Celebrating the new Trinity Bradfield Centre, the Trinity Bradfield Prize for Cambridge students, and Trinity entrepreneurs.
Welcome to the Winter 2018 edition of The Fountain.

As a Computer Scientist, I can look back over all the years I have been at Trinity and see huge changes. When I arrived there was a graduate Diploma course, but no Tripos course. But undergraduate societies had made arrangements so that their members could creep into the Computer Laboratory after hours and use the bulky machines that lived in nice air-conditioned rooms. Now the subject is not just a straightforward course option for applicants to consider, but numbers are buoyant. This year Trinity has a bumper number of new Computer Science students arriving, and I am looking forward to telling them both about some of the up-to-the-minute aspects of the subject and a little of the history that shows how we have got to where we are.

In my role as College Emoluments Secretary, I oversee grants to junior members from many of the varied specialised funds that Trinity is so fortunate to have at its disposal. When we disburse grants from these funds, along with the note to the student advising how they will be supported, we generally include a summary about the benefactor whose generosity has made this possible. The types of support we are able to offer include conference expenses for graduate students, extra help for students suffering unexpected hardship, summer projects and internships, and many subject-specific schemes. Keeping track of which funds can help which students is sometimes a challenge but the grants make such a tremendous difference to their College lives.

It is my pleasure to introduce to you this edition of The Fountain, in which Professor Julian Hunt (1960) reflects on the centenary of the end of the First World War and the conflict’s impact on the lives of three Trinity brothers. Professor Adrian Poole (1967) interviews writer Ali Smith, College’s first Senior Fellow Commoner in the Creative Arts, and we celebrate Trinity entrepreneurs. We share a day in the life of Trinity Schools Liaison Officer Ellie Wood, and George Fortune (2014) celebrates 100 years of the Trinity Mathematical Society (TMS), which gives me special pleasure since not only am I currently Senior Treasurer for the Society, but in my days as an undergraduate I was a member of the Society committee and helped to organise the celebrations for 50 years. How time flies!

Do take a look at our Forthcoming Events listing on the back cover of the magazine, and please put the dates in your diary – we’d be delighted to welcome you back to College.

Dr Arthur Norman (1966)
Fellow, Computer Science & Emoluments Secretary
Professor Julia Gog (1994) received the Cambridge Vice-Chancellor’s Impact Award 2018, for her mathematical modelling to help predict how and where the influenza virus could spread.

Professor Ardis Butterfield (1979) has been newly named as the Marie Borroff Professor of English, Yale. She holds secondary appointments as Professor of French and Music. Ardis will spend 2018-19 as a Visiting Fellow of Trinity College and Senior Research Fellow at the Faculty of English, University of Cambridge.

Dr James Scott (2004) published his first book on Artificial Intelligence, AIQ: How Artificial Intelligence Works and How we can Harness its Power for a Better World and discussed his work with a 1,600 strong audience at this year’s Hay Festival.

Alex Michaelides’ (1996) debut thriller The Silent Patient, about a famous painter who murders her husband and never speaks again, will be published in February 2019. The film rights have been acquired by an Oscar-winning production company.

Charlie Zhou (2010) has received an Elsevier Data Analytics Fulbright Award to study under leading public health academics at Harvard University for one year.

Dr Stephen Barclay (1975) received the Cambridge Vice-Chancellor’s Public Engagement with Research Award 2018, for his work with teenagers and young adults with cancer, co-designing with his colleague, Anna Spathis, a treatment for fatigue to meet their unique needs.

Alex Michaelides’ (1996)
Kathryn Savage (2011) has co-established Kalibu Organisation, an NGO providing a football academy and youth club for underprivileged youngsters, collaborating with Trinity Women’s Football Club (TWFAC) to provide kit for the teams. See College News page 6.

Professor Joya Chatterji (1985) has been elected to the Fellowship of the British Academy in recognition of her work on South Asian History, specifically the history of the India/Pakistan Partition of 1947.

Professor Lynn Gladden (1983) has been appointed Executive Chair of the Engineering and Physical Sciences Research Council (EPSRC).

Professor David Runciman (1985) has been elected to the Fellowship of the British Academy in recognition of his work on the history of political thought; theories of the state and political representation; and contemporary politics and political theory.

Gareth Ward (1992) has been appointed Her Majesty’s Ambassador to the Socialist Republic of Vietnam.

Z. Elemér Gidófalvy (1990) and Péter Juhász (2014) are two of the committee members who have established the new Cambridge-Oxford Alumni Club of Hungary, which welcomes alumni, past and present Fellows and staff from both universities.

Thiam-Guan ‘TG’ Tan (1983) received the Astronomical Society of the Pacific’s 2018 Amateur Achievement Award, which recognises significant observational or technological contributions to astronomy.
On 3 October Sir Gregory Winter (1970) was jointly awarded the Nobel Prize in Chemistry 2018, with Professors Frances Arnold and George Smith, in recognition of his pioneering work in using phage display for the directed evolution of antibodies, with the aim of producing new pharmaceuticals.

