Strategy Plan 2020-23

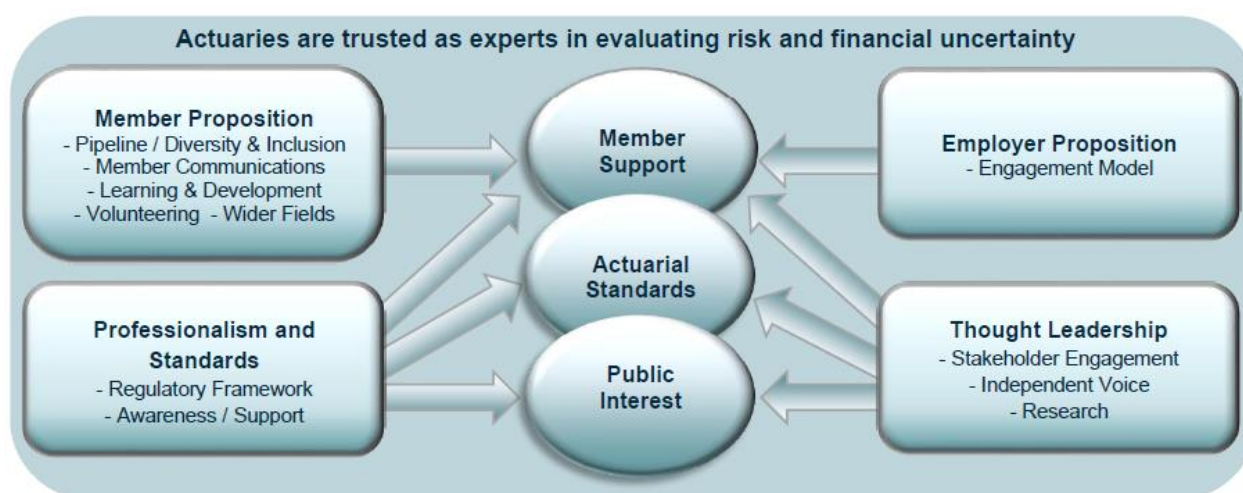**Actuaries are trusted as experts in evaluating risk and financial uncertainty**

Illustration of how the Strategy Themes and some of the key objectives align with the Society's Vision and Mission.

In July, the Society published its new Strategy Plan which sets out our direction for the years ahead. As part of developing the Plan, we have simplified our Vision and amended our Mission to explicitly recognise our public interest role.

Our **Vision** is that *Actuaries are trusted as experts in evaluating risk and financial uncertainty.*

Our **Mission** is to:

- *Support actuaries throughout their career so that they have the skills, attributes and knowledge appropriate to their roles and the current and future needs of actuarial practice;*
- *Develop, maintain and enforce actuarial standards that require actuaries to advise their clients with integrity, professionalism and objectivity;*
- *Serve the public interest by promoting thought leadership and contributing as an independent voice on matters where an actuarial perspective can add value.*

There are four Themes in the Strategy Plan with a supporting workplan to address each theme:

- Member Proposition;
- Employer Proposition;
- Professionalism & Standards;
- Thought Leadership.

The Society has also articulated its long term aspirations in relation to each of these themes. The Society's Committees are now working on their priorities and goals for Year 1 of the plan. There will also be a number of volunteering opportunities, including a new Working Group tasked with assessing the best way for the Society to engage with employers. Members are, as always, encouraged to get involved in the Society's activities if they have the capacity and feel they could make a contribution.

The full Strategy Plan is available here.

Sheelagh Malin, Vice President

CONTENTS

Sustainability and Climate Change Steering Group

Seemingly remote risks to our lives and livelihoods have never seemed so real as in recent months. These kinds of issues are at the heart of the Society's new Sustainability and Climate Change Steering Group. The purpose of this group is to provide a focal point for relevant expertise, complementing the Society's Committees as they consider the area, and ensuring any gaps are identified and addressed. The Steering Group intends to liaise closely with the main practice Committees as part of its work. Many actuaries have been working on topics related to or impacted by sustainability and climate change and it is an area of growing importance across the sectors we work in.

The Steering Group is developing a strategic action plan for the Society. For this, we have set up five sub-groups covering Education and Guidance, Research, External Engagement, Member Engagement and SAI Green Goals. We would encourage members to get in touch with feedback on how the Steering Group could support their work and the wider public interest.

The Steering Group will issue a survey in the New Year and would encourage members to participate and let us know their views. The Terms of Reference lists activities to be undertaken, including reaching out to external experts and public bodies. Any offers of introductions will be gratefully received. In addition, the Steering Group would welcome further volunteers to join the Group. Please contact by email to info@actuaries.ie.

Please keep an eye out for updates from the Group on the SAI's LinkedIn page in the very near future.

Eamon Comerford FSAI – Chair of the Sustainability and Climate Change Steering Group

Working Group on The Future of CPD

The Society has formed a working group on the future of CPD. The Society's CPD scheme in its current form has been in place for a number of years, and it has been deemed timely to review the scheme and consider how it can best meet the professional needs of both members and all the various stakeholders of the profession. It is intended that the review and subsequent implementation of modifications to the scheme will be completed in time for the commencement of the Society's next CPD period on 1 July 2021. The working group has been meeting regularly since September and one of its first actions was to gather evidence on the existing scheme, including member views. With this in mind a survey was issued to members to seek views on the current CPD scheme as well as ideas for potential changes to what the Society should require from its members in terms of CPD. The working group wishes to thank all members who have taken the time to complete this survey in order to ensure your views were heard as part of the review process.

Jenny Quigley FSAI – Chair of The Future of CPD Working Group

R and Python Study Groups

The R and Python Talks working group of the Data Analytics Committee has been running a study group which commenced on Monday 9th November 2020. Under the study group, participants have been working through the content of free on-line training courses. The members of the R and Python Talks working group are continuing to facilitate a weekly zoom session to discuss any queries or other discussion points that participants encounter as they work through the course content. The final session is on Monday 7th December. The proposal, depending on interest and success of the first study group in 2020 is to run two further study groups in 2021, commencing during Q1.

The initial study group that is currently running focuses on R. This course is aimed at beginner level where no prior knowledge of R is required, so it is still possible to accommodate some late joiners. Participants will need to have R Studio installed.

The course is offered by John Hopkins University on the Coursera learning platform and will cover how to program in R, how to use R for effective data analysis and dealing with practical issues in statistical computing which includes:

- Programming in R
- Reading data into R
- Accessing R packages
- Writing R functions
- Debugging
- Profiling R code
- Organizing and commenting R code.

Topics in statistical data analysis will provide working examples.

Further details of the course can be found here: https://www.coursera.org/learn/r-programming?specialization=jhu-data-science#syllabus

The subsequent study groups planned for 2021 will cover Python and more advanced statistical learning courses. It is possible to join the courses in 2021 without completing the course that is ongoing at the moment, although a certain level of knowledge will be assumed. In the interim, if you have not registered for 2020 courses, we would still encourage you to join these R study group sessions if you have an interest in the above topics. Please contact SAI Events for further details.

Jean Rea FSAI, Grainne McGuire FIAA and Bence Zaupper FSAI – Data Analytics Committee

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COVID-19 Personal Stories
I'm an actuary, get me out of here!

I'm an actuary, get me out of here! That's what I would have shouted if it would have done me any good, but not this time. I was on the third floor of Holles St and there was only one way out of this situation I had gotten myself into.

It was the 6th of April 2020, slap bang in the middle of lockdown. 10 hours earlier in a scene reminiscent of 1950s Russia, hubby had left me off promptly at 9am at the top of the granite steps leading into Holles St, handing me over to the uniformed guard sitting with his pencil and list of arrivals at his little school-like desk, all set behind a makeshift glass screen. Bag in hand, I said farewell and headed into the depths of the hospital.

At 8pm I asked if hubby could come in. "Oh no dear", the nurse chuckled "you are not in labour yet" What?! Then what the heck is this?! I could hear others behind paper screens quietly crying to themselves. No partners, no shoulder rubs, no reminders to breathe, nothing. We were all just going to have to get on with it. Not really a bad thing for me as I tend to make more of a fuss if I have a willing audience, but I felt for the others. He was allowed in at 10pm – I rang him up. "The party's starting" I said jovially, keeping to myself the reality. "Don't rush (rush!). Drive carefully (get in here fast!)". Doctor's letter in hand for the lockdown checkpoints, he started the 50km drive wondering if he would make it in time.

1am and we have a beautiful little girl in our arms. The challenges of earlier fade away. Tea and toast arrives – two cups, one each for new mum and dad. 2am the nurse says "It's time to go now" and off new dad heads on his own into the darkness. We didn't see each other again for 3 days. Me and the miracle are wheeled off, tired, exhausted, exhilarated. Like we had completed a marathon.

