to claim top honours at the International Engineering and Commerce Case Competition (ECCC) in Montreal.

In addition to being crowned overall winner, the UL team won Best Engineering Solution and Best Sustainable Solution awards.

The students were advised and mentored by Dr Vanessa Egan, lecturer in Mechanical Engineering and Dr Briga Hynes, lecturer in Entrepreneurship from the Kemmy Business School.



Two of the world's top 20 chemists are Professor Michael O'Keeffe (right) of Arizona State University and Dr Michael Zaworotko, Bernal Chair of Crystal Engineering and Science Foundation of Ireland Research Professor at UL. They are pictured before Professor O'Keeffe's lecture on Beautiful Geometry of Crystal Structures, as part of the Bernal Institute's Distinguished Lecture Series.

No Drought in Nicole's racing career



UL student Nicole Drought is moving up through the gears in her racing efforts.

The Roscrea native is firmly in the driving seat as the Irish Sportswoman of The Year 2016, presented by Sportswomen.ie.

Making her motorsport debut just two years ago, she became the first woman to be nominated for the Motorsport Ireland Young Driver Award in 2015. Last year, she became the first woman to win an Irish Touring Car Championship (ITCC) race. She was also named as driver of the month by Motorsport Ireland in September.

The former All-Ireland-winning camogie captain is a final year accounting and finance student at University of Limerick.

Boosting rural sustainability

More than €1m in EU funding has been awarded to Dr Bernadette O'Regan, senior lecturer and principal investigator working in the Centre for Environmental Research (CER) at University of Limerick, to develop a multi-stage Zero CO2 Emission Certification System, called ZECOS.

The aim of the certificate is to encourage and lead communities towards realising their energy efficiency potential. The project brings together a consortium of partners ranging from public authorities, private sector firms, universities, research institutes, communities and NGOs in Germany, Belgium, the UK and Ireland.



10 years of Northern Trust

Northern Trust have just celebrated 10 years in Limerick and the Mid-West Region with the announcement of 400 new jobs to be filled in 2017. Pictured are Hayley Munroe and Nidhin Stephen, who completed their co-operative education with Northern Trust in 2016. Northern Trust first partnered with UL on the co-operative education programme in 2007.

Producing carbon fibre from forestry

Researchers from across Europe. led by University of Limerick, have begun a project to produce carbon fibre from forestry by-products.

The LIBRE project, led by Dr Maurice Collins of the Stokes Labs, Bernal Institute at UL, aims to create carbon fibre materials in a cost-effective and more environmentally-friendly way, by producing them from a naturally derived wood product called lignin.

"Together, the project partners will create innovative materials and manufacturing processes capable of lowering the cost of end products by 30%, while cutting in half the CO2 footprint of carbon fibre production," Dr Collins says.

The project has been awarded €4.9m from the Bio-Based Industries Joint Undertaking under the European Union's Horizon 2020 programme.

sanctuary

The first comprehensive account of German-speaking refugees in Ireland pre-World War II has been compiled by University of Limerick academic Dr Gisela Holfter.

An Irish Sanctuary - German-speaking refugees in Ireland examines the extent the country offered sanctuary from 1933 to 1945. Dr Holfter and German historian Dr Horst Dickel conducted extensive archive research for the study, with unprecedented access to closed files.

German and Austrian perceptions of the country were not encouraging in the 1930s, as it was seen as a "poor and unstable country on the periphery of Europe", according to the investigation.

Some remarkable people arrived on these shores at the time. Erwin Schrödinger, who was head-hunted by Eamon de Valera, became the first director of the newly-founded School of Theoretical Physics at the Dublin Institute of Advanced Studies. Albert Einstein's first assistant Ludwig Hopf was also among those who moved here.

The researchers were facilitated by the digitalisation unit of the Glucksman Library at UL. Further publications as part of this project will include a book on Irish policy and public opinion about the refugees by Dr Siobhan O'Connor.

Advancing sensors in radiotherapy

Dr Sinéad O'Keeffe has secured a prestigious Royal Society-Science Foundation Ireland University Research Fellowship, one of only five awarded

As part of the Optical Fibre Sensors Research Centre within UL's Electronic and Computer Engineering Department, Dr O'Keeffe's research focuses on the development of sensors that will ultimately help radiation oncologists to develop improved and personalised treatment plans for patients.



Spotlight on pre-World War II





Pictured at the open evening in the North Campus Pavilion were Lynn O'Doherty, Education and Health and Gráinne Buicke, Newcastle West.

Postgraduate **Open Evening**

UL hosted its first Postgraduate Open Evening on March 8, which was attended by over 200 prospective students. A panel of UL representatives, including former Olympian and UL PhD student Jessie Barr and UL faculty members, including Professor Eoin Devereaux and BAFTA award-winner Brenda Romero, were among those who gave students an overview of life as a postgraduate student at UL. The event was also streamed 'live' on Facebook, so international students could tune in.

Changing mindsets in STEM

Celebrating International Women's Day, University of Limerick (UL) collaborated with Dell EMC to host an event exploring the challenges of 'Changing Mindsets' in the working world. The event, supported by Johnson & Johnson, was attended by members of the Mid-West business and education community and focussed on encouraging more females in to science, technology, engineering and maths-related sectors, as part of Engineers Week 2017. Pictured at the IWD 2017 event were, from left, Fiona McCarthy, VP for Human Resources, Dell EMC; Jim Breen, VP Johnson & Johnson; Dr Mary Shire, VP Research, University of Limerick; Joy Neville, former Ireland Rugby captain and Caroline Spillane, director general, Engineers Ireland.





Countering the software crisis

Lero, the Irish Software Research Centre headquartered at UL, is conducting research designed to counter an identified global software crisis.

Professor Brian Fitzgerald (pictured), director of Lero, notes one way to counter the "Software Crisis 2.0" bottleneck is through the adoption of agile methods to make software development faster, more reliable and higher quality.

"Most of today's successful companies, from music and booksellers to taxis and travel, are effectively software firms," says Professor Mike Hinchey, co-author of the Lero report, along with Professors Fitzgerald and Tiziana Margaria (UL) and Professor Brian Donnellan (Maynooth University).



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Gerard O'Halloran, Galway and Áine Blake, Dungarvan, both graduates of the Masters of Science in Health Informatics.