The Nobel Assembly said: ‘The 2018 Nobel Laureates in Chemistry have taken control of evolution and used it for purposes that bring the greatest benefit to humankind. Enzymes produced through directed evolution are used to manufacture everything from biofuels to pharmaceuticals. Antibodies evolved using a method called phage display can combat autoimmune diseases and in some cases cure metastatic cancer.’

Sir Gregory is the 33rd Trinity Nobel Laureate. He said: ‘It came as a bit of a shock, and I felt a bit numb for a while. It’s almost like you’re in a different universe. For a scientist, a Nobel Prize is the highest accolade you can get, and I’m so lucky because there are so many brilliant scientists and not enough Nobel Prizes to go around.’

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College News

Master awarded 2018 Nobel Prize in Chemistry

TCWAFC: Helping Kalibu achieve its goals

Trinity College Women’s Football Team recently partnered with Kalibu Organisation – a Uganda-based NGO – to send second-hand football kit over to their teams.

Co-founded this year by former TCWAFC player and triple blue Kathryn Savage (2011), Kalibu’s mission is to help young people in an area with high levels of youth unemployment, teenage pregnancies and school drop-outs to become productive and healthy citizens, including raising awareness on HIV/AIDS and sexual and reproductive health.

Kathryn said: ‘Having played football my whole life I know the life-changing impact it can have, particularly for girls in a rural environment where they’ve never previously had the opportunity to play.’

TCWAFC is proud to have gone global!

www.trin.cam.ac.uk/news

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Trinity Women’s Network (TWN)

The Trinity Women’s Network (TWN) is an inclusive forum, with events and activities open to all alumni and members of College, male and female.

Chaired by Dr Kimberly Schumacher (1989), the Network would be delighted to welcome new members and is always grateful for ideas and volunteers, regardless of gender – men are encouraged to attend all events. If you would like further information or are interested in becoming a member please contact the Alumni Office: alumni@trin.cam.ac.uk. You can also join in the discussion with over 100 members on their Facebook page:

www.facebook.com/group/TrinityWomensNetwork/about

New Trinity Bradfield Prize supports student entrepreneurial talent

The Trinity Bradfield Prize, launched in July, will provide Cambridge students and early career researchers with innovative tech ideas with an exceptional opportunity.

The biannual Prize will offer office space at the Bradfield Centre on the Cambridge Science Park; funding and mentoring from entrepreneurs, leading academics and Trinity alumni; and £10K funding to help develop their innovations.

Primera Impact, co-founded by current Trinity MB/PhD student Ravi Solanki (2011), will manage the Prize: ‘Cambridge is increasingly emerging as an epicentre for student-led entrepreneurship across all disciplines. However, the vast majority of students and young researchers still face many challenges in helping their ideas to become a reality. The Prize is a landmark step to support these Cambridge innovators. Ultimately, it will lay the foundations of a new ecosystem for young entrepreneurs in Cambridge.’


www.trin.cam.ac.uk/news

GOLDEN YEAR FOR IMOGEN GRANT

Congratulations to Imogen Grant (2014), who won the Gold medal in the Women’s Lightweight Single Sculls at the Under-23 World Championships in Poznan in July. It was a dazzling performance right from the outset, and she went on to win by an impressive two lengths. In September Imogen added to her medal collection, winning a Bronze medal at her first senior World Rowing Championships.

These were just the latest triumphs in what has already been a stellar season for Imogen, including her Boat Race victory in March. We have no doubt that her rowing career, which she only began on arrival at Trinity, will continue to go from strength to strength and we’ll hear more from this amazing athlete.

www.trin.cam.ac.uk/news
Trinity to welcome first Senior Fellow Commoner in the Creative Arts

The writer Ali Smith will be Trinity's first Senior Fellow Commoner in the Creative Arts, joining College in January 2019.

Ali Smith CBE, FRSL is one of the leading writers of her generation, author of nine novels including Hotel World (2001), The Accidental (2005), Artful (2012, based on lectures delivered in Oxford), Autumn and Winter (2016, 2017, the first two of a quartet), and five collections of short stories.

The Fellowship is designed to support the Fellow’s creative work and encourage participation in College life, and will complement the Fellow Commoners in Creative Arts, who have enriched the Trinity community for half a century.

‘Let me quote Muriel Spark and say I’m Scottish by formation. And add to this that for the kind of writer I probably am, form is everything.’

The position has been generously funded by alumnus Tom Hall (1986), Senior Partner at the private equity firm Apax Partners: ‘Four teachers at Trinity in the late 1980s – Adrian Poole, Eric Griffiths, Jeremy Maule and John Marenbon – were a tremendously important part of my time there. Their patient, generous and imaginative instruction made a lasting difference to me, for which I am immeasurably grateful. To help fund the Senior Fellow Commoner in the Creative Arts is a very small expression of that gratitude (small because I received a lot more than I could ever give back). So it is a pleasure to translate my thanks into this gift to Trinity, and to Trinity English. And it is a great testimony to the College that they should attract a novelist of the calibre of Ali Smith.’

