

Queen's 2030

THE GRADUATE SPECIAL EDITION

MOBILE LIFELINE

Why no signal
is no option in
a disaster zone





QUEEN'S
UNIVERSITY
BELFAST

STRATEGY 2030

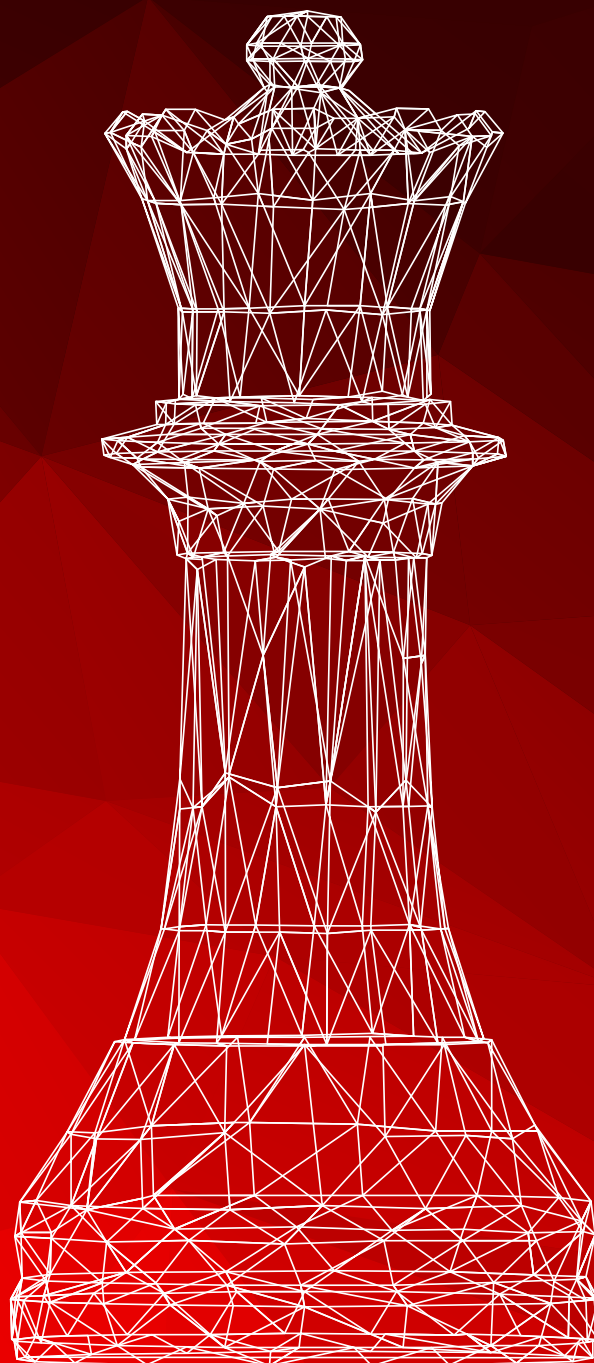
Since 1845, Queen's University staff, students and alumni have made a difference to societies locally, nationally and internationally.

Today, we are one of the UK and Ireland's leading universities and continue to shape and serve the world around us through our research and teaching

Strategy 2030 sets out our ambition for the next ten years to shape a better world through life-changing education and research across our disciplines, investing in our people, both students and staff, to ensure excellence and impact.

Our Strategy has been developed through extensive engagement with our community at a time of unique global crisis - the COVID-19 pandemic. To read more about our plans view strategy 2030 online.

go.qub.ac.uk/strategy2030



The Graduate Special Edition: Strategy 2030 – your briefing on how we're shaping a better world.

Words: **Professor Ian Greer**



Professor Ian Greer
President and
Vice-Chancellor.

This summer we set out how, over the next 10 years, Queen's will play its part in our region, our country and on the global stage. Strategy 2030 touches every part of our work, from social and civic responsibilities to our role in building economic prosperity through education and skills, and from our core work in research and innovation through to the building of our global reputation and partnerships.

And so this year, we have created a *Graduate* special edition, giving you the inside track on how this looks in practice (to read the strategy itself, please visit: go.qub.ac.uk/Strategy2030). From Professor Trung Duong's groundbreaking work on communications during natural disasters (page 8) to how our new building on Elmwood Avenue will support students throughout their time here (page 14), we hope you will find much to excite and inspire you.

As a valued member of the Queen's community, we want you to know what the future holds for the University – but we also want you to lend us your support.

So don't just read about Marilina Cesario's research (page 12) or the role of Queen's in the new City Deal (page 2), discuss it with your family and friends, share the contents of this magazine with colleagues (all articles can be found online at darq.qub.ac.uk/Graduate2030), and get in touch to tell us what you think. ■

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We'd love to hear from you, so please get in touch: editor@qub.ac.uk

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YBM



BUILDING THE

The Belfast Region City Deal is all about good jobs and better outcomes. So what does Queen's bring to the party? Expertise, collaboration and community links – and in the case of the latest healthcare partnership, cutting-edge research and know-how that will deliver better outcomes for Northern Ireland and beyond.

Words: **Victoria James** / Photography: **Jess Lowe**

FUTURE

When 'Heather' was diagnosed with Stage 4 incurable bowel cancer, she decided action was better than doing nothing. "I was offered the chance to take part in a clinical drug trial that would keep things at bay, and I just felt that was a better option to 'nothing we can do,'" she says.

"I always liked the idea of trying clinical trials and have had a family member who had a great experience – my cousin went on a clinical trial a number of years ago and it has kept everything under control for him. If there were no clinical trials, I don't know where I would be. I remain positive – one day at a time and keep going."

The Phase 1 trial Heather [not her real name] took part in is just one result of an ambitious partnership between





Queen's and healthcare industry collaborators, and is part of the Belfast Region City Deal. Named iREACH – Institute of Research Excellence for Advanced Clinical Healthcare – the programme looks set to push Belfast to the forefront of global clinical trial provision. It will deliver not only better health outcomes for the region – and worldwide – but also jobs, much-needed new infrastructure and a host of other benefits to local people.

Professor Stuart Elborn, Faculty Pro Vice-Chancellor for Medicine, Health and Life Sciences, has seen the evolution of clinical trials over nearly 40 years. “There is a huge opportunity here in Northern Ireland to deliver more medical trials that will accelerate the availability of new treatments to people,” he says. “These will hugely benefit our local population but the studies we will be doing are multinational and have wider benefit.”