Photos: (Left) - Roma and Baby Suki.
(Right) - View from inside the hospital of a deserted street.

I looked out the window onto Merrion Square. No cars, no people. Just the traffic lights flicking from green to red and the pedestrian signal bleeping away incessantly to a deserted street. Holles St was a little safe cocoon in the middle of one of the strangest and for us, the most wonderful times in our lives.

Thanks Holles St, you and your team were amazing.

Roma Burke FSAI

COVID-19 Personal Stories
Considering Wider Fields

This article began with Darragh Pelly's interview in the [May newsletter](#). I read it and thought, there's an interesting guy doing something different with his actuarial skills, so I got in touch. It turns out he's also persuasive. The following Friday I was taking minutes for the Society's Banking & Aviation Finance sub-committee. Then I was asked to write an article about how I got on with the Law Society of Ireland Diploma in Aviation Leasing & Finance. I wasn't sure if I'd hit the ground running, as the committee so generously said, or tripped and fallen on the ground. I had an assignment due!

I took the traditional route to becoming an actuary – an actuarial undergraduate at UCD and a reporting role at a life company while doing the exams. My plan was always to start contracting in London as soon as I qualified. It didn't happen right away. I left Dublin and travelled through Africa and Asia with my wife. Near the end of the trip, in deepest India, she landed a job at Great Ormond Street Hospital. So we were definitely going, now I needed to find something. But Solvency II was postponed, the contract market was slow, and I'd just spent six months trying to sit in the lotus position. In the end I got in touch with an old colleague at Aviva and found a job in the reinsurance department. Permanent, but it was a new area, the work seemed interesting and the office was in the city. Off we went. Less than a year on and the contract market had picked up, so I started to look around. Internal Model Application Process, "yes, I can do that". Before I knew it I'd started my first contract. Great stuff, and it was. I learned a lot, worked with some great people and saw a super small business trying to manage a number of challenges. I know how contractors are sometimes viewed, but my experience is that with hard work the preconceptions can be overcome.

Fast forward five years, it's 2019 and we're back in Dublin. Not that we tired of London by any means, but circumstances changed. I'm still contracting but where is it heading? Six-month contracts for the next 30 years? Should I get on the path to CFO or CRO? That's certainly appealing, but I also started to look outside insurance for something new. I listened to a Society podcast with Aengus Kelly, CEO of AerCap, the global leader in aircraft leasing. Wow! I was blown away, what a career. How had I not heard of this industry? I told myself it was the years in London where it's not as prominent. I spoke with mates and it turned out I knew people working in the sector. There were also actuaries in the industry very willing to give advice.

Ireland is the global hub for aviation leasing and finance, with 14 of the top 15 global aircraft lessors having a presence here. More than 60% of the world's fleet of leased aircraft is owned, leased, or managed in Ireland. It all started in the 1970s with the launch of Guinness Peat Aviation by Tony Ryan. The more I read, the more interested I became. I did some homework on how to break into the industry and decided to get an edge on other aspirants by doing the Law Society of Ireland Diploma in Aviation Leasing & Finance. It's two and half hours of lectures one evening a week for six months, with four Saturday workshops.

I started the diploma on 30th January 2020. By the end of March, as Covid-19 spread, airlines had grounded entire fleets, with an estimated 18,000 aircraft parked up around the world. So not my best timing. But I really enjoyed the course. We covered the sale and lease of aircraft, legal issues, finance structures, regulation, repossession and, of course, tax. The lecturers are industry specialists. There were approximately 150 students, 20% of them based internationally. Even though it's a law course, it attracts a large cohort of non-lawyers, seasoned aviation professionals such as engineers who want to broaden their knowledge or bankers and accountants keen on the industry. Now even a few actuaries. The lectures went online following lockdown, which was a pity as I enjoyed being back in the classroom, but it offered great flexibility. There is usually an exam in person, but it became an assignment, submitted online. It was just before this that I got in touch with Darragh.

I don't have a neat conclusion to my story yet. I'm still contracting, with Aviva again as it happens, and enjoying it. The leasing industry has had rent deferral requests, but many lessors went into the pandemic with strong balance sheets. Some commentators think that with a challenged airline sector, leasing could grow in future as more carriers seek flexibility and money saving opportunities. Meanwhile, I've started the Executive MBA at UCD Smurfit, but more on that another time.

A final word on volunteering with the Society. I joked in the opening, but I've really enjoyed being part of the committee. We rotate secretaries and there was no pressure to produce this article. If you're interested in Wider Fields, get in touch or check out the publications on the Society website. There's also a lengthy list of courses on offer for anyone looking to break into fields such as aviation finance, data analytics, banking and international health financing. I'm certain that an actuary's analytical and risk management expertise can add considerable value in all of these areas.

Gerry McDermott FSAI – Banking and Aviation Finance Committee

Developing a Lexicon of Kindness & Inclusivity

Kindness is the language which the deaf can hear and the blind can see.
-MARK TWAIN

Nuance Matters

Numeracy is a requirement for entry into the profession. However, much of the latter part of pre-qualification training for actuaries is about combining actuarial skills of analysis and calculation with decision making and crucially with communication.

As actuaries develop, they acquire considerable fluency in minimising professional risk with nuanced language i.e. our written communication is characterized by subtle shades of meaning and expression. Any experienced actuary, for example, will know that there is an important difference between stating that an action is "not unreasonable" and stating that the same action is "reasonable" which is why one sees the former much more often in written reports than the latter.

But what has this to do with the lexicon of kindness and inclusivity?

Over the past five years I have worked with various community organisations who demonstrate kindness and live inclusivity in all they do; whether it is offering creative courses to adults with mental health challenges, empowering young girls from the travelling community, helping women and children who are caught up in the Direct Provision system or patrolling the river in Limerick City and intervening to prevent suicides.

What struck me immediately as being the common factor in all these groups is the combination of kindness, empathy and compassion. But, as I have observed more closely, I have come to the conclusion that, while empathy, compassion and kindness are essential ingredients in helping vulnerable people, these are, in mathematical terms necessary but not sufficient qualities.

What is also needed is the ability to communicate these qualities in an impactful way i.e. the need to develop, refine and implement a vocabulary of kindness and inclusivity. Coaxing someone on a river's-edge not to jump needs empathy for sure but also needs the right choice of words allied to good intent.

As actuaries, we need to develop throughout our careers a lexicon of actuarial terms and communication skills on top of the numerical abilities to become more impactful actuaries. We should also develop better communication, vocabulary and use of language to become more positively impactful human beings.

Over the past two years I have given a series of talks about mental health issues, latterly concentrating on the issue of how we as professionals can all create better mental health outcomes for our colleagues. In that time, I have learnt so much from listening to attendees including fellow actuaries in follow-up conversations about barriers that they have faced or continue to face. Much of the barrier is related to communication and language. And this feedback echoes conversations I have had with groups helping vulnerable or excluded people where vocabulary and language are common themes in relation to disconnection.

This article looks at how the language that we all use can be expanded to improve kindness and inclusivity in the workplace ensuring that we draw from, and get, the greatest contribution from the widest pool of actuaries and potential actuaries, and ensuring we make the workplace, physical or increasingly virtual, a much more welcoming place.

It examines the impact of silence as a barrier to understanding and inclusivity and then looks at examples of how, by applying the same level of thought to our verbal communication in the workplace as we do to written communication with external clients, we can develop a more nuanced, kinder, more inclusive and effective workplace.

It looks at examples of how silence and language can cause stress and make

people feel unwanted or excluded and how even relatively minor tweaks, implemented continuously, can improve the work environment for so many people.

The article looks at situations where

- People are returning to work after a prolonged absence – be it after illness or parental leave or career break
- People feel that their gender identity is not being recognised

and how developing a language of kindness and inclusivity can help.

The Sound of Exclusion

Understanding what Inclusion and Exclusion sound like.

To understand inclusivity and what it sounds like, one must understand exclusion and what it sounds like. Most of us are familiar with abusive language and how it stigmatises people, categorises and undermines people based on ethnicity, sexual orientation, perceived disability, political affiliation or religious beliefs. These issues are well-understood, recognisable and easier to deal with within a professional setting.

A much more insidious version of exclusion is the sound of silence. I spoke to a senior member of the profession who described to me the wall of silence that would appear when somebody was off ill due to mental health challenges. She described the feeling of observing senior managers leave a company after many years' service without even an announcement, a note of thanks or a leaving-do. The initial silence when

someone was off sick may have been down to a misplaced notion of kindness, but the message given by the silence and lack of recognition on exit was not only unkind but also devalued the contribution they had made to the company. The silence amplifies the exclusion and reinforces the stigma around mental illness.