I talked to Ali Smith about how her Scottish origins inform her work, living in Cambridge and coming to Trinity in 2019.

How do you plan to spend your time at Trinity?
I’ll have an open door. I’m going to be available to see people from Trinity, from other colleges – students, staff right across the board, anyone at all who’d like to show me work or just come and hang out and talk, or not talk. I’ll put the kettle on. I’ll be working with the College Literary Society too I hope. And hopefully I’ll be inviting writers to come two or three times a term and give readings or talk to us.

How has Cambridge changed in the 30 years you’ve lived here?
It’s got much harder for people to live here ad hoc, I think – and like almost everywhere, it’s become terrifyingly homogenised. When I first arrived, in 1985 God help me, Cambridge had a strong alternative scene and the town was full of independent shops of all kinds. But some things don’t change – one of the reasons I love living here is that the town is full of energy, a kind of lifeblood of intelligence passes through it, along with a simultaneity of a multitude of languages, and this I love, always have, always will.
How important are your Scottish origins?
What, to me? Well, very. Let me quote Muriel Spark and say I’m Scottish by formation. And add to this that for the kind of writer I probably am, form is everything.

You started off writing plays – what did you learn from that?
That there’s no written form without voice and dialogue.

Do you think of your novels differently from your shorter fiction?
I try not to think of them at all, except when I’m writing them, and then it’s more like they’re thinking me.

How important are dreams to your writing?
I don’t know. But I do know that dreams are the undercurrent, the foundation, of all our perceptions of reality, and I’m interested in all four – undercurrent, perception, reality, dream, and in the places they come together and come apart.

In 2008 your collection of favourite writings, The Book Lover, featured pieces by Muriel Spark and Margaret Atwood, and lesser known writers like Clarice Lispector. Who would you include now that you didn’t then?
Oh what a good question. The Book Lover was actually called The Reader in its UK publication, which I think is a much better title. For some reason the US publishers wanted to change it. Sigh. I’d add so many writers. I’ll name the top few. The Italian novelist Giorgio Bassani, in translation by Jamie McKendrick; I’d add one of the superb short stories from Within the Walls: Five Stories from Ferrara. Eley Williams, whose debut collection of stories, out last year, I think is really good. And Jeremy Gavron. I reckon he’s one of the more underrated novelists writing now, and I also love his non-fiction. Jay Bernard; if there were ever to be a twenty-first century Auden, with all the invention and cultural understanding, understanding of tradition and sense of the speed and the human outcome of foul politics, Jay is it. And Olivia Laing, whose latest novel proves to me yet again what a versatile and sensitised writer she is.

The phrase ‘luck and justice’ is prominent in your 2014 novel, How to Be Both. What does it mean to you?
Exactly what it says.

‘One of the reasons I love living here is that the town is full of energy, a kind of lifeblood of intelligence passes through it, along with a simultaneity of a multitude of languages, and this I love, always have, always will.’
Celebrating 100 years of the Trinity Mathematical Society (TMS)

As anyone who has seen the recent biographical film ‘The Man Who Knew Infinity’ set in College about the Indian mathematician Srinivasa Ramanujan will know, the early years of the 20th century were especially exciting for mathematics at Trinity.

The collaboration between Ramanujan and the Trinity Fellows who had brought him to Cambridge, G. H. Hardy and John Littlewood, made a substantial contribution to mathematics. After major work in the mathematical field of logic, Bertrand Russell was expelled from Trinity in 1916 as a result of his conviction for anti-war activities. It is against this background that, in early 1919, a group of undergraduates met to ‘promote the discussion of subjects of mathematical interest’. This led to the formation of The Trinity Mathematical Society, or TMS.

It is believed that the TMS is the oldest extant subject society at any university in the country. Today, in its centenary year, the TMS has over 1,300 active members across all the Cambridge Colleges and all STEM subjects. In recent years, almost all of the undergraduates who have studied mathematics at Trinity have been members. The Society, throughout each academic year, runs weekly talks as well as an extensive range of social events ranging from an annual dinner in the Old Kitchen of Trinity in Lent Term to a garden party in the Fellows’ Bowling Green at the end of Easter Term. The talks are given mainly by speakers from Cambridge University but often the Society invites speakers from industry or from other universities. The content of talks ranges from discussions of interesting mathematics not covered in the Mathematical Tripos to light-hearted expositions of new but accessible research.

The meeting to discuss the formation of the TMS was held on 15 February 1919, followed by the inaugural private business meeting on 29 April 1919. On 6 May 1919 the first talk was given by the British astrophysicist E. A. Milne, then an undergraduate at Trinity. He was a driving force in the formation of the Society, together with G. H. Hardy (who at that time was a Trinity teaching Fellow). Whilst there is no direct evidence, it appears that there was a previous College mathematical society before the First World War, of which Hardy was a member but this had been dissolved by the time that Milne came to Trinity in 1914.