Such trials are already one of Northern Ireland's clinical strengths because of the joined-up nature of the region's health and social care record-keeping. But the City Deal will bring exciting new opportunities, says Elborn. “The ability to scale up early phases is crucial, because for every 10 drugs that go through Phase 2 [the first round of testing of the compounded drug on trial participants], only ➡

As we move out of Covid, we are growing our research across the whole disease landscape

Professor Judy Bradley,

Director of the Wellcome Trust-Wolfson Northern Ireland Clinical Research Facility.

about one makes it through. The investment required to get it to that point is expensive. But we'll be able to do those early phases better, because they'll be informed by population data. Northern Ireland can become a hub for early drug development validated in real patients."

Trials such as the one Heather is part of could change outcomes for one of the most common cancers, says Elborn. "For patients themselves, we know that people who are involved in clinical trials have better outcomes in terms of quality of life and opportunity," he says. But the benefits won't be confined only to those, like Heather, who take part. "There are societal benefits. This will increase skilled jobs in this sector. Northern Ireland has a vibrant history of start-ups with new drugs, and we can encourage even more, both home-grown and companies attracted to us." Elborn cites Queen's partner Celerion, a US clinical trials specialist that already plans to increase its jobs footprint in the region and which will bring some of its European roles to Northern Ireland. Another firm will expand from 50 or 60 jobs to twice that number.

"Our work also spans other aspects of the City Deal," Elborn continues. "For example, software companies are increasingly involved in health. One of Apple's interests is in health applications, such as tracking blood glucose on your phone. Tech firms will be able to use Northern Ireland as a 'living lab', so we get the benefit of being early adopters of new ways to deliver health and wellbeing."

According to Scott Rutherford, the University's Director of Research and Enterprise, all City Deals, including this one for the Belfast Region, are trying to do two things. "Firstly, they're about harnessing quality research to drive growth, and, secondly, that leads to the levelling up of a region of the UK," he says. "It's the government acknowledging that in the long term, the country's research base and capability is really good – and Queen's is part of that top group of universities. So, the goal is to use this amazing set of brains to make the UK more competitive."

"But at the same time, inequality gaps have widened across the UK. Yes, the economy has grown since the crash of 2008, but that has benefited a small number of very wealthy people, and the South East of England particularly. It hasn't meant anything for places like the North East, North West or Northern Ireland. This City Deal involves £350m from the government, matched by £350m from the Northern Ireland Executive, then stakeholders such as local towns and businesses, and Queen's itself contributes a further £300m to create a £1bn pot for the next 10 years. It's a once-in-a-generation investment, so it's really important we get it right."

JOINT VISION

The scale of the Belfast partnership is clear from the number of core participants: six councils, two universities, further education colleges and numerous partners from industry. "You've got to understand and listen to each other to co-create a vision and reach for a shared objective," says Rutherford. "It's hard – but you get a better product at the end of it."

Professor Judy Bradley, the Director of the Northern Ireland Clinical Research Facility was responsible, with colleagues, for creating a "joint vision on the focus of research during Covid" – one that mobilised the research community to ensure people in Northern Ireland had access to Covid clinical trials. "We were very successful in that delivery," she explains. "Now, as we move out of Covid, our vision is to build on our agility to restart and regrow our research portfolios across the whole disease landscape – and iREACH is a key part of the recovery plan."



The goal is to use this amazing set of brains to make the UK more competitive

Scott Rutherford,
Director of Research
and Enterprise.

Besides the major iREACH healthcare project, expertise from Queen's is enabling other industry partners to accelerate their innovation and create better products via the City Deal. The University has been working with Spirit Aerospace (aerospace is an important sector for Northern Ireland manufacturing) on new composite materials for aircraft wings. Lightweight, durable and flexible, these materials will make planes more fuel efficient, which is in turn good for the environment and helps towards the goal of carbon net zero.

And in the marine sector, Artemis Technologies came to Belfast last year as part of the City Deal, where it is working on battery-driven, lightweight boats that could one day be autonomous. Artemis and Queen's have a five-year programme that will see prototypes tested on Belfast Lough, and the resulting advances could find their way into everything, from water taxis and ferries to superyachts.

"These are hugely exciting programmes," says Rutherford. "They showcase the traditional marine and aerospace manufacturing heritage of Northern Ireland and of Queen's."

"Queen's has been here for more than 175 years," Rutherford says, emphatically. "We'll be here easily for another 175. We're an anchor in our region: we provide a home for great people and great ideas, we work with different partners and we train skilled people. We're always there through good times and bad times, and it's why we committed to the Belfast Region City Deal." ■

📌 **Find out more** about the Belfast Region City Deal at go.qub.ac.uk/CityDeal

From London to Lisbon, buses get society moving. Which is why we're working to ensure they are sustainable.

Words: **Juliana Early** / Illustration: **Anna Higgle**



Dr Juliana Early
(Management, 2006;
Education, 2007)
Deputy Head of School,
School of Mechanical
Engineering.

When I was at school, I was one of those kids who got the bus home every day. For seven years there was a group of us, from different towns, villages and schools, who sat together, talked and became friends. In Northern Ireland that sort of opportunity to meet and mix is really important. It's one of the reasons I believe that the public transport sector, and especially buses, isn't just about vehicles on the road. It's about what those vehicles and journeys make possible: taking people to school or to their jobs; providing opportunities for socialisation; getting people to their daily appointments. It plays a huge role in our society.

Four years ago, the conversation was largely focused on how we transition to battery electric vehicles, but we now see growing interest all around us in the role that hydrogen will play in our future transport systems. At Queen's, we are part of a large consortium with Wrightbus, Ryze Hydrogen, Grayson Thermal and Translink that has just been awarded more than £11m through the Advanced Propulsion Centre to examine these hydrogen economy opportunities. There are many questions to answer, ranging from the fundamental vehicle design problems right through to how we build sustainable and secure supply chains.

Our involvement in consortia like this accelerates the development process beyond what any one partner could achieve in isolation. For example, we're working together with Wrightbus to develop a prototype single-deck hydrogen fuel cell vehicle. It's had a really tight turnaround cycle – last December, that vehicle didn't even exist as a design. By this December, it will have been displayed to the world.

You hear about some academic and business partnerships where each group will email one another on progress and work at a distance. But that's not how we work. We're side by side in the business; the Wrightbus team has offices in our joint research centre here in Belfast. It takes time to establish that level of trust, but the resulting integration is what enables us to work out world-leading solutions together.