The sound of silent exclusion has other tones, undertones and resonance. For someone who never recognises themselves described in the company work lexicon it is hard to feel that they are seen or even belong. It is heartening to see more multi-ethnic faces in advertising reflecting wider society but internally, is the language inclusive or does it fail to reflect the diversity of our colleagues?

It is worth considering whether our individual language in conversation generates silence by making people feel ashamed of sharing their sexuality or gender identity.

Personal Pronouns & Respect

Consider the feeling you encounter when someone calls you by the wrong name despite having introduced oneself. Didn't I tell them my name already? Why did they forget?

Michael ('Mike') Fitzgerald FSAI on his graduation day

Michael is my given name, but my parents and siblings call me Mike, my wife calls me Mick and in more hirsute days I was known as Mick De Hippy, Rasputin and Moses. As a result, I don't mind which of the many abbreviations/nicknames are used but I always see myself as Michael. On the other hand, my friend Emma Jane baulks at being called Emma as "it's only half my name" so once I became aware of this, I would never think of calling her Emma. It's a matter of respect.

Many people do not identify or live as the gender that was assigned to them at birth, and many of those do not identify as either male or female. References to "he", "she" or "he/she" in documents or in conversations are therefore often not adequate to describe all the people in the workforce. Similarly, a move beyond gendered terms can make a document or conversation more reflective of the diversity of families and relationships in our places of work - for example, a woman's spouse is not necessarily male, and a single parent is not necessarily female.

The same logic applies when it comes to personal pronouns. If a colleague feels that the pronouns "she" or "he" are not applicable in their case and lets you know this, then it is common courtesy to use their preferred pronoun once they have communicated their wishes.

A different approach to the use of personal pronouns may seem strange at first but respecting colleagues wishes should not be. Much like our individual names, pronouns are tied to our deepest sense of identity. Unfortunately, many of those who are aware of the importance of correct pronoun usage are often those who have most experienced the pain and discomfort associated with being misgendered. Utilizing inclusive pronoun practices in the workplace is vital in building organizational cultures of respect and belonging, not just for the LGBTQ+ community, but for anyone who in some way challenges the traditional model of gender identity and expression.

Welcome Back – Unconditionally

"Practice makes perfect" goes the proverb. We all know that the more often we carry out a task, the easier it becomes. One of the benefits of moving to more regular reporting is that the checklist of tasks to be completed is familiar and our brain's muscle memory remains finely tuned. Compare that to a task that turns up on an ad hoc basis every so often. I suspect that I'm not unique in finding these tasks more challenging as I try to remember how I approached it the previous time. I usually have to dig out the previous documentation and calculations to gain confidence in the methodology.

Working from home has taken a lot of getting used to for many in 2020, as we adapt to a new situation and a new working environment. Many have not fully adapted yet and there is recognisable stress associated with making that transition. The mental health fall-out from this year is yet to be tallied and it may only become fully evident over time.

Similarly, if and when we move back to the office, it is universally recognised that this transition will need to be managed.

But this adjustment from home back to work in the office is not a new phenomenon except in scale. Every month pre-COVID-19, individual employees have been faced with the herculean task of returning to offices after relatively long periods out due to maternity (and in some cases paternity) leave or through periods of absence due to physical or mental illness. I'm not sure that we as employers and colleagues have up to now recognised the stress involved at this difficult transition when it was an individual rather than an organisation involved?

Two conversations I have participated in come to mind when I think of this topic:

1. "My brain has gone to putty minding the baby – it's going to take a while to get myself back up to speed and I'm certainly not signing anything for a while"
2. "Don't come back into the office until you are fully right because we need you to be 100% from the get-go"

The first accurately reflects the difficulty of returning to a highly technical role after twelve months of broken sleep and dirty nappies. The second is too often the demand put on employees returning after a period of absence, and given the negative impact on professional self-esteem associated with a period of illness or other absence, is totally counter-productive.
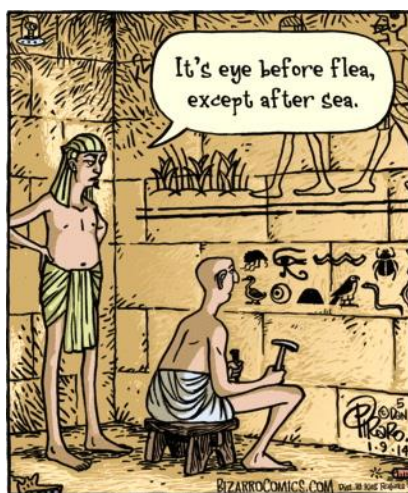
If we as a profession can recognise the challenge of switching between office and remote working and vice versa then surely it is time that we adopt a kinder approach and set realistic expectations for those returning to work after a long absence.

The first step is to recognise that it is hard starting back and state that explicitly. Think how much more human and motivating it would be for a returning employee to hear "It's natural that it will take you time to get back up to speed so don't be surprised".

Most companies have "buddy" systems in place and the first few weeks planned for new employees. It should be relatively simple to plan a similar system of support for returning employees which recognises the natural challenges that exist when one has not been doing one's job for an extended period.

After a talk on mental health last Autumn I was discussing this point with some people and one pointed out that during her maternity leave the company moved buildings and brought together staff from several locations for the first time. Coping with that change alone was intimidating enough even before dealing with the work in her inbox.

Language & Inclusivity

Bizarro Funny (Egyptian Grammar)

Over the past couple of decades our workforce has become more heterogeneous. It is now not unusual to work with colleagues in Ireland whose first language is not English. This can often prove a barrier to integration and a sense of connection for such employees. I was involved in the establishment of the Conversation Café: a monthly facilitated open-to-all conversation under the auspices of the Cork Central Libraries. Observing these sessions, I was able to see first-hand that by having discussions that are in their nature universal, those whose first language isn't English can be given room to let their personality and insight come through. And once that initial confidence is gained, they continue to contribute and become connected.

We can all readily apply this in the office to find common ground and make our new colleagues feel at home. I started work in the UK in the mid-80s knowing not a single person within 100 miles and still remember how the kindness of my English colleagues helped me integrate (once they understood the Cork accent). As a nation which has fuelled a large diaspora, it would seem only fair that we show kindness to those that are making a new life in our country.

Kindness & Inclusivity

Making colleagues feel included isn't always easy but considering the language we use, and its impact, is a vital first step. Asking ourselves the question "What language would make me feel welcome and able to be identified as part of the larger "We"" will help inform how you can express yourself in a kinder and more inclusive way. Even as we work from home, let's check to ensure that everyone feels that they are truly "in the room" and learn how to make it a more welcoming room for those who don't yet feel part of it.

Be kind – we all need it.

Michael Fitzgerald FSAI, D&I Committee

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6

Leading the Way in Wider Fields

An Interview with Bríd Quigley FSAI

Continuing our focus on actuaries operating in wider fields, I took the opportunity to catch up with Bríd Quigley (via a Teams call) to find out about her role on the Society's Diversity & Inclusion Committee, her new role on Council, and to see what else life holds in store after recently finishing up in Irish Life / Great West Lifeco after a 30-year career there....

Bríd Quigley FSAI, SAI Council Member and Chair of SAI D&I Committee

Kevin Manning: (KM): *When we think about actuaries working in wider fields, the Irish Life and Great West group of companies probably wouldn't be the first to spring to mind, but your career path has not been a traditional one.*

Bríd Quigley (BQ): I think that's a challenge and opportunity for the Society in some ways. When we think about how we support our members, our focus has traditionally been heavily on the core practice areas, as you would expect. And then when we have thought about wider fields, we tended to look to non-traditional areas like banking and aviation financing. However, we have quite a few Society members who are actuaries, working with insurers or other "traditional" actuarial employers, but working in non-actuarial roles. I think that for the Society to serve and connect to all of its members, we have to give consideration to those members too.

KM: *Give me a sense of your background and the path that led you to your most recent roles in Irish Life.*

BQ: I left school in 1990, back when there were no Irish actuarial science degree courses, and the standard route to becoming an actuary was to join one of the actuarial employers straight from school and start taking the exams. So I got a job offer from Irish Life. I'm not sure how much my decision to give it a go arose from the lure of a salary and new life in Dublin (coming from rural Limerick) versus wanting an actuarial career – bear in mind, I was barely 17 and there really was no grand career plan. Nowadays, I'd probably be finishing transition year at that age and probably not launching into a career that would cover the next 30 years! But I liked having a job, and the independence of working and living in Dublin, and having a pay packet of course. Probably too much initially, but after a couple of years of enjoying the student life and with some encouragement from the late Bruce Maxwell, who was the Company Actuary at the time, I knuckled down and polished off the exams. For the first 9 years or so of my career in Irish Life, I followed a fairly traditional actuarial path. Then in 1999, after doing some work on the product side of a significant systems migration project, I was asked to help out on the migration project itself which was in some difficulty. This brought me into a world of operations and IT – God forbid, even Y2K. I found I enjoyed it and was good at it, and it took my career in quite a different direction.