The TMS has been an integral part of mathematics at Trinity over the past century. Its member and speaker lists form a ‘Who’s Who’ of the eminent mathematicians and scientists to pass through Cambridge in the 20th century. At the fifth meeting (held on 29th October 1919) the astronomer Arthur Eddington talked on the subject of ‘the equilibrium of a gaseous star’. Published the following year, his research anticipated the discovery and mechanism of nuclear fusion processes in stars by correctly speculating that the source of stellar energy was due to the fusion of hydrogen into helium. Hence, it appears that this groundbreaking discovery was first discussed in the TMS. Nor was this an isolated occurrence. Paul Dirac and James Chadwick both gave TMS talks on the research that would lead to Nobel prizes. Now known for having written influential mathematical textbooks, Harold Coxeter and Harold Davenport both gave a number of talks across the years to the Society. Michael Atiyah, President of TMS in 1951, winner of the Fields Medal in 1966 and Master of Trinity between 1990 and 1997, has given seven talks. G. I. Taylor, described by George Batchelor, the founding head of the Department of Applied Mathematics and Theoretical Physics (DAMTP), as one of the most notable scientists of the 20th century, gave eight talks between 1920 and 1970 on topics ranging from the ‘deformation of metallic crystals’ to ‘turbulence’.

By George Fortune (2014), TMS Constable and President 2016–17
The TMS logo is the unique smallest simple squared square, namely a square partitioned into 21 smaller squares all of different sizes. The squared square problem was first studied systematically by four TMS members, R. L. Brooks, C. A. B. Smith, A. H. Stone and W. T. Tutte, in 1940. Brooks and Smith were successive Presidents of the TMS in 1937 and 1938 respectively. W. T. Tutte went on to make the decisive advance in the cryptanalysis of the Nazi Lorenz cipher system during the Second World War whilst he was working at Bletchley Park. This was described in the citation for his induction as an Officer of the Order of Canada as ‘one of the greatest intellectual feats of World War II’. All four members gave talks to the Society, including two on the problem of squaring a square itself. An example of a squared square solution containing 26 squares is inlaid on the top of a teak table in the Trinity College Bursary.

Following the founding of the TMS, a number of other College mathematical societies arose (the Adams Society, New Pythagoreans, Quintics and Tensors) and also a University society (the Archimedean). Until the 1970s the TMS only accepted members from within College. Since then (as some of the other College societies failed) the TMS has been open to all comers. Membership has increased steadily over the years, to the extent that it has now become effectively a second University-wide forum for technical and social interaction amongst mathematicians and those in related fields. With meetings held on a weekly schedule throughout term-time, and helped by generous sponsorship from ATASS Sports, Jump Trading and Trinity’s Heilbronn Fund, the talks given to the Society span the full range of areas of mathematics. For example, the use of mathematics in fields such as Biology, Medicine and Computer Science is covered.

The Society has a range of traditions that it keeps alive. Since Isaac Newton was a Trinity mathematician, the apple has always had an important symbolism for the Society. An apple is dropped by the President of the TMS at the end of every meeting to signify that the meeting has become ‘social’. A red apple also features on the design of the Society tie. Furthermore, the President bowls an apple as the first ball at the annual cricket match, which has been held every year since 1953 between the TMS and the St John’s College Mathematical Society (the Adams Society).

It is believed that the TMS is the oldest extant subject society at any university in the country.

Looking forward, in order to celebrate the rich history of the Trinity Mathematical Society, a Symposium will be held later this academic year. Talks will be given on a range of different topics relating to the Society and to mathematical life in Cambridge more generally over the past hundred years. This will be followed in the evening by a formal dinner in Trinity College Great Hall – as soon as plans for the Symposium and dinner are finalised we will share the details with all College members. Following that the committee will settle down to plan for the Society’s next century.
Entrepreneurial Spirit

Entrepreneurship has been at the forefront of College life over the last 18 months, with the opening of the Bradfield Centre on the Cambridge Science Park in summer 2017, followed by the launch of the Trinity Bradfield Prize for Cambridge student entrepreneurs this July (see College News, page 7).

To celebrate Trinity’s entrepreneurial spirit, we invited four alumni innovators to share their paths since leaving College, the challenges they faced along the way, the most important lessons they learned, and their advice for those wishing to follow in their footsteps.

Sonya Passi (2006)
Founder & CEO, FreeFrom

I have been a domestic violence activist since I was 16, knowing from a young age it was my life’s work. After Trinity, I went to Berkeley Law School and in my second year started my first non-profit, the Family Violence Appellate Project. I spent two years at Morgan Stanley, before founding FreeFrom, a national organisation in the United States that is creating pathways to safety and financial security for survivors of domestic violence.