The technologies and strategies we've developed are already being used in vehicles in operation around the globe, and the next big step for us is how we respond to the hydrogen opportunity. I really enjoy being involved in something that genuinely touches people's lives – the fact I'm also solving complex physics and engineering problems is a side benefit!

Alongside these engineering puzzles, we also need to address the broader underlying challenges of the socioeconomic and environmental impact of our transport systems. How do we transition to these new technologies without disadvantaging parts of society in the process? The national transport surveys tell us that the people who rely on buses are predominantly from the lowest income quartile,

There's so much interest in the role hydrogen can play in transport

and disproportionately female or from disadvantaged groups. We need to ensure that these sectors of society are accounted for, and that their needs continue to be met.

So, as well as engineers and scientists, I work with colleagues from our School of History, Anthropology, Philosophy and Politics to make sure we have identified these barriers. My work might begin with modelling efficient energy consumption, but it also has to consider where the energy is coming from, whether its supply is secure, and what the impact will be on all users and stakeholders in those systems.

And these are vital questions, because if we can move public transport away from diesel, scaled up across the UK, we could save up to four billion litres of imported diesel, and prevent 3.2 million tonnes of CO₂ being released over the next 10 years. That could be a major contributor to achieving carbon net zero by 2040. ■

📌 **Find out more** about our world-class research at go.qub.ac.uk/SMAE21

Katie McNally wasn't destined for Queen's. Then a Pathway talk changed everything.

Words: **Victoria James** / Photography: **Jess Lowe**



Katie McNally,
(Law and Politics, 2021)
at the Junction café.

My family have always said I'm argumentative and should be a lawyer," says Katie McNally (Law and Politics, 2021), smiling. "But when I went into sixth form I was thinking of a fine arts career. I was struggling with the subjects I'd chosen and didn't put in the effort that I could, or should, have. I lost confidence in my ability. Then someone came to give a talk at my school, and everything changed."

That talk was about the Queen's Pathway Opportunity Programme (POP), and it changed Katie's life. This summer, she graduated with a degree in Law with Politics. "I wouldn't have gone to Queen's without the POP scheme," she says. "And I would have been doing a completely different degree subject. But with that talk, I thought, 'If I could do that, well, that's the dream'."

Having switched A-level subjects to include History and Politics, Katie learned that students applying through Pathway were permitted a grade reduction to the entry requirements. It's a small adjustment, but one which made all the difference. "Usually for Queen's you have to get three As, which felt unattainable," she says. "But on Pathway you could get ABB and that felt doable, and really pushed me to succeed."

Her determination was further boosted by the week-long POP summer school. "I thought, 'Wow, that will give me a real taster of the degree,'" she says. "We attended lectures and were taught and given study materials. We stayed in the Elms accommodation, and it really familiarised us with the university buildings."

It wasn't all work. The summer school group of around 30 students bonded during their week on campus. "We had a barbecue and we shared pizzas. It was so great. We had our academic interests in common, and of course, you knew people were from similar backgrounds because of the eligibility criteria. Everyone got along amazingly."

Eligibility for the POP scheme includes being the child of parents who have not attended university, and experiencing at least one other socioeconomic barrier to higher education. Katie, who is the first among her wider family to attend university, describes herself as from a "significantly hard financial background" and hails from the heart of Belfast city centre, in the Markets area. "When I started my degree, I was working two jobs on top of my studies. The Pathway bursaries really took some of the stress off."

As to what happens next, Katie hopes she'll soon have the opportunity "to travel for a bit and gain some experience – and think about what to do next". Those future prospects have been utterly transformed, thanks to her achievements at Queen's. "Law is always an option, but I don't think I'll go on and become a solicitor. The Civil Service is really appealing to me right now, because of the politics side of my degree."

"A lot of my course was tied into Northern Ireland specifically, and for the optional modules I chose one on divided societies, another on conflict and peace. That really interests me, because peace is something you have to constantly work at. I love working with people, and am fascinated by government policy – though I'm pretty sure I don't want to be a politician!" ■

📌 **Find out how** to give to the Pathway Opportunity Programme at go.qub.ac.uk/ChangeLives





When I started my degree, I was working two jobs on top of my studies. The Pathway bursaries really took some of the stress off



When the sky is falling in, it's even more important than usual that your mobile phone has a signal. Especially if you're a member of the emergency services. Yet often, those communications systems are the first to fail, costing vital hours – and lives. Now, a Queen's-led team is using drones to create a revolution in the way we respond to disasters, offering low-cost, real-time solutions to save lives and livelihoods. And it's all the realisation of one man's lifelong mission.

Words: **Sarah Woodward** / Photography: **Jess Lowe**

Opposite: Professor Trung Duong,
Queen's Chair of
Telecommunications,
in the Quad outside
the Lanyon Building.

Professor Trung Duong (Education, 2016) knows just what it feels like to be cut off by the weather. Growing up in Hôi An, in Central Vietnam, meant that when the ancient port flooded – which it did every rainy season – he would be confined to the house. Of course, teenagers need to stay in touch, so he and his friends rigged up a communications system.

“We weren’t allowed out, so we set up a network using condensed milk tins left over from making Vietnamese coffee, connected with the plastic string we used to fly our kites. Whispering into the cans, we could hear sounds over a distance of 10 metres or more,” he recalls. “But although we had fun during the rains, each year many friends and relatives lost their loved ones and their homes due to the flooding and storms.”

Thirty years on and Professor Duong’s response to natural disasters is rather more sophisticated these days, as Chair of Telecommunications at the Centre for Wireless Innovation, housed within the Institute of Electronics, Communications and Information Technology (ECIT). His work, however, is still focused on Vietnam, consistently one of the highest-ranking countries impacted by extreme weather phenomena.

“Restoring cellular networks and wireless connectivity is a key part of natural disaster rescue efforts, so that relief agencies can monitor the areas worst affected and get help to the people who need it most,” he says. “When a natural disaster happens, you need rapid response in real time to help locate victims for evacuation. The inevitable congestion on ➡

**When a disaster
is happening,
you don't have
the luxury of
waiting hours to
communicate**



mobile phone networks as people call their friends and relatives makes this difficult, especially when combined with power failures. But there are other communication tools available, ranging from mobile sensors networks to city networks and device-to-device transmission.”

BRING ON THE DRONES

Together with Vietnamese academic partners from Duy Tan University in Da Nang, Nong Lam University in Ho Chi Minh City, and Thuyloi University in Ha Noi, he has developed a cooperative communications system to integrate these alternative networks. The project began with the installation of a group of monitoring stations along the Vu Gia–Thu Bon river basin in Quang Nam Province. These provide real-time information to a central control system in the city, generating early warnings of rises in water levels.