KM: *For people not familiar with your career history, give us a sense of where that path took you.*

BQ: Well from there it was full on operations, customer service, organisational change. I became a Lean Six Sigma Black Belt and immersed myself in that world. Roll on to 2013 and an opportunity came up to apply for the role of Head of Customer Service for the Irish Life Retail business. This was just after the acquisition by Great West Lifeco, and to be honest, I wasn't sure if it was a role I should go for. By then our three children had been born – they were aged 6, 4 and our youngest was only two and a half – and having been in and out on maternity leave 3 times over the previous number of years, my confidence in my ability and in my scope to take on such a massive role had taken a hit. I knew it would be very challenging – heading up a function with over 400 people in it, integrating three administration functions and teams, migrating two books of business and vertical integration into the Great West Lifeco world.

KM: *That confidence hit must be something that many people face coming back from maternity leave. How did you overcome that?*

BQ: It is a challenge all right for anyone who is out of work for any extended period, whatever the reason – whether it's maternity leave or sick leave or any other type of extended leave. In my case, I had 3 maternity leaves within 5 years and at a time when paternity leave in general wasn't yet available and/or taken. In addition to the disproportionate impact of maternity on women vs men, there is also lots of research out there that points to cultural, family and educational conditioning that also has a disproportionate impact on women's confidence in aspiring to more significant roles. In my experience, having good support at home is really important and I don't just mean around family responsibilities, but also around building confidence and providing encouragement. I would also stress the importance of sponsors and mentors – I was very lucky to have had a number of brilliant sponsors and mentors at various stages in my career, who saw my potential and saw it unencumbered by the fact that

I was a woman or by the fact that I was in and out on maternity leave over that period. Going back to the decision to go for the Customer Service role, I chatted it through at home and with some senior people in work and they gave me the encouragement I needed to recognise that I had the skills to do the role, and do it well. The interview process was tough. I think being an actuary helped in some ways, in that there is an immediate assumption that you have what it takes to get your head around the subject matter. There will be a sense that you have the smarts and the knowledge, but you have to prove yourself in terms of the leadership skills. Most of the focus of the interview process was on leadership skills, and I obviously did enough to convince them that I had what it took.

KM: *How did you find that role, and what led to your move from there into the IT world?*

BQ: I loved the Head of Customer Services role. As I expected, it was very challenging, and at times quite stressful. Roles like that show you how much personal resilience you have. But I also got to practise and develop my leadership skills in that role. Why did I move to IT? In part it was influenced by the fact that my husband David became CEO of the Irish Life group. We had each managed to have successful careers in the Irish Life world without really working closely together, but I felt it would be cleaner to move to a different area and the opportunity came up to take on a leadership role in the shared services IT business that serves all of the European businesses of Great West Lifeco – this was a good opportunity to test whether my operational / customer / leadership skills were transferrable

outside the life assurance world and also for me to learn more about technology.

KM: *The step from an actuarial role in an insurance company to the head of customer services role in an insurance company, feels like one step away from the actuarial world. Was it a bigger step to move to a completely different type of business unit and into the IT world?*

BQ: Yes, definitely. I certainly couldn't have regarded myself as any kind of IT expert, but the skills from the Head of Customer Services role in the life assurance business were surprisingly transferable. Even though the customer was now internal and for very different services, there were huge parallels in terms of the challenges faced and the skills needed – customer service, operational, people development, strategy, general leadership skills. Moving so far from an "actuarial role" was a bit of a wrench from a security point of view but I think I will always think of myself as an actuary. Maybe surprisingly, the actuarial skills transfer across strongly, even to the world of IT. You can forget, or take for granted, the skills that are ingrained through actuarial training. We are trained to be analytical and rational. I maybe assumed this was a skill that people naturally have or don't have, but moving into other areas I can see that it comes in part from the actuarial training. Actuaries have an almost automatic tendency to analyse and test different scenarios - asking what-if questions, analysing movements and looking for causes and patterns. In my time outside the core actuarial functions, I have come to realise that these skills aren't as common as you might think in other fields,

and those skills are hugely transferrable and important.

KM: *The Irish Life chapter in your career has recently drawn to a close - looking back on your time at Irish Life – what are you proudest of?*

BQ: I was very proud last year to win Business Leader of the Year at the Women in IT Awards. I felt that, in the shortlisted candidates, I was in the company of lots of heavy hitters and it was a recognition that you can be a mother to young kids, and have a partner with their own successful career, while forging a successful career for yourself and being a role model for other women grappling with some of the same challenges. Saying that, probably the thing I am most proud of is the role I got to play in leading the original development of the Diversity & Inclusion programme for the Irish Life / Canada Life Dublin campus businesses and how my own path gave many other people, particularly women, the confidence to go for it in their own careers, something that many people took the time to say to me as I departed the organisation. When I stepped up to run the Irish Life Retail Customer Service function, I guess people were wondering if it was possible with a husband who was senior in the organisation and with three small kids. One person told me that she was in a similar position, back in the workforce after having children, and assumed her chance at progression had passed. Seeing me take the risk and go for the Head of Customer Services role and having good career and developmental conversations with her were instrumental in her having the confidence to step up too. I did feel very proud to hear that feedback, and it

"With David and our 3 boys at Pride – wonderfully colourful and feel-good event to be part of – we loved it."

underscores the importance of role models.

KM: *Which presumably influenced your involvement in the Diversity and Inclusion committee with the Society?*

BQ: Eventually yes, but it came after spending a couple of years working on the D&I programme in work and trying to figure out how to make it a programme for everyone rather than just focusing on issues like gender diversity, which is a gap in the industry at senior levels and Boards, but not the only gap. We wanted a programme that everyone could feel connected to but which also addressed the clear gaps too. Over the last number of years, there have been some great initiatives – some that spring to mind are reviewing leave policies and bringing in 8 weeks of paternity leave, participation in Pride and broader education around LGBT+ issues, a number of initiatives and a lot of education around Mental Health. Probably the highlight for me was getting to co-facilitate a programme for female leaders called "Taking the Stage" – a programme designed to help women increase their leadership presence and tackle issues preventing them from achieving their potential. Over the time since it started, close to 100 women have been on the programme and we have never seen such positive feedback from any programme and you could literally see the participants grow in confidence and determination in front of our eyes. Many of them have gone on to be promoted or take risks in their careers to broaden their experience or position themselves to compete for higher roles. One of the themes that comes through the programme is how conditioning plays a role – how girls who show leadership at a young age can be labelled as bossy or how girls are more likely to be directed towards the softer careers and roles, an issue that featured recently in an article about the conditioning girls get around Maths. Anyway, I guess it was my involvement in the organisation's D&I programme that led to Nuala Crimmins, who was leading the Member Engagement Committee at the time, asking me would I be willing to get involved in the Society's Diversity Committee. At the time, I would say I felt a little disconnected from the Society probably because of having stepped away from the core practise areas but also a product of being so busy with work, home,

kids and so on for the previous number of years. I thought this was a good opportunity for me to reconnect with the Society and my profession while also giving something back and hopefully being able to bring some of the Irish Life experience to the Society's Diversity Committee.

KM: *What areas are you looking at through the D&I Committee?*

BQ: The D&I Committee started as a sub-committee of the Member Engagement Committee but, since September, it is now a full committee in its own right, reporting to Council. I also joined Council at the recent AGM so that D&I would be represented there. It feels like quite a different ask in terms of this being a professional body as against an organisation, however, I expect a lot of experience from the organisational D&I programme should be relevant to the Society's journey on D&I. As a start, we felt it was important for the Society to have a statement of intent on this area so we developed a Diversity and Inclusion Mission Statement which is published on the Society website. D&I also forms an important element of the Society's new Strategy. We have a number of areas we are working on at the moment including reviewing the make-up of our committees and panels for events and developing D&I-related sessions for the upcoming Graduation programme and for the Convention scheduled for December. We are engaging with the Professional Affairs committee and CPD Working Group on our Practising Certificate and CPD schemes from a D&I perspective. Mental Health is also a key topic for us. It could be argued that, compared to maternity impact on people and careers, Mental Health issues and impacts are less understood and less protected and so greater focus is needed to support our actuarial colleagues who are dealing with these impacts. And now, with the Strategy agreed and with the focus on Diversity & Inclusion in the Strategy, we are starting to plan for 2021 and on what we need to do as a Committee and a Society to achieve the vision and strategy as set out. It was also super, on the back of my recent step up to Council and in the context of my own journey in wider fields, to have been asked to be on the judging panel for the competition run by the Wider Fields Committee for college students on the potential uses of actuarial

skills in non-traditional areas. It was really encouraging to see the creativity of the next generations of actuaries in showing how actuarial skills could be used productively in the charities sector, government, sport and on the environmental challenges facing us all.