One in four women in the United States will experience severe domestic violence. The prime reason survivors stay in abusive situations is because they cannot afford to leave. This is also why survivors return to an abuser. FreeFrom is working to uncouple domestic violence and financial insecurity through training and technical assistance, technology and online resources, policy reform and our social enterprise, Gifted by FreeFrom. Looking ahead, we have a three year strategy to build our work nationally. Perhaps we’ll grow internationally – we receive frequent requests to expand our work.

Working with our clients and celebrating their success is the greatest reward. One survivor was living in a shelter having just left her abuser for the seventh time. Every time she returned it was for the sake of her two little girls. We helped her to start her own business, and a few months in she said, ‘For the first time since my daughters were born, I feel like I don’t ever have to go back to him. I know now that I am everything I will ever need.’ I never doubted what I am building at FreeFrom again.

Before founding FreeFrom I wish I’d had more faith in myself. I wasted energy in the first six months doubting whether I could get it off the ground. I wish I had enjoyed the process more instead of worrying so much. Build a strong network and develop really good mentors. You can almost always accomplish more in a day of meeting new people than you can sitting in your office. Know what you are good at and learn to delegate quickly.

www.freefrom.org

Joanna Burnett (1992)
Co-Founder & CEO, GPrX Data

After Trinity I fell into computer programming – a holiday job turned into a nine year ride through the dotcom boom at an early SaaS business, ending up as Director of Development and 24x7 operations. When our son was born I quit employment, and during some freelance coding came across the NHS’s new open datasets. It was a classic lightbulb moment – we’d found this motherload of pharmaceutical usage data that no-one had tapped.

GPrX takes NHS open prescribing data and reprocesses it for use by industry. Our database holds anonymised information on every prescription written in UK primary care since 2010, and we’ve built a fast online platform that shows manufacturers what’s being prescribed where, so they can adapt their commercial plans accordingly.

Pharma business intelligence had been dominated for decades by a Goliath of a data provider, so we spent the first few years having to explain what our ‘alternative’ data source was. I left the sales process to others for too long, which was a mistake. Even if you don’t have a ‘sales’ background, it’s vital as a founder to get out and learn from your customers and prospects. Scaling up, we’re excited about partnerships with other technology companies, and integrating our data into business models like digital advertising.

It’s rewarding to build a company from scratch that’s contributing to the economy, generating employment and serving manufacturers of all sizes. I’ve learned about drugs and the conditions they treat – healthcare is a fascinating space. Being a business owner gives you flexibility to arrange your schedule around the family – though you never switch off.

Advice? Have a clear value proposition AND be prepared to put in the hard slog. Anyone can have a great idea, but it typically takes 18 months to prove market fit and generate revenue. We started with just a vision and brainpower, no funding or investment – we just worked our socks off. There was no guarantee that we weren’t barking up a wrong tree, but we were slightly obsessed. You have to be a little crazy, but that’s half the fun.

www.gprxdata.com
Dr Uday Phadke (1973)
Chief Executive of Cartezia

My time at Trinity provided the basis for me to play on a very wide canvas with confidence. My trajectory since leaving College has been shaped by two competing forces: a systematic analytical approach to all opportunities; and regular segues into different areas of knowledge and expertise including deep technology insights, economic theory, and commercial skills. This has enabled me to be actively involved in advising, mentoring and investing in over 100 innovative science and technology firms across the world in the last two decades.

Since 1997 I’ve been Chief Executive of Cartezia, which builds new businesses enabled by science and technology: it offers access to ‘patient’ capital, deep techno-commercial expertise, and connections to national and global networks of customers, partners and suppliers.

The biggest challenges I’ve faced have been persuading others to follow a rational evidence-based path rather than following the current fashion, and harnessing the right mix of human and financial capital to drive radical change. What’s been most rewarding has been the opportunity to really make a difference rather than the financial gain, what I call ‘Karma points’.

Our plans for the future include exploiting our understanding of how commercial, social and cultural value is created to drive innovation-led growth in healthcare diagnostics and therapy; and the creation of sustainable growth based on the circular economy.

My top tip for any budding entrepreneurs would be Focus, Focus, Focus! There is never a shortage of innovative ideas – the challenge lies in choosing the right ones and executing them quickly.

www.cartezia.com

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David Babington-Smith (1986)
Entrepreneur: edutech & international development

My career has been divided evenly between working in international development and new business start-ups. My first NGO experience was the most exciting. I grew a small housing NGO into the largest developer of homes in Malawi. When I left, we had a land bank of 10,000 plots, a vibrant workforce of 1,000 and a growing portfolio of company housing schemes. My luck was in being there when rapid urbanisation took off and major funders (developmental and corporate) were looking to finance new entrants such as ourselves.

My main commercial venture was Epigeum, an eLearning spin-out company from Imperial College London, which began when a lecturer at Business School introduced me to the Head of eLearning. We started with £1,000 and the vague idea of commercialising the knowledge of Imperial’s academics. Research revealed that there wasn’t money to be made in corporate eLearning, but a new market in ‘university skills training’ was emerging. Epigeum grew to dominate this market and we sold out ten years later to Oxford University Press.