“We spent six months installing 20 monitoring stations along a 100km stretch of the river,” says Professor Duong. “Working closely with the local authorities, we deployed them during the floods of December 2016 in Central and South-Central Vietnam and the system worked well. But by the next year many of the monitoring stations had been washed away by the sheer force of the river.”

It was then that Professor Duong and his colleagues in Vietnam turned to an emerging technology – unmanned aerial vehicles (UAVs), otherwise known as drones. “When we started the research six or seven years ago, drones were not widely used. But over time, it became increasingly obvious that UAVs could fly over large surface areas, taking real-time measurements and providing information about weather conditions, without the risk of being damaged by the floods. However, drones are expensive and their batteries did not last very long. With commercially available UAVs typically remaining airborne for approximately 30 minutes, we would need so many of them that it would be impractical as well as unaffordable.”

Convinced, nonetheless, that drones were the answer, Professor Duong and his combined team of researchers collaborated on the Catastrophe-Tolerant Telecommunications Network project, aimed at improving the communication systems of UAVs. Awarded several research grants from the Newton Fund since 2015, they set out to develop a new communications protocol using contemporary wireless technologies, and then later with the drones.

“When a disaster is happening, you do not have the luxury of waiting hours to communicate with rescue teams on the ground. Seconds count, and any fast and high-quality communication will do. In wireless communications, optimisation techniques are already used to choose or update the system parameters, to optimise network performance. However, these optimisation algorithms typically solve problems minute by minute or even longer. We proposed the optimal real-time resource allocation scheme for the drones to ensure the optimal flight time, trajectory planning and energy consumption.” The real-time resource allocation algorithm developed by Professor Duong and his colleagues in Vietnam effectively reduces the running time to milliseconds.

SAVING LIVES – AND LIVELIHOODS

Not only is the rapid response vital for the emergency response teams, by drastically cutting the time involved, but the amount of resource used by the UAV, such as power and bandwidth, is optimised, which in turn brings costs down. “This will be important to address the real-time constraints in wireless communications for drones. Once we are able to travel and demonstrate their effectiveness, I am confident that with this new communications protocol for UAVs, using our optimal resource allocation algorithm, we can provide a low-cost, real-time solution which will help to save both lives and livelihoods.”

Meanwhile, he hopes that his work on 6G technology will continue to provide improved communication during natural disaster events, with the potential for global rollout. “Wireless 6G technology will offer low latency and resilient communication that is essential to ensure rapid network recovery during a crisis – and our research will continue to provide the means.” ■

Better together – our research is critical to solving the world's grand challenges and wicked problems.

Words: **Sarah Woodward** / Illustration: **Anna Higgle**



Professor Emma Flynn
Pro Vice-Chancellor
(Research and Enterprise).

What gets me up in the morning? Simple. It's that the research done here at Queen's makes a difference to people's lives. Academics are agents of change – whether that's a groundbreaking treatment for cancer or a new way to create jobs and bring communities together. But that change doesn't happen by accident: a clear vision, and a focus on putting that vision into practice, drives forward everything we do.

Queen's is home to world-leading experts in many fields: cyber security; achieving sustainability in conflict areas; creating intelligent autonomous manufacturing systems; and balancing food inequality and supply chain – just four areas where the pandemic has highlighted the need for shared expertise. My job is to make sure we keep translating what we do into meaningful outcomes, be that through social enterprise or company spinouts. We need our excellence in blue-sky research to be able to do that, but we also must keep asking the questions: what is the point of what we do – and who will benefit?

It can be making a difference at a very local level, where our enterprise and know-how helps communities. A good example is our leading role in the Knowledge Transfer Scheme through Innovate UK. A Knowledge Transfer Partnership (KTP) is a three-way partnership between companies, graduates and academics, and for a number of years we have achieved the most KTPs in the UK. We have great reach, not only in Greater Belfast but across Northern Ireland, and through the KTPs we have built up an important network for the exchange of ideas with industry across the region.

And that reach extends beyond this region: we also have many research strands across the island of Ireland and with GB, and are currently involved in 74 EU projects involving North-South cooperation, with another 36 awards

Queen's is home to so many world-leading experts

from the US-Ireland R&D Partnership Programme. It is important that we continue our strategic approach to research and enterprise and share our knowledge of issues around healthcare data, peace and security, and sustainability across these islands.

And, finally, I never lose sight of the importance of collaborating on the global stage. We are one of the best-connected universities internationally, with strong institutional ties to the US and Canada, China, Brazil, Vietnam and South Africa as well as Europe, and I am working to build on our global network.

Sixty five per cent of our research papers are co-authored internationally and we have more than 200,000 alumni in 120 different countries. As part of our strategy, we are hoping to establish an Innovation Centre, open to undergraduates, academics and alumni, to provide an international forum for the exchange of knowledge. Our aim is to draw our undergraduates out into the world of work and business through networking and building on common experience, while also drawing our alumni back in to share their experience and provide mentoring.

Our strategy is very integrated, from the R&D Innovation Space through to the Education Space, and we are seeking to nurture a mindset of innovation and entrepreneurship. By focusing on our priorities, the strategy helps me to identify who we need as our key partners around the world. In 10 years' time, I want us to be known internationally as the university that makes a difference in critical areas, working in partnerships to achieve our aims. Together, there are so many things we can do to improve people's lives around the world. ■

↑ Find out more about Queen's research at go.qub.ac.uk/Globalimpact

Medieval historian or physicist? The hunt for Planet Nine has made Marilina Cesario a bit of both.

Words: **Sarah Woodward** / Photography: **Jess Lowe**

By profession, Dr Marilina Cesario (Education, 2012) is a medieval historian. But in her heart? She's a natural detective. And she's hot on the trail of her latest target: the hunt for Planet Nine, a hypothetical planet whose gravitational effects could have an impact on the set-up of our own Solar System. What's an historian doing poking about in the Physics department, you ask? The search was prompted by Cesario's discovery of a similarity between the way shooting stars and comets were described in manuscripts, mainly by monks, more than a thousand years ago, and later descriptions of the Northern Lights by the early 20th century Norwegian polar explorer Fridtjof Nansen. Both seemed to be describing the same thing.

"An observer in the Anglo-Saxon Chronicle for the year 793 wrote about a fyrenne dracan in the sky, which he associates with the sack of Lindisfarne by the Vikings," she explains. "He describes 'fiery dragons' in the same way Nansen wrote of his own experience: a sight 'flashing in matchless power and beauty over the sky in all the colours of the rainbow! ... And now from the far-away western horizon a fiery serpent writhed itself up over the sky, shining brighter and brighter as it came'."