KM: *Finally, what's next on the agenda for you?*

BQ: I had 30 incredible years in Irish Life, and it feels strange after all that time to finish with a Zoom call, as necessitated by the current pandemic situation. While the Covid situation has been difficult for everyone and has been a strange time to find myself with more time on my hands but I am enjoying taking a breather and spending more time with the kids – they are growing up so fast. Beyond that, when I am ready to look for a new challenge, I would like to get out and do something different I might look at non-executive roles as a way to balance the time commitment with feeling challenged and making a difference. I am in the process of completing the Institute of Directors programme and am enjoying that, and with an actuarial background plus leadership experience, customer service and IT experience, I feel I have a lot to bring to a Board in this space. It could be an opportunity to help push the D&I agenda at Board level too. It would be a big change though, having had a career that has been very hands-on to date but I feel I have a lot of great and varied experience to draw on and it would be wonderful to find a way to use that experience to help other organisations. So we will see where the next while takes me. I can't say that every step in my career so far has been planned meticulously in advance, but I felt like I ended up where I was always meant to end up. If you were to ask me if I was back at the start of this career path, would I have taken the same route, then the answer is a resounding 'Yes'!

Interviewer: Kevin Manning

Prize for the Creative Use of Actuarial Skills 2020
Winners: Connecting Actuaries with Charities (Actuarity)

Background

The seed for the Society's Inaugural Prize for the Creative Use of Actuarial Skills was sown at the SAI Annual Convention 2019 when Colm Fitzgerald and his actuarial and finance studies students from University College Dublin presented a session entitled 'Actuaries of the Future'. This session set out a number of university student projects that demonstrated a creative use of the actuarial skillset. Building on this idea, Darragh Pelly and Gareth McQuillan and the Wider Fields Committee launched the prize for the Creative Use of Actuarial Skills 2020 in Spring.

The Society was delighted with the overwhelming responses received over the summer months. We received entries from 12 teams from universities right across the country. A very competitive and comprehensive judging process ensued, reflecting the calibre of the applications received.

Announcing the Winners

Congratulations to the winners: '**Connecting Actuaries with Charities'** with *Anna Thomson* (Queens University Belfast)**,** *Brenda Laverty* (Queens University Belfast) and *Brian Manning* (University College Dublin), who together make up *Actuarit*y**.** The winners were announced at a special event organised by the Society on 5th November 2020 with the competition entrants, judges, lecturers and mentors present. The winning individuals each received a specially commissioned medal and shared a cash prize of €2,000.

Judges' Comments

The winning team focused on how actuarial skills could be applied to help charities working in the area of mental health to optimise their use of resources. The project included building a model to identify the relative risk of a caller to a helpline having depression, and the winners showed how this could be used to identify which callers in the queue should be prioritised. The team also built a model to analyse the behaviour of different clusters of callers, in terms of call duration and frequency, and showed how this can be used to anticipate and plan for the outcomes of promotional campaigns, for example. The team's report was well structured and presented the issues, the team's ideas and solutions very clearly. Supporting the winning entry was a very engaging video.

Videos

The winning team's video is now available to view on the Society's YouTube Channel at the link here. It will also be made available to view at the SAI Annual Convention 2020. Many of the videos from the other entrants are also available on the Irish Actuaries in Wider Fields LinkedIn group page and the Society's LinkedIn page. I would encourage you to take a look at all these videos.

Acknowledgements

On behalf of the Society and the Wider Fields Committee, I would like to express my sincere thanks to a range of stakeholders (please see below). In particular, I wish to acknowledge the vision, determination and significant volume of work carried out by *Darragh Pelly* and *Gareth McQuillan*. The Society very much looks forward to re-running this competition again in future years.

Brian Donnellan – SAI Head of Engagement and Communications

Acknowledgements

- **Teams and Individual Competitors***: A special word of thanks to all our teams and individuals who took part. Each of these teams and individuals have the special accolade of participating in the first ever competition of its kind for actuarial students across Ireland. The teams and individuals are listed on the next page.

Acknowledgements (continued)

- **Judges:** A special thanks to the judges: *Yvonne Lynch; Tom Barry; Bríd Quigley; and John Lander*s. The judges put in a tremendous effort to review the applications, videos and accommodating actuarial models and reports and provided a detailed report to all the competitors.
- **University Staff:** *Colm Fitzgerald; Finbarr Kiely; Mark Farrell; Neil McConville.*
- **Mentors:** *Ramalingam Kannan; Bence Zaupper; Chris Gibney; Chris Goold; John Caslin; Norman Kelly; Michael Fitzgerald; Ian Geary; Tom Leahy; Mairead O'Mahony; Aisling Kelly; Ger Bradley; Paul O'Callaghan; Brian Murphy; David Coldrick; Sinead Clarke; Paul Walsh; Brendan Guckian; Michael Lausch; Richard Collins; Cillian Ryan; Joe Peck*
- **Wider Fields Committee**: *Darragh Pelly; Gareth McQuillan (Chair)*; Wider Fields Committee Members. The vision, leadership and determination from Darragh, Gareth and the Wider Fields Committee was a key factor in ensuring the students were well supported.
- **SAI Staff:** *Simeone Golden and Catherine McBride.*

Teams and Individuals Listing (Competitors)

- **Actuarial Skills in Education (Actuarial Educonomists):** *Arthur Collins; Caoimhe Gavaghan; David Byrne; Saoirse Ní Thuairisg.*
- **Expanding 24 Hour Transport in Cork (Cork Creatives):** *Shane Murphy; Evan O'Donovan; Paul O'Mahony.*
- **Connecting Actuaries with Charities (Actuarity):** *Brenda Laverty; Anna Thomson; Brian Manning.*
- **The Use of Actuarial Skills in Sport (AIS):** *Oisín Brennan; Niall O'Laoighaire; John Gorman; Eoghan O'Longaigh; Alexandra Bradley.*
- **Actuaries and Satellite Imagery (Actuarial Models):** *Thomas Condon; Jack Galvin; Clodagh Howe; Conor Lucey.*
- **Actuaries in the Health Service (Queen's Actuarial Rethinkers):** *Tiernan Caulfield; Aoife Colleary; Kate O'Brien.*
- **Roads of the Future (E-leven):** *Adam Martin; Niamh Holmes; Eoin Killarney; Rose Wang; Cathal Mac an tSagairt.*
- **Actuaries for a Sustainable Future (A.F.S.F):** *Pawel Zielinski; Hollie Collins; Ciara Murphy; Ruairi Green.*
- **Improving call centre efficiency (Q-Cutters):** *Mark Gilligan; Lauren Hughes; Chris Wroblewski.*
- **Homelessness (Team Iota):** *Billy Millar; Enda Gormley*.
- **An Actuarial Analysis of the Football Transfer Market (UCD Interns):** *Seán O'Neill; Shane Connoll; James O'Brien.*
- **Actuaries and the Environment (Group 9):** *Laura Heraty; Mark Ryder; Lana Sheridan; Eoin McDonagh.*

Roll of Honour: Prize for the Creative Use of Actuarial Skills 2020 Winners - Connecting Actuaries with Charities (Actuarity)

From left to right: ***Anna Thomson*** (Queens University Belfast), ***Brenda Laverty*** (Queens University Belfast) and ***Brian Manning*** (University College Dublin)

Maths Week 2020

Maths Week promotes a positive attitude towards maths and shows the importance of maths in our lives and the role it plays underpinning all of science, technology and engineering. Some might say that maths is pretty important when it comes to other important fields such as actuarial science and emerging applications ('wider fields').

The 15th Maths Week Ireland took place under Covid-19 restrictions in Northern Ireland and the Republic of Ireland. Over those 15 years, Maths Week has engaged over two and a half million people! This year was different, but after all the disruption, the organisers felt that Maths Week 2020 had to happen. In anticipation of this (online) opportunity, and leveraging on the credibility of the work done by the *Maths Tutorials Group* and general interest in the actuarial profession, the Society reached out to *Eoin Gill (Director and co-founder of Maths Week Ireland).* In doing so, a path was set to engage and reach over 4,000 schools at primary and post-primary level and dispel some of the myths of what an actuary does!

With a good steer from Eoin Gill, we set out to produce not one, but two videos in order to facilitate a live Q&A session at junior and senior cycle on the 13th and 14th of October 2020.