The biggest challenge in the NGO sector was politics – an obsession with means and an almost casual disregard for ends. The commercial sector was far more focused on the recipients’ needs; and when it swung into action in housing, it was far more sustainable and effective. In business the challenge was finding the commercial ‘sweet spot’. Once you have a service or product people really want, they don’t mind paying. If your clients keep asking for discounts, or don’t treat the product well, it’s a sign that you are not offering something of exceptional value. My tip for budding entrepreneurs is read Jim Collins’ book Good to Great!

Growing the organisation and changing lives have been the greatest rewards. I am always looking for the next venture. The latest is a boutique hotel company in Morocco; The Beldi Collection Ltd.

www.thebeldicollection.com
A day in the life of Ellie Wood, Trinity College Schools Liaison Officer

As I walk through Great Gate each morning the tranquility of Trinity never fails to amaze me, despite College being on one of Cambridge’s busiest arteries, and it’s lovely to start off the day with a moment of calm.

The Outreach and Access team is small but between us we deliver a busy annual programme of events, open days, College residential weeks and school visits. I joined Trinity this summer after I graduated, and I am responsible for our College-based activities. My colleague Terri-Leigh Riley is based in Derbyshire and is responsible for our external activities, travelling to schools in the north of the country and also throughout our ‘Link Areas’ of Milton Keynes, Hampshire and the Isle of Wight. Together with Dr Glen Rangwala, Admissions Tutor (1993), Stacey Smith, Admissions Administrator, and Professor Adrian Poole, Fellow for Widening Participation Projects (1967) we deliver College’s access and outreach initiatives.

Each day we receive all sorts of enquiries from potential applicants, teachers and parents, so as soon as I arrive in the office I check our email inbox and review social media. Our Twitter, Facebook and Instagram accounts are an easy and far-reaching way to share information and to promote our events. Virtually all students are active on social media now, with more and more teachers joining them, so the reach it offers us is invaluable, and is often the main way people find out about what’s going on. I spend an hour responding, smiling at the cheeky thank you tweets we’ve received.

We are launching one of our busy summer residential courses in the afternoon, so I prepare the briefing sessions for our fantastic band of student volunteers who return from all over the country to help out. This time it’s for Women in Science, Technology, Engineering and Mathematics (STEM), having already delivered residentials for Law, Biology and Medicine, and Archaeology, not to mention College’s first residential for Year 11 students, in partnership with Villiers Park Educational

Trinity Stonehouse Residential. College’s first residential for Year 11 participants.
Trust and thanks to the generous support of the Stonehouse Educational Foundation, chaired by Richard Stonehouse (1964). It was so exciting working with younger students, and getting them thinking about their paths and options at the very beginning of their A-Level studies. It will give them a head start, and we hope we will be able to offer many more such opportunities in future.

We set off for a team lunch with the student volunteers before the participants arrive, which is a great opportunity to hear how our undergraduates have been spending their summers, and then it’s time to set up the welcome desk in Old College Office opposite the Porters’ Lodge. Everyone receives a warm welcome on arrival before they are checked in to their College rooms – their first taste of the Trinity experience.

We host an icebreaker session, with lots of fun games so everyone can get to know each other, relax and feel at home as quickly as possible. It’s also a great opportunity for the participants to connect with the student volunteers, who might be the only Cambridge contact of a similar age they have a chance to talk with at length, and trust enough to ask all their questions! These connections are incredibly important, as I know from personal experience. I’ve been involved with access and outreach work since my first year at Newnham College, where I read Modern & Medieval Languages. I volunteered to lead College tours, my interest grew, and I became their JCR Access Officer. I really wanted to help others who were from a similar background to me. Nobody in my family had been to university before me, and I was the first person from my secondary school to go to Oxbridge. Only a handful of students from my year went on to university at all. My teachers weren’t aware of how the application process worked, or what Cambridge was looking for. Fortunately, one teacher asked if I’d looked at Oxbridge as an option. I laughed and thought, ‘why would I?’ but I attended a Cambridge Open Day and fell in love. Four years later I graduated.

We deliver an introductory talk to let everyone know about the sessions and activities that lie ahead – over the next few days they’ll attend lectures and classes taught by Cambridge academics, visit University departments, meet Fellows, undergraduates and alumni, and gain an insight into our unique teaching style to help them know what it’s like to study here.

People often believe that access and outreach work is about recruiting to Cambridge, but it’s not. It is about encouraging students from less advantaged or under-represented backgrounds to aspire to get to a good university, and equipping them with the confidence to make informed decisions about the institution that will be best for them. If a student decides that Cambridge, or Trinity, is not for them, then that is just as useful – our job is to help them to choose the place where they can truly flourish. Cambridge still has work to do in improving access and opportunity for all but, with initiatives such as the University’s four new Stormzy Scholarships to support young black students, we are making positive strides. As musician Stormzy said at the launch: ‘I hope this scholarship serves as a small reminder that if young black students wish to study at one of the best universities in the world, then the opportunity is yours for the taking – and if funding is one of the barriers, then we can work towards breaking that barrier down.’