Cesario consulted astrophysicist colleagues on dates and, although the Aurora Borealis is difficult to predict, all the solar cycle hotspots matched to show the early chronicler was describing the Northern Lights. At which point she was approached by Queen's physicist, Dr Pedro Lacerda (Education, 2017), who was working on the elusive Planet Nine.

"When Pedro asked me to help with his research on Planet Nine, I was fascinated. Planet Nine is not visible to astrophysicists. Its existence cannot be confirmed by direct observation, but is hypothetical, based on our knowledge of gravity. We know comets are affected by gravity and may change their orbit. So, Pedro asked me to look at incidences of comets in texts from the 9th to 12th century."

Cesario studied a wide range of different sources to compare with Lacerda's data. As well as studying the Anglo-Saxon Chronicle, she examined descriptions in manuscripts from the Carolingian period of Charlemagne and his heirs in the 9th and 10th centuries. She also studied the Russian Chronicles. "The medieval period in Russia is much later than the European one, but they are geographically helpful when you are looking for references to the orbits of comets."

She and Pedro worked independently and then compared results. "We found that the mentions I gleaned from the manuscripts matched the dates of the comets and eclipses Pedro knew of from his work in astrophysics incredibly accurately. I even found a couple of references to periodic comets he and his colleagues did not know about. And his research helped me make sense of some of the more oblique references in the manuscripts."

The research has so far been awarded funding through the APEX award (which focuses on excellence in cross-disciplinary research) to further explore mankind's understanding of the cosmos in the Middle Ages, in the context of the search for Planet Nine. There is more work to be done. And Cesario is keen to expand her research into the Asian and Chinese manuscripts of the period, for which she needs to bring in more experts.

"As a medievalist, you need a lot of different skills – the work is inter-disciplinary by its nature. I get bored easily, but I love the detective trail. My timeline is over the thousand years of the medieval period, while that of Pedro and his colleagues goes back billions of years. But they share the same desire to understand the cosmos as the medieval chroniclers I study, so we're all trying to piece the story together." ■

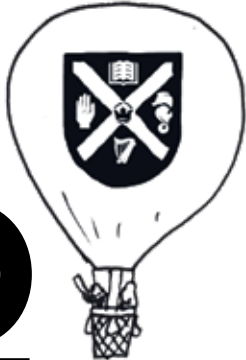


Marilina Cesario,
Director of Graduate
Studies in the School
of Arts, English and
Languages, pictured
at the McClay Library.





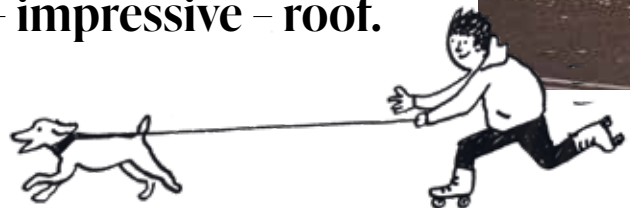
**The existence of
Planet Nine could
be confirmed by a
writer from 793 CE**



ONE ELMWOOD: A VISION OF THE FUTURE

Get ready for a revolution in the Queen's experience, as student services and activities are brought under one – impressive – roof.

Words: **Lucy Jolin** / Illustration: **Harry Malt**



When is a building not just a building? For Queen's students, the answer may lie in the unveiling of a new purpose-built facility that brings together all University student services – and the Students' Union (SU) – under one roof, and which is set to revolutionise the student experience.

"The old 'students' union' was there for 50 years and was somewhat outdated," says Wilma Fee (Modern History, 1978), Director of Academic and Student Affairs. "We knew we needed something far more ambitious

that would meet the needs of today's students. This generation are entering a fiercely competitive job market, they usually work while studying, and they still want to socialise, gather and access the services they need. That's not easy when those services are scattered far and wide across campus, making it hard to find them – or even realise they exist.

"Over the past few decades, the development of professional support services for students has grown significantly, giving the University cause to think how we could better use our estate to bring together both





the SU and professional support services into one easily accessible facility to support the changing needs of current and future students.”

Enter, then, a brand new building, One Elmwood, which has student experience right at the heart of its design. “When we started thinking about the new building, we looked at what 14- and 15-year-olds would expect,” says Caroline Young, Director of Student Plus, who was involved in writing the original brief. “This building is for their future. So, we looked at how they use technology, their digital footprints, how we bring

in sustainability. And we found, also, that in today’s digital society, it can be hard for young people to engage. We need to help them do that and show them where to find information.”

While one student might be very driven to discover career information, Young points out, another might not engage with the services as they simply don’t know where to find them.

“One Elmwood has been designed to be open and accessible, so that students can broaden their experience – from finding a new career to hanging ➡



out with friends from all cultures and from all over the world. Students who commute and have gaps between classes will have a place to go. It will be a place for the local and the global community and there will truly be something for everybody.”

TEST BED FOR THE FUTURE

That new accessibility ethos runs through the £40m building’s design. It’s a stunning, light-filled glass box, open to all, where any passers-by can see a hive of activity within. You might see students working on a sustainability project, a tech giant hosting a graduate recruitment initiative, or a club or society event. But that glass also reflects the University buildings around it, including the iconic Lanyon Building. Inside, a ‘lazy’ staircase winds its way through the entire building, with spots to sit along the way.

The former SU building had plenty of space, but much of it wasn’t used regularly. Part of the new building will include a new Mandela Hall, a large multi-purpose space which can be used for social events or visiting groups, but also major administrative activities. And there will be the SU shop, cafés and the Union bar. One Elmwood will also be used as a test bed for future innovation, such as, for example, launching a student’s business, with support from Enterprise SU and the University Careers and Employability Service. “We want students to feel like they own the building, and they can play a part in it,” says Young.

On the first floor, the ‘Cube’ will host development and employability activities, while essential student support services will be at the furthest point of the building. Students will have to cross the entire building in order to get there – and they’ll see everything on offer along the way. Student wellbeing services, such

as counselling and sexual health clinics, will also be far more visible and accessible.

“We’d love our students to get involved in as many things as they can and be as engaged as possible during their time here,” says Ciaran Higgins, Director of the Students’ Union. “And a one-stop shop, where University Services and the Students’ Union are collocated, will help facilitate that. Before, you would walk into the old building and the range of services wasn’t visible. In the new one, perhaps you come to get your student ID or for a counselling appointment, but you see some friends and stay for a coffee. While you’re doing that, you might notice an event going on which interests you or see a society you’d like to join. So, you come to the building and you stay in the building, and engage in a vast range of services.”