Orla McManamly FSAI, *Davy Hughes FSAI* and *Lin Zheng FSAI* kindly agreed to represent the Society and came up with some excellent creative ideas to represent actuaries in the best possible way. Orla's presentation and chairing skills along with the necessary preparations from Orla, Davy and Lin ensured high quality content was produced. This was no small achievement, with the challenges of the demands on home WiFi at peak times and the need to get our recording takes completed over the space of a few hours.

The Society hosted its two live sessions for schools with live Q&A on 13th and 14th October 2020:

1. *Every Day Counts!* - (Live Q&A session). Target audience: transition year students, career guidance counsellors and teachers; and
2. *Searching for Certainty* - (Live Q&A session). Target audience: junior cycle students.

Our speakers for these sessions were again Orla, Davy and Lin, who spoke about the skills and opportunities open to those who enjoy maths, and introduced viewers to the work of an actuary.

Orla, Davy and Lin did a fantastic job in representing actuaries in the best possible light and made tangible connections to maths and data analytics in a 'real life' way. This generated a lot of interest with the students for a discussion in relation to a career as an actuary. Eoin's hosting skills were excellent to encourage debate and follow-up questions. Ms. Moran and all the 1st year students from *Holy Rosary College* in *Mountbellew, Co. Galway* had lots of memorable questions. We were asked the pertinent questions that matter, such as the odds for winning the Irish Lottery and the areas of maths that was most important to the work of an actuary. There was general consensus with placing probability and statistics as one of the areas of maths that 'counts' a lot in work and in everyday applications.

Every Day Counts (with live Q&A) - 'Maths Week TV' *Presenters*: *Orla McManamly FSAI, Davy Hughes FSAI, Lin Zheng FSAI.* We were joined on air by Ms. Moran and the 1st year students from Holy Rosary College in Mountbellew.

Searching for Certainty (with live Q&A) - 'Maths Week TV' *Presenters*: *Orla McManamly FSAI, Davy Hughes FSAI, Lin Zheng FSAI.* Eoin Gill, Maths Week facilitated the Q&A session. This allowed us to discuss the work of actuaries in traditional areas and in wider fields/in a multitude of sectors.

A special thanks to *Eoin Gill, Diane Murphy, Ben Dolan* and all the Maths Week team for general advice, hosting, prompting questions on the day, and for the live broadcasting of our two events. On behalf of the Society, we very much appreciate this effort and support from the Maths Week team. It was pleasing to see the Society's sessions included in Maths Week newsletters which were sent to schools across the country. The sessions were also promoted on the Maths Week website which was highly visible.

Videos (without Q&A) and session descriptions are also available on the SAI website and are an excellent resource for parents, students and teachers.

Brian Donnellan – SAI Head of Engagement and Communications

MATHS TUTORIALS GO ONLINE

Despite the challenges that 2020 has presented us with, our dedicated group of tutors (*Paul Dalton, Dairine Dolan, Anna Hayes, Orla McManamly, Mairead Mernagh, Dave Roberts*) have managed to adapt and continue to help Higher Level Leaving Certificate Maths students. Volunteers have been working hard to organise and run Zoom webinars for students, demonstrating how to solve maths problems and engaging through virtual Q&A. Well done to everyone involved!

Patrick Kelly FSAI – SAI Maths Tutorials Leadership Group

My Experience with Udacity

A review of the "Intro to Machine Learning with PyTorch" course by Udacity, from an Actuarial perspective. Padraic McDonagh, FSAI

Once it came apparent that working from home and social distancing was going to be the norm for a while, I started searching for a course online that would keep me busy for a few months. To be honest, I found the initial search a bit overwhelming, as there were a number of websites and courses to choose from. I eventually chose the "Intro to Machine Learning with PyTorch" course at Udacity and thought that I would share my experience so that other people (actuaries or otherwise) can make a more informed choice of their own if searching for a similar course.

A few important things to note straight away:

1. It's not a free course. It's currently listed at $399 a month and it takes 3 months on average to complete. However there are numerous discount codes available, and I ended up only paying $179 a month with one. I recommend searching google or twitter for a similar coupon code.
2. There is some prerequisite programming knowledge required for the course, so it would not be suitable for programming novices. See below.
3. It's not certified by an associated college.

Prerequisites

Udacity do have some recommended prerequisites for taking the course, namely:

- At least 40 hours of programming experience
- Familiarity with data structures like dictionaries and lists
- Experience with libraries like NumPy and pandas

Basic knowledge of probability and statistics, including:

- Experience calculating the probability of an event
- Familiarity with terms like the mean and variance of a probability distribution

Luckily, Udacity also provide some free courses which cover these exact prerequisites

- Intro to Data Analysis for learning about NumPy & pandas
- Intro to Python for learning about basic data structures in Python

Udacity: Learning Philosophy and Website Technology

Learning Philosophy

Udacity's philosophy is to learn by doing. This means that after learning the theory, through video, text and exercises, you are tasked with applying your knowledge through larger projects.

Feedback for the smaller programming exercises is graded automatically by code, but the larger projects are reviewed by humans. This human feedback is one of the reasons it's not a free course, and it was one thing that really drew my attention to this course above other ones (Coursera/Udemy etc.).

For one of my project reviews in particular, the reviewer made a great suggestion to use a Python library that was outside of the scope of the project (specifically, tdqm, a library for easy batch processing visualization).

Udacity does not let you receive your course certificate until all the projects in a course have passed this review process, so it really is a great confirmation that you have really gained some tangible knowledge and skills, rather than just reaching the end of a YouTube video!
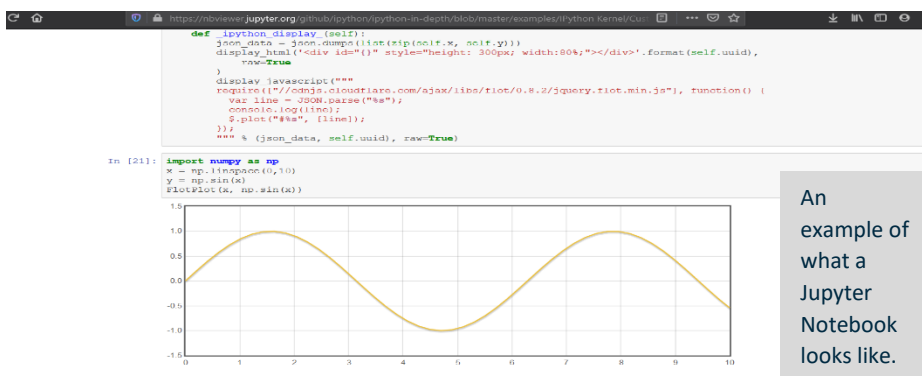
For those that are looking for new careers, these completed projects can be separately uploaded to github or other services, so that you can demonstrate the skills that you have gained.

Udacity also provides a forum for posting questions about the theory or projects you're learning, and a member of staff will answer these questions quite fast. I ran into some coding issues that I couldn't resolve by googling, so it was great to have this resource to ask very specific questions to people who are knowledgeable about the exact problems you're trying to solve.

Website Technology

The website is quite interactive and the projects and coding exercises are done directly inside the browser, mainly using Jupyter Notebooks. This means that you don't have to go through the hassle of installing Python or any associated data science libraries, like NumPy or pandas, on your computer, it can all be done within the browser.

For those unfamiliar, Jupyter Notebooks is a web application that makes it easy to create and share documents that contain live code, equations, visualizations and narrative text.

An example of what a Jupyter Notebook looks like.

In addition to using Jupyter notebooks, some of the projects involve writing small Python programs that are intended to be run from the command line. Again, instead of getting the student to download anything, all this is written and handled within the browser.

Overall the technology that Udacity uses to help students learn is quite slick and really takes the headache out of compatibility issues that can sometimes occur when installing Python.

Course Syllabus and Projects

For the "Intro to Machine Learning with PyTorch" course, there were 3 main sections, each with its own project at the end to demonstrate the skills learned. The 3 sections were:

1. Supervised Learning
2. Deep Learning
3. Unsupervised Learning

Full details of what you learn in each section can be found here.

Supervised Learning

This section of the course covered machine learning (ML) algorithms that can be applied when you have training data that has labels. A somewhat famous ML task that can be solved with supervised learning classification techniques is the Kaggle Titanic Competition.

The theory side of things covers quite a number of algorithms. Actuaries will be quite familiar with some of these like Linear Regression, but others like Support Vector Machines will be quite new. While you might think that it's important to get a full understanding of all the maths behind these algorithms (and it is!), the teaching material emphasises a higher level understanding initially so that you can understand which algorithms to use for any proposed problem. In the real world, data scientists largely don't code their own algorithms from scratch, rather they leverage existing code through packages in Python\R\Julia etc.