Next on the agenda is a tour of College, to give everyone a chance to explore some of the more hidden corners. We have dinner in Hall, under the watchful eye of Henry VIII, and it’s off for the evening’s social activity. Cambridge students play as hard as they work, so to show what the city has to offer we organise a range of activities – on the menu tonight is a spot of punting and the perfect photo opportunity of a selfie on a punt, which few can resist! We glide back to College on the Cam and bid them good night, knowing they’ll all be up until the wee small hours.

Tomorrow will be another action-packed day so I head home, tired but feeling fortunate. My work allows me to give back, and to help provide eye-opening experiences for young people who might otherwise never have the opportunity to realise their true potential. There is nothing more rewarding than watching a student’s confidence soar, and seeing their thoughts on applying to university switch from ‘why would I?’ to ‘why wouldn’t I?’

Follow the Outreach and Access Team on @TrinityAccess.
As the centenary of the end of the First World War is marked on 11 November this year we will all reflect on those who fell, including the 619 Trinity men who died during the hostilities.

The anniversary is especially poignant for me because the lives of three of my family members who attended College, my grandfather and two great-uncles, were shaped irrevocably by the War. Whilst the three brothers shared a love of mathematics, the experience of Trinity, rowing and life on the sea, war would have very different outcomes for the trio.

The Garnetts were a talented family of mathematicians. My great-grandfather, William Garnett, reached St John’s College as an Exhibitioner in 1868. He was followed to Cambridge by his three sons, Maxwell, Stuart, and Kenneth. The trio of brothers all blossomed at Trinity, and notched up many achievements between them, but war was to enter and alter all of their lives. My great-uncles Stuart and Kenneth fell in the battles and struggles of the First World War, and this great tragedy led surviving sibling Maxwell to devote the rest of his life to campaigning for peace.

Maxwell, my grandfather, was the first to arrive at Trinity, matriculating in 1899. He was named after his father’s colleague Professor James Clerk Maxwell (1850), the first holder of the Cavendish Chair of Experimental Physics. He proved himself capable from the off - he won a major scholarship and the Sheepshanks Astronomical Exhibition, he was awarded the Smith’s Prize for Mathematics and in 1902 he became joint 16th Wrangler. To these accomplishments he added rowing in the University trial crew, and in 1903 he gained a First Class in the First Division of Part II of the Mathematical Tripos.

After graduation his life-long dedication to education took flight. He lectured in applied mathematics at University College, London. He was particularly fascinated by how Clerk Maxwell’s recent mathematical analysis could explain how gold particles in glass diffract light and change its colour (why red glass looks red), an idea now relevant in semi-conductor physics, which resulted in his paper ‘Colours in Metal Glasses and in Metallic Films’, published in the *Philosophical Transactions of the Royal Society* in 1904.

The next decade was a whirl of productivity. From 1904-12 he was Examiner to the Board of Education, and in 1905 he was elected to a Junior Research Fellowship at Trinity. In 1908 he was called to the Bar by the Inner Temple, and in 1910 he married my grandmother, Margaret. He was appointed to the dual position of Principal of the Municipal School of Technology Manchester and Dean of the Faculty of Technology, University of Manchester in 1912, and was later honoured with a CBE for his achievements at both institutions. As war loomed, Maxwell volunteered for service but was rejected on health grounds. His two younger brothers, however, were to have a very different experience of war.

Stuart was a brilliant scholar who arrived at Trinity in 1900, making a name for himself as 9th Wrangler in 1902 and beating Maxwell’s score. His interest in the further application of mathematics developed towards engineering, and he was honoured with a first class degree in the Mechanical Sciences Tripos in 1903.

He put his knowledge into practice straight away, as an engineer at the Manchester company of Mather & Platt. A young man of many talents, he had also been studying law and he was called to the Bar by the Inner Temple in 1905, practising from 1909–1912. He also found time to write *Turbines*, a remarkable textbook on steam turbines published in 1911, which was reprinted recently by Amazon.

5th Officer Cadet Battalion in 1917, stationed at Trinity during wartime.

by Professor Julian Hunt (1960)
Stuart was an ardent yachtsman. He possessed a practical knowledge of seamanship and navigation of the English Channel and North Sea, as well as the Irish Sea and the Scottish islands, accomplished by few amateur sailors. He took a keen interest in the Scouting movement, and sea-scouting in particular, and in 1913 he authored *Seamanship for Scouts*. He joined the Royal Naval Reserve, and when war broke out in 1914 he obtained the loan of a yacht, which he manned with officers and crew chosen mainly from amongst Cambridge graduates and undergraduates, and engaged in the mine-sweeping service in the English Channel. On one occasion he swam out to a live mine, cut it free and swam back to shore with it. He was unconvinced of his heroism however, regarding minesweeping as ‘soft sort of work’.