Wilma Fee is looking forward to the day when One Elmwood becomes part of the landscape, just like the Lanyon Building is. “I think that the students will be intrigued by this beautiful new building. At night, it will be lit up and it will be spectacular. I can’t wait to see that. And we are all looking forward to seeing the students arrive. They will be the ones that truly bring this building to life.”

Students’ Union President Katie Ní Chléire says that she can’t wait to make the most of the opportunity to do so much more. “I’m so looking forward to having this new space – for collaboration, for campaigning, for activities and for just hanging out with your mates. It is going to be a fantastic facility that students will benefit from for years and years to come. We want everyone to stop by – students and alumni alike. We welcome everybody!” ■

📍 **Find out more** at go.qub.ac.uk/campus21

What is a Queen's education for? It's about preparing students to fill roles that may not even exist yet.

Words: **Helena Pozniak** / Illustration: **Anna Higgle**



Professor David Jones
(Pharmacy, 1985)
Pro Vice-Chancellor for
Education and Students.

Queen's today is a very different place from the University I attended some 40 years ago. We have made some key educational decisions, and our students now have fresh opportunities – to learn differently, to prove their abilities in new ways, and to develop themselves to be ready for new economic and societal roles that might not even exist yet. So what does it mean to receive a Queen's education? At the heart of our strategy are our students, and the changing demands of a modern world. We've listened to what students want, and also what employers need. And, often, this is more than a 'traditional' degree.

We plan to widen learning for those students who want it. In the future, we will allow undergraduates to study a new area alongside their main subject – in what we call 'thematic minor' degrees. You might be a scientist who wants to learn more about sustainability, or a humanities student with a desire to understand the digital world. This pioneering approach will give students an understanding of the wider landscape.

Today's world needs people who can communicate with each other, both verbally and in writing, who can work together effectively, produce high quality outputs to tight deadlines, or multi-task with ease. Scientists need to write complex documents; humanities graduates must be able to handle data. Teamwork is one of the key skills for graduates, and one which we embed successfully in our programmes.

These are the skills we have entrenched across Queen's degrees. We want disciplinary excellence, but we also want to give the opportunity for students to develop these fundamental skills before they leave university. Students acquire these in a number of ways: by working on enterprise projects together; by tackling generic or specific problems in groups; or they might choose to pick up extra modules to develop their knowledge and skills base, for example. These key skills are examples of the key attributes required from graduates to bring Northern Ireland's economy to the next level as the pandemic subsides.

Over the past decade we've witnessed a massive change in who we educate. There are now more than 3,500 international members of our community, from researchers through to undergraduates. And they've brought a different perspective to our Northern Irish institution and to our traditional home

We plan to widen learning for those students who want it

student body. And now is a wonderful opportunity to expand our presence in the world, welcome more international students – though never taking places away from local students – and expose our home students to wider diversity.

Education doesn't finish when student days are over, and we want to equip graduates with the capacity for lifelong learning. Many jobs don't require a particular degree, but need a specific type of person who has the required skillset to adapt to different challenges over their employment lifetime.

So many jobs in Northern Ireland have been hit by the pandemic, and at Queen's we've worked hard with the Department for the Economy to provide a more flexible postgraduate choice for those affected by Covid-19. We've made several courses more accessible through online delivery and available as a range of qualifications.

As Northern Ireland recovers from Covid-19, we'll need an educated population ready with up-to-date skills. Over the next decade, jobs will emerge that we haven't even heard of yet. And our graduates will be ready for them. ■

📌 **Tell us what** you enjoyed most about your Queen's experience via email at alumni@qub.ac.uk

Alan Waite,
Senior Manager in
R-City leadership
training, pictured at
the Graduate School.



When Queen's reached out to a diverse group of youngsters, the results were life-changing.

Words: **Helena Pozniak** / Photography: **Jess Lowe**

H

ow do you give a group of Belfast teenagers self-confidence? Take them to the townships of South Africa. It might sound an unlikely way to solve the problem, but it is just one of a series of innovative programmes from Queen's that is raising expectations in surprising ways.

The South African trip was the culmination of a programme that brought together young people from some of the most disadvantaged streets of Belfast with Queen's postgraduates they may live alongside, but with whom they appear to share little in common. "These are young people who've always been at the bottom of the pecking order," says Alan Waite, senior manager at R-City, a charity which engages and develops young people from north and west Belfast. "And they were encountering postgraduates from the biggest university in the country which is right on their doorstep. They were worried they'd feel stupid alongside them."

But on arrival in South Africa, it was the Belfast teenagers who found their feet first. "Our young people are so far ahead in terms of social skills and able to engage with others on a personal level, that talking to people was second nature to them, and they realised that they had something to offer. The postgraduates hung back for a few days, watching our students. And that was the start of a really positive partnership between ourselves and the University."

Teenagers from north Belfast's divided communities come together at R-City and quickly learn they have more in common than politicians might believe. Founded in 2013, the group has some 200 young people from 14 upwards, and thanks to Queen's, the collaboration has been pivotal in breaking down barriers.

The University has been driving the development project, financing an accredited programme in entrepreneurial practice for both postgraduates and R-City students. "The impact on our young people was massive, just phenomenal," says Waite. "They passed with flying colours. At the graduation event in the impressive Graduate School at Queen's, one of our least confident female students made a full speech – that just showed the journey she'd been on. It made them feel Queen's was achievable and accessible, not a pipe dream."

And in turn, Queen's postgraduates have learned more about the city beyond the University quarter. "North Belfast is the most disadvantaged area in the country, with lower life expectancy and the highest suicide rate in Europe," says Waite. "But our young people are phenomenal." And they took the Queen's postgraduates around their home streets of Shankill and Ardoyne areas of Belfast: "They show them the art, the murals – but some of the dark spots too."

R-City plans to extend across the capital, and the ongoing support of Queen's will be pivotal for future expansion. All programmes, which focus on leadership, positivity and education and enterprise are already oversubscribed. From October, the University will accredit a leadership programme – "the prestige will mean so much to our young people and their families," says Waite. "The programmes will form part of a brilliant support network for our young people."