The Python package that is used extensively for this section is a popular library called scikit-learn. As with most things in Python, this library is straightforward to use and the documentation on the website is a great reference.

The project for this section was to identify potential donors for a fictitious charity, CharityML, using the charities existing data on current donors. The project is completed within a single Jupyter Notebook so that you can write your code, show your visualizations and explain your findings all within a single application. The course material does a great job of introducing things incrementally that, by the time I got to the start of this project, I felt that I had a good grasp of what was being asked of me.

Deep Learning

This section of the course was all about learning the basics of Neural Networks. Most of the exercises centred around the task of training a neural network to recognise digits from images.
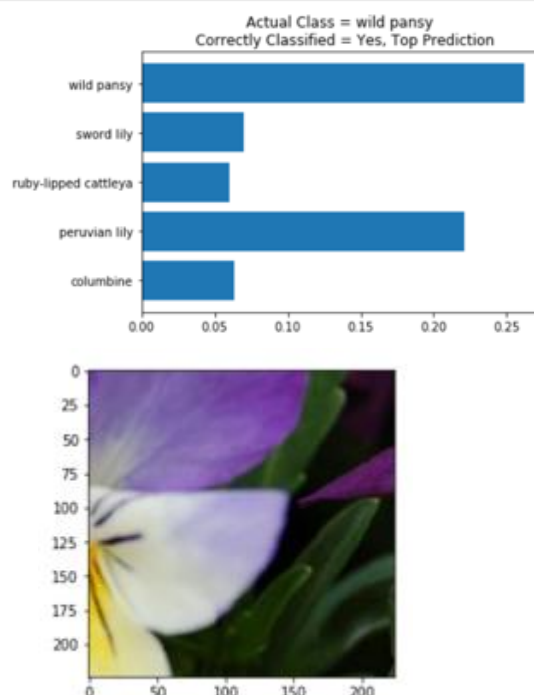

Images of hand-written digits from the MNIST collection.

The material here is really interesting and it's surprising how little is needed to build something that does a decent job of recognising sample handwritten digits. I felt a bit more comfortable with this section as I completed a neural networks module in the final year of my undergraduate degree, and surprisingly I still remembered some of it.

The project for this course was to train a neural network to classify any image of a flower into 1 of 100 different flower types (eg. fire lily, pink primrose, dandelion). To accomplish this, I applied a technique called Transfer Learning, where you use a pre-trained model that was trained to accomplish a related task, and re-train it to a new task. The library used here is PyTorch, which is developed and maintained by Facebook's AI Research Group.

For the project, there was a choice of a few models that were all trained to classify images from the ImageNet image collection into 1000 different categories (e.g. Strawberry, Balloon, Tiger). Re-training these models to the new task of flower classification works quite well and I achieved an accuracy of over 70% using this technique.

An image from my project. Here the model predicts that it's an image of a wild pansy with 26% probability for its top guess. Its 2nd guess is a peruvian lily with 23% probability.

I had a lot of fun with this project, especially when I finally got it fully coded and working and could see it work correctly on brand new images that I pulled from Google. If you want to see my Jupyter Notebook or any of the code from this project, I've created a repo on Github for it.

Unsupervised Learning

The final section focused on unsupervised learning techniques such as clustering and dimension reduction techniques like Principal Component Analysis (PCA). The difference between unsupervised and supervised learning is that in unsupervised learning, your data does not need to be pre-labelled in order to work.

One example of unsupervised algorithms in practice is this conference paper here, they used a clustering algorithm called DBSCAN to group internet network traffic on a university campus to determine how much traffic was related to email/http/p2p programs etc. They did not need prior data that was labelled Email or HTTP to determine the clusters, the algorithm is given X groups as an input, and outputs X clusters, based on how best to "separate" the data.

Another interesting application for clustering algorithms is noise identification. In this video, you can see how one is used to filter out cars, and they are the "noise" in what otherwise is a static background.

Dimensionality reduction is a technique to reduce the needed data to accurately describe the variability in your data. PCA is one reduction technique that I had encountered in my role as an actuary, in an ESG (Economic Scenario Generator) model for a valuation model. At the time I only had a very high level understanding of it, so it was good to get a more solid grounding of what was actually going on.

The inputs to the ESG model were forward rates from a large number of swap instruments and PCA was applied to reduce these into just one term structure that best represented all swaps in terms of variation.

The project for this section of the course was to use census data for Germany to group the population into representative clusters and then compare this to real-world customer data from Bertelsmann and to analyse which population clusters were over or under represented in the customer data. I had to sign an additional agreement to access the customer data so it appears that it was definitely real and I was surprised at how fine-grain the data was.

Summary

Overall, I really enjoyed doing the course and I would definitely recommend it to anyone who's looking for a course to get a decent understanding of the fundamentals.

Pros:

- Great website technology
- Practical, project-based learning
- Human-reviewed assignments
- Career and Q&A Resources

Cons:

- It's not a free course

Padraic McDonagh, FSAI – Data Analytics Committee

Joining Forces on Irish Mortality

The Demography Committee of the Society of Actuaries in Ireland (SAI) has published a paper co-written with the Continuous Mortality Investigation (CMI) of the Institute and Faculty of Actuaries (IFoA). Working paper 141 explores ways of adapting the CMI Mortality Projection Model for Irish population data, areas to consider when doing so and the likely challenges of such work. The paper also considers the potential impact on life expectancy of adapting the Model to use Irish population data.

For those of us that remember when the CMI published reports rather than working papers, CMI interest in Irish mortality is nothing new (CMI reports included analysis of Irish business until data volumes declined) but it has been more than 10 years since the CMI last applied its expertise to the Irish market in a published paper. We are delighted to welcome them once again to our shores (virtually of course) and to combine the skills and experience of the Demography Committee with those of the CMI for the benefit of all our members.

With the full support of both Council and the CMI Executive Committee, members of the Demography Committee worked closely with members of the CMI's Mortality Projections Committee to produce this insightful and thought-provoking paper which we hope will be of interest to all members.

The CMI Model uses historic experience data to determine age-specific initial improvement rates which are then projected into the future allowing for the user's view of long-term improvements. The model is calibrated using England & Wales population data and is widely used not only throughout the UK but also in Ireland and other countries. The CMI previously published working papers which explore the impacts of calibrating to both sub-populations and super-populations (WP 97/103/110/115), but working paper 141 is the first CMI working paper to specifically consider calibrating the model to a population outside of the United Kingdom.

The paper is available on both the SAI website and the CMI's pages of the IFoA website.

Much of the analysis and considerations underlying this paper were presented at the Life Conference in November 2019. The final paper, reflecting subsequent developments in the analysis will be presented at the SAI Annual Convention on 8 December 2020.

We are delighted with the success of this first collaboration with CMI and look forward to opportunities to work together in the future.

SAI Demography Committee

Mentee and Mentor Testimonials - [SAI Mentoring Service](#)

"I was new to living and working in Ireland but was lucky to be part of the Society. The SAI's mentoring programme is a simple way to get support; it fosters team spirit and is designed to help everyone who calls for it. It helped me to validate my thoughts and gain valuable guidance for future exams. I would recommend everyone to use the SAI's mentoring programme as no one should be alone on their journey to becoming an actuary."

Dheeraj Agarwal, Senior Associate, PwC

"I've been lucky to have had a number of people act as mentors to me over the years, and the SAI's mentoring programme is a really nice way to pay it forward. It's very rewarding to feel like you have made a positive difference in someone's career path."

Claire Lonergan FSAI, Head of Operations, Canada Life Reinsurance Dublin

"I really enjoy being an SAI mentor - it's both interesting and rewarding. Every situation is different and it's nice, and hopefully helpful, to share tips and relevant experiences with an actuarial colleague as they grapple with a career or professional issue. The most enjoyable thing for me though is helping people resolve issues for themselves by making it easier for them to clarify their own thoughts and assess their options."

Paul O'Faherty FSAI, SAI Past President and INED – with his grandson, James

"The mentoring programme is a fantastic facility for any actuary looking for what's next in their career. I was very fortunate to be paired with a great mentor as a newly qualified actuary. Even if you don't plan on making any career moves it is really invaluable to talk to someone senior in the industry outside your organization."

Cillian Dickson FSAI

Student News

SAI Student Representatives at the IFoA's Student Consultative Forum

At present, two student members represent the SAI's student membership at the IFoA's Student Consultative Forum (SCF). The forum meets twice a year, usually around six weeks after each exam sitting. The Student Representatives provide your feedback to the IFoA on a wide range of topics: the exam centres, examination papers, the curriculum and work-experience requirements.

Following each exam sitting, the IFoA usually sends out a post-exam survey via email. The results of this survey are extremely valuable to your Student Representatives as they form the basis of their feedback to the IFoA. Students are encouraged to provide their feedback so that the representatives can bring such matters to the attention of the IFoA.