The University benefits from a diversity of perspective provided by the young people who take part in R-City. "They've got an opportunity to engage with our young people and get an honest, realistic view of the issues they face. They can really hear the voice of young people and let that shape where Queen's wants to go." ■



Our young people are so far ahead in terms of social skills and able to engage with others on a personal level – talking to people is second nature to them

📌 **Find out more** about other social outreach projects at Queen's at go.qub.ac.uk/society

Belfast, Northern Ireland... the world. The impact of Queen's extends far and wide.

Words: **Lucy Jolin** / Illustration: **Helena Hauss**

W

hen Isabella Souza McLaughlin came to Queen's in 2018 to study International Business and Mandarin, she was delighted to find not just native Mandarin speakers but also fellow students who spoke her second language: Portuguese. "I grew up in a small town in Northern Ireland and as someone who comes from a different ethnic background to the majority – I'm also Brazilian – it sometimes felt a little hard to fit in," she says. "Coming here, I've felt able to express myself more, feel more comfortable in who I am. And it's nice to have someone to speak the same language with!"

She's just one of the many home students attracted to Queen's as a place that welcomes students from all over the world; a place enhanced by partnerships with institutions from China to Chicago; and with world-renowned centres of excellence such as the Senator George J. Mitchell Institute for Global

A GLOBAL UNIVERSITY

Peace, Security and Justice and the Centre for Secure Information Technologies attracting students, staff and partners internationally.

But being a global university, says Professor Richard English, Pro Vice-Chancellor for Internationalisation and Engagement, doesn't just enrich the entire student body. It also benefits the city of Belfast, Northern Ireland itself – and the wider world.

"No university can operate alone in the 21st century," says English. "Of course, the issues that face Northern Ireland in particular are vitally important to us. But we should also be seeking global answers to big problems that affect everyone, from our partners all over the world. Our research examines issues such as food security, cybersecurity and conflict resolution. The coronavirus pandemic, in particular, has shown how we can't solve these problems by ourselves. But Queen's plays a particular role for Northern Ireland, too. It is one of the more likely organisations both to send people out into the world and also to bring people here."

Yi Kang Choo (Law, 2021), recent Allstate Queen's Student of the Year, is one of those people. He first heard of Queen's when academics from the University came to give a talk at his school in Malaysia. "I was attracted to Queen's as it is a Russell Group university with excellent academic content and facilities," he says. "But I was also very keen on the holistic student experience and the chance to be on a campus close to the city. There are around 200 Malaysian students, which is great, but I've had the chance to meet many local students as well and I really feel the friendliness."

He believes that a global outlook is crucial to the study of Law, and has now undertaken two paid internships arranged through the University, in Belfast and London. "As a Law student, the magic happens when you discuss, think critically and analyse how you can improve the law."

"Having different points of view and inputs is crucial to that. The world is so interconnected nowadays, and I think it's so important for us all to be flexible, respect each other and support each other."

McLaughlin agrees. "My Mandarin teacher is fantastic, and I've also been able to meet and get to know Chinese students who don't just help me practise the language but also help me to get to know the cultural background of China. Using our language exchange, we meet and talk about lots of different topics – for example, I might ask about a phrase I've heard in a Chinese drama and what it means. Or I might tell them about our sports, like hurling, or give them an insight into the history of Northern Ireland."



No university can operate alone in the 21st century

Professor Richard English,
Pro Vice-Chancellor
for Internationalisation
and Engagement.





And there is an economic as well as an educational and cultural benefit to being global, too. “People are sometimes concerned that bringing international students to Queen’s restricts opportunities for students from Northern Ireland,” says Professor English. “But in fact, it’s the opposite. International students don’t have any effect at all on the numbers of home students we can take [this number is set by government] – indeed they bring much experience and insight. Our international partnerships, too, boost the University’s economy. An organisation which partners with us for research may then choose to do business here, bringing jobs.”

Northern Ireland is the world’s top region for foreign inward technology investment, and Queen’s global outlook is highly attractive to firms eager to partner up on research projects and develop new technologies. While cybersecurity is a key area of expertise, the

We should be seeking global answers to the big problems that affect everyone

creative arts is another growth area, Professor English points out. Belfast has become a centre for film and TV production, most famously *Game of Thrones* – an unsurprising creative boom when you consider Queen’s association with writers such as Seamus Heaney, Paul Muldoon and Anna Burns.

“You can’t switch on the TV without seeing a thriller that’s filmed in Northern Ireland,” says English. “Some of that and other important work has involved writers involved with the Seamus Heaney Centre, which now has visiting fellows that have included *Line of Duty* creator Jed Mercurio and *Derry Girls* creator Lisa McGee. It has been great to see many people discovering that Northern Ireland is a great place for global operators to engage.”

McLaughlin arranged to spend her placement year in China, but when the pandemic made that impossible, she secured a local role at Randox Laboratories in Crumlin, County Antrim, a global company improving healthcare using diagnostics technologies. “I use my Mandarin when talking to the team in China – they have been very understanding and helpful!” she says. “I’ve also had the chance to work on marketing projects that have been really interesting and challenging. It’s a great opportunity and I’m getting fantastic experience.”

And while the world comes to Queen’s, the University is also going out to the world. China Queen’s College, or CQC, for example, is a joint college established in partnership with China Medical University in Shenyang. This venture has led to 800 Chinese students currently studying in Belfast. In the Middle East, Queen’s is partnering with Dubai Healthcare to develop the Mohammed Bin Rashid University. It also has partnerships with universities in the US including Harvard, Johns Hopkins and Stanford. “I’m particularly proud of a major conference we held at Queen’s with another internationally renowned partner, the University of Chicago, on a very big theme: the human impact of global conflict,” says Professor English. “Both universities were present and there have been subsequent events in Chicago.”

At its best, he says, a university is where people find their lives transformed – by dialogue, education and the exchange of ideas – and you can’t have that unless you have international students, staff and partnerships; the campus is a place which draws on many different parts of the world. “Yes, there are challenges,” says Professor English. “We have to think about ways of being inclusive which might involve listening to ideas which are very different from our own. But perhaps universities should be where these dialogues start to take place, in a non-damaging way, and everyone here has worked very hard to make that happen. I’d love to see a sense of connectedness, of alumni across the world, reaching out and feeling part of a Queen’s family, wherever they are.” ■

📌 **Share this link** if you know anyone considering taking a university level course: go.qub.ac.uk/studyatQueens

Universities have the power to transform lives – locally and globally – and we want you to be involved.

Words: **Lucy Jolin** / Illustration: **Anna Higgle**



Nathalie Trott
Director of
Development and
Alumni Relations.

You got your degree, lifelong friends, fantastic memories. But once you've left, why should you care about what happens at Queen's? It's a fair question – but the answer may surprise you. Queen's has long been a brilliant place to study – but it's also so much more. This University has the potential to play an instrumental role in the growth and development of Northern Ireland – for both the local community, and the broader reputation and presence of Northern Ireland on the world stage. But we can't do it without you.

To make a difference, we need champions. We want to build a local and global community of advocates and ambassadors: people who will tell our story and understand who, and what, Queen's is today – our responsibilities and the challenges that we face. And that's where you come in.

Showing your support for Queen's is a way of showing that you care about the big picture: about education, a more diverse society and better job opportunities for all. It shows that you care about the future of young people, levelling social disadvantage, and advances in healthcare. And it shows that you care about lifelong learning: a place where people can discover new skills and hone the skills they have, whatever their age or background.

And it's not just about philanthropy (although if you do donate, thank you: your support is invaluable to this work). We're looking to create far more opportunities for alumni to get involved, from student recruitment to graduate employability and research. You could mentor a student or speak at a careers fair. Perhaps your organisation could partner with us to drive forward world-leading research in advanced manufacturing or cybersecurity, or work with us to discover new talent. All of these things make a huge difference to current Queen's students – and to the future we are shaping.

In short, we want to be more consistently present, both home and abroad. And that's why I'm undertaking to ensure that you are properly informed about what we are doing and how you can engage. And we're going to use what we've learned during the pandemic around connecting our community across borders and time zones, showcasing all the awesome things that Queen's is doing, wherever you are in the world.

So, if this resonates with you, there's one thing you can do right now to help: let us know how to contact you, especially electronically. We want to hear from you. We want your feedback, good and bad. We love it when you can advocate for us and recommend us to friends and colleagues. But the role of critical friend is just as vital as we move forward. If we have your email address, we can then send you our monthly newsletter telling you what we're doing, and if

If this resonates, there's one thing you can do right now to help

you use social media you can follow us there, too, for an even broader range of updates. If we send the magazine to your parents and you don't read it for months, let us know where you are now (and if they want their own copy too!). We'd love to try and plug you in to something fantastic and hear what you think about our plans.

We can do it. We have the numbers. In fact, we have 205,000 alumni. Imagine what we could achieve together if just ten per cent of you decided to get involved in furthering our goals and our mission. I'm excited about that. I hope you are, too. ■

📌 **Share your experiences** of supporting Queen's by emailing the Development and Alumni Relations team at alumni@qub.ac.uk

When Queen's set up its support hub for carers, Trevor Wightman immediately knew he wanted to get involved.

Words: **Helena Pozniak** / Photography: **Jess Lowe**

When his wife Carol was first diagnosed with cancer, Trevor Wightman accompanied her to hospital as a husband – but, he says, “I came out as her primary carer. Suddenly I was responsible for checking her temperature, her medication, that she was eating and moving properly, and keeping everyone updated – I was their eyes and ears in between hospital appointments. You’re like a hamster on a wheel. And there’s just no handbook.”

But carers need to be seen and heard too, he says, and that’s where Queen’s stepped in. When Trevor was approached by Dr Olinda Santin (Psychology, 2006; Medicine 2004/2011; Education, 2015) from the University’s School of Nursing and Midwifery to help set up a new online support hub for caregivers, he jumped at the chance. The Cancer Caring Coping hub, created by Queen’s and co-designed with carers, features personal stories and guidance in facing the emotional and practical fallout of cancer care and bereavement.

Research by Queen’s shows that carers’ health can be affected by their new role. They need information, support and to feel part of a community – caring can be incredibly lonely. “What’s important is that you look after yourself,” says Santin, who devised the resource and asked Trevor to contribute. As a man in his 60s willing to talk frankly about his feelings and unafraid to cry, Trevor was an unusual and valuable source of wisdom. “One of the strongest feelings can be anger,” says Trevor. “You need to know that’s OK and you’re not alone, whatever you feel.”

Most difficult times for Trevor and Carol came at the end of a round of chemotherapy. “You’d imagine you’d feel overwhelming joy, but the sudden lack of structure was horrendous; you’d just fall off a cliff.” He and Carol began to make the most of their free time – their last social media photos together shows them holidaying in Amsterdam, which was to be three weeks before she died at the age of 55. He credits the small charity, Charis Cancer Care, which helped him and Carol with counselling and therapy.

“Carol didn’t like the limelight – she was a quiet battler with a stock phrase, ‘It is what it is’, but she was keen for me to share our experiences and help others, and that’s why the work Queen’s is doing on projects like the hub is so important. I’m pleased she got to see a final cut of my video before she died, but sadly she never got to see the final website.”

On the day of the launch of Cancer Caring Coping in 2018, Trevor addressed a crowd of senior clinicians and managers about his time as a carer and bereaved husband. “I’m not religious, but it was as if Carol was guiding me,” says Trevor. “I’ve never done any public speaking before – it was a steep learning curve.” Medical professionals were moved. “A member of Belfast’s cancer unit, the Northern Ireland Cancer Centre, told me this was the first time she’d properly appreciated a carer’s point of view in 20 years of practice. She said to me: ‘It’s easy to focus on the patient and forget that there’s another person in the room.’”

Trevor has gone on to help Queen’s students at the School of Nursing and Midwifery to better understand the needs of carers. He’s also spoken to GPs, recorded a tutorial for student nurses and he sits on the Queen’s admissions board as a representative of the service users and carers’ group, to provide a carer’s viewpoint on undergraduate and graduate applicants. “The work I’ve been doing has given me a real sense of purpose,” he says. “I sincerely hope that the website has helped people – if nothing else, I hope it shows people that they aren’t alone in their various thoughts and fears.” ■



Trevor Wightman, full time carer for his late wife, Carol, photographed at Bob & Berts café in Belfast city centre.

↑ Find out more about the Cancer Caring Coping Hub at go.qub.ac.uk/CancerHub



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We understand that the causes closest to your heart are often personal, which is why you can choose to fund the area of research or education that means the most to you.

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HAVE YOUR SAY

As a Queen's graduate you are automatically a member of Convocation, a network including 188,000 fellow graduates, with the power to influence decision-making

Join us online for **Convocation's General Meeting** on 11 November 2021. In addition to debating motions and electing committee members, attendees will also hear about the University's key activities and future plans.

To submit motions, nominations or to find out more information contact:

Clerk of Convocation

Development and Alumni Relations Office,
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go.qub.ac.uk/convocation



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