Nabeelah Nawoor   *Stephen Brennan*

Your Representatives to the 2019/2020 IFoA Student Consultative Forum

Nabeelah Nawoor: nabeelah.nawoor@alliedrisk.ie

Stephen Brennan: stephen.brennan@alliedrisk.ie

Please find details of the items discussed at the June 2020 SCF meeting here: SCF Notes June 2020. Further information on the Society's representation at SCF can be found here.

University Awards

Best final year student in Actuarial Mathematics in UCD
Laura Cullen
2019

Best final year student in Actuarial Mathematics in DCU
Fergal McGuirk
2020

Congratulations to Laura and Fergal!

Online classes go outdoors to boost students' well-being

Colm Fitzgerald FSAI, Assistant Professor in the School of Mathematics and Statistics at UCD, lecturing in Actuarial and Financial Studies from a forest in the Wicklow Mountains.

As featured on RTÉ News - a novel approach by *Colm Fitzgerald FSAI* to delivering online lectures outdoors to encourage good health and wellbeing for our future actuaries. This is a wonderful example of servant-based leadership in action!

New Student Seminar

We were very happy to welcome new and existing students to the New Student Seminar which was held online on 19th November 2020.

A sincere thanks to all our speakers and organisers:

• *Eva McEneaney, FSAI,* Chairperson of the Recent Qualifiers Committee.
• *Matthew Tenant*, Quality Manager, Institute & Faculty of Actuaries (IFoA).
• *Niall Mc Groarty*, Chairperson, SAI Student Society.
• *Nabeelah Nawoor,* SAI Student Society & Student Consultative Forum.
• *Sean Casey*, FSAI, President of the Society of Actuaries in Ireland.

For students who could not make the live session, a recording is available on our website at the link here for a limited time. **Further information and brochures** are also available here.

Registering as a Member of the Society (Students)

New students, once registered with the IFoA are encouraged to complete our online membership application form to become a member of the Society (student membership).

THE STUDENT SOCIETY COMMITTEE: Niall Mc Groarty (Chairperson); Eavan Gleeson (Vice-Chairperson); Caroline Breen (Treasurer); Conor Kearney (Communications Officer); Stephen Brennan (Representative to IFoA Student Consultative Forum); Nabeelah Nawoor (Representative to IFoA Student Consultative Forum); Adam Greer; Claire O'Sullivan; Colum O'Byrne; Daniel Mone; and Finn Logan.

If you wish to contact any of the committee members, click on the Member Directory for their details or email the Society at info@actuaries.ie.

A Message from your SAI Golf Society Captain, Kevin Begley

Last May when I announced the delay to the 2020 SAI Golf Society calendar of events, I never imagined I would be writing an update such as this six months later. Although highly regrettable, the necessary decision has been taken to defer all SAI Golf Society events planned for 2020 given the current Covid-19 pandemic situation.

I appreciate this will be disappointing news to the golfers out there but the health and safety of our members must take priority. I am therefore in no doubt that this is absolutely the right thing to do.

Given the circumstances I will stay on as the SAI Golf Society Captain for 2021 and I very much look forward to announcing in due course the details of the 2021 SAI Golf Society events, assuming of course the situation has returned to a more normal state by then.

I can confirm that the reigning champions Neil Guinan (the winner of the 2019 Captain's Day) and John O'Connell (the winner of the 2019 Piers Segrave-Daly Matchplay) will not be asked to return their perpetual trophies this year. Both can therefore keep their trophies on display in their homes just like Shane Lowry continues to have the Claret Jug on display in Clara, Co. Offaly for another year. Similarly I will ensure that the Quaich trophy (that was retained by the Society in the 2019 golf match between the Society and the Faculty in Scotland) is kept safe until battle recommences in the 2021 match against the Faculty.

Let us all look forward to 2021 which I hope is a year with better circumstances for all.

In the meantime, I hope you and your loved ones stay safe and well.

Kevin Begley FSAI, SAI Golf Society Captain 2020 & 2021

On the Move

Students:
Stephen Fleming moved to **Allianz Partners**
Orla Donnelly moved to **Zurich Insurance Plc**
Aine Crowley moved to **AXA XL**
Padraig Flynn moved to **PartnerRe**
Ryan Mullan moved to **Allied Risk Management**

Fellows:
Joyce Brennan moved to **General Investment Trust dac (New Ireland)**
Mark Lee moved to the **Department of Social Protection**
Ross Mitchell moved to **PwC Ireland**
David Kirwan moved to **AXA XL**
John Stevenson moved to **Vera Financial**
Brian Fitzgerald moved to **Royal London Ireland**

Donald Mc Sweeney moved to **Utmost**
Aoife Power moved to **Canada Life**
Eoin O'Baoighill moved to **CACI Dublin**
Rafay Khan moved to **Monument Insurance**
Daragh Burns moved to **Partner Re**
Derek Ryan moved to **Canada Life Re**
Deirdre Lawless moved to **SCOR Management Services Ireland Ltd**
Stephen O'Kane moved to **Monument Insurance**
Timothy Connolly moved to **Royal London Ireland**
Michael Murphy moved to **SCOR**
Luca Patacconi moved to **CNP**
John Jenkins moved to **Milliman**

SAI NEWSLETTER WORKING GROUP: Kevin Manning FSAI (Editor); Kate Yu FSAI; John Gibson FSAI; Dasha Douglas FSAI and Brian Donnellan.

Society of Actuaries in Ireland

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Society of Actuaries in Ireland

Issuing of Recruitment Notices

The Society of Actuaries in Ireland issues recruitment notices to members on behalf of companies looking to recruit a part or fully qualified actuary.

The service includes:

- An email from the Society to all members setting out a summary of the job vacancy being advertised.

- The email includes a link to your company's full recruitment notice on the members' area of the Society's website. Your recruitment notice will remain on our website for one month unless you advise us to remove it earlier.

How much does it cost?

The cost of this service (excluding VAT) is €2,500 to cover one vacancy or €3,000 to advertise two to four vacancies. If you would like to advertise for more than four vacancies, please discuss the cost with the Society.

How long does it take to get a notice out to members?

It normally only takes up to two working days from receiving final approval and payment from you before your recruitment notice is circulated via email to members and made available on the members-only section of our website.

Below is an example of the email which is issued to members.

If you would like the Society to issue a recruitment notice on behalf of your organisation, please contact info@actuaries.ie

SAI Annual Convention: Thank you to our Sponsors

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	IRISH LIFE ASSURANCE Irish Life Assurance plc is a subsidiary of the Irish Life Group Ltd and is one of Ireland's leading life and pensions companies with over 1.3 million customers. For over 80 years, it has helped people in Ireland embrace change and build better futures through its innovative products and dedication to customer care. Irish Life Assurance has two operating divisions. Its Retail division provides life insurance, pension, savings and investment plans to personal and small business customers, while its Corporate Business division provides group retirement and risk products to employers and affinity groups.
	MILLIMAN Milliman is the largest actuarial consultancy serving the insurance industry in Ireland. We have unparalleled expertise in the Irish domestic and cross-border insurance and reinsurance markets. As part of the Milliman group, we combine the expertise of our Dublin office with that of our colleagues across Europe and the world, to provide truly global consulting solutions for our clients. Learn more on our website: ie.milliman.com
	SCOR, a Global Tier 1 Reinsurer SCOR, the world's fourth largest reinsurer, offers its clients a diversified and innovative range of solutions and services to control and manage risk. Applying the "The Art & Science of Risk", SCOR uses its industry-recognized expertise and cutting-edge financial solutions to serve its clients and contribute to the welfare and resilience of society. SCOR offers its clients an optimal level of security with its AA rating from S&P and Fitch. The Group generated premiums of more than EUR 16 billion in 2019, and serves clients in more than 160 countries from its 38 offices worldwide.
	ABOUT RECRUITMENT About Recruitment was founded in 2017 by Ger Bradley, FSAI to provide high quality personalised recruitment services to the Irish actuarial market. If you are looking for the right fit for your organisation, or that next move on your path to achieving your career goals, please feel free to contact us in total confidence. Or, if you know a colleague who is looking, please feel free to use our refer a friend scheme, where you can earn up to €1,500 for a successful referral, subject to some fair terms and conditions (here).
	REITIGH SOFTWARE Reitigh is your local solution to fill the gaps presented by the global IFRS 17 accounting standards effective from January 1st 2023. We are 100% Irish owned, a one-of-a-kind for IFRS 17 end-to-end software. Founded by actuaries and IT professionals we speak fluent business-IT-finance, and using our Low-Code platform "IntegraLynx" we facilitate a frictionless implementation of the standards. (visit www.reitighltd.com)