He determined to try his hand at flying instead, so in 1915 Lieutenant Commander Stuart Garnett voluntarily gave up his duties in the Royal Naval Reserve to join the Royal Flying Corps. He was an aviation observer in France for several months, where his inventive genius was used teaching new recruits the principles and tactics of flying. He was recalled home to England to join the staff of the Central Flying School of Upavon, and in August he married his wife, Sybil. Early the following year, he achieved his ambition and qualified as a fighter pilot but tragedy struck on 21 Sept 1916 when Flight Lieutenant Garnett was killed instantly as a result of an air accident at the flying school. He had been married for exactly one year.

Kenneth arrived at Trinity in 1911, and alongside his mathematical studies he began rowing. Like his two brothers before him, he was an accomplished sportsman and he was number five in the victorious Cambridge Eight who rowed in the Boat Race of 1914.

After a short stint minesweeping with his brother, he voluntarily entered the Royal Field Artillery in 1915. In March of that year he returned home injured, managing to complete his Cambridge degree whilst on crutches. Despite his injuries, and undeterred by the experience, he returned to the Front. In a letter home in the summer of 1916 he wrote: ‘I had a glorious bathe yesterday morning in the river (Somme) and I am awfully fit and well.’ Just one week later his parents received another letter, informing them that he had been injured. Kenneth advised them: ‘I was hit with a piece of shell in the neck. It is quite a small piece but it...’
has unfortunately got near the spine... don’t be anxious as I am wonderfully well myself.’ He was actually partially paralysed but he wished to protect his family from the severity of his condition. Three weeks later, his parents travelled to France to bring him home and on the eve of the return journey they received the terrible news that his brother Stuart had been killed in a flying accident. His wife was expecting their first child. Stuart’s son, named after his father, followed him into the RAF and was honoured with a Distinguished Flying Cross (DFC) in the Second World War.

Kenneth was nursed at the Empire Hospital, London, where he appeared to be improving. King George V and Queen Mary visited him to award him the Military Cross for his heroism in combat. He was moved to Roehampton where his condition worsened, and on 22 August 1917 he too died.

Losing two brothers to the Great War in the space of less than a year would have led many men to give in to despair, but Maxwell was galvanised by tragedy. He determined to focus his efforts on campaigning for peace, to help ensure that such senseless waste never happened again.

In 1920 he was appointed Secretary of the newly-formed League of Nations Union, promoting the ideals of international justice, collective security and world peace. He envisioned the Union as an educational body fighting for peace, and established branches and undergraduate groups throughout the country. His book *Education and World Citizenship: An Essay Towards a Science of Education* was published in 1921, for which he was awarded an ScD degree. He resigned from the LNU in 1938 after hearing that it might be used as an instrument of propaganda, but he remained committed to serving the cause of education. From 1941–44 he was Chairman of the British Association Committee on Post-War University Education.

The approach of World War II must have been a truly disheartening experience for my grandfather – he had lost so much during the last conflict, and worked so hard to prevent another. Yet he remained active, and during his last years he dedicated his time to writing more books about internationalism. He died in 1958, aged 77 and leaving behind his wife, seven children and many grandchildren. Maxwell had lived the long, family-filled life that war had denied his two younger brothers.

I have shared the stories of Stuart and Kenneth Garnett but they are just two of the 619 Trinity men who died in the First World War. What a tremendous debt we owe them all. One hundred years since the armistice, we honour them for their courage, and for the sacrifices they made to secure our freedom.

The name of every man who fell is engraved in oak in the College memorial either side of the altar in Chapel, and all are honoured during the annual College Remembrance Service on 11 November. The next time you visit Trinity, head to Chapel and pay homage.
ACROSS
1 Butler briefly returns pull or push-cart (6)
4 In limbo a devilish homo sapiens? (8)
10 Arch Tory – beware! (7)
11 Page increasing unnecessary information (7)
12 Simple Wiki definition starts to summarise Trinity undergraduate behaviour (4)
13 Often a trip is reviewed to see what might have happened post-touchdown in Florida? (5,5)
15 Nonsense back – breaking treatment! (9)
16 Misbehaving tutor’s an interfering old woman (5)
18 Velocity displayed in correct graph (5)
19 Process 8 roughly (9)
21 Simply being Blunt is no use – best to be converted by Burgess finally (10)
23 Eastern ruler enjoying laugh in quiet surroundings (4)
26 Load software of inertial navigation system – remarkable! (7)
27 According to a particular sequence Mersenne the monk found here? (2,5)
28 A specialism of Euclid and strangely leaving De Morgan yet baffled (8)
29 10 year chaos hampering Newton after first degree (6)

DOWN
1 What’s behind College chasing the sponsors (5)
2 A disclaimer’s broadcast rerun once (9)
3 Position a line beneath circle to see another shape (4)
5 Select decision-makers using Encota’s complex plane (7)
6 Pictures of e.g. Nevile and Whewell (3,7)
7 Muppet I discovered in Oscar’s trashcan initially (5)
8 Mathematical operation once tabled in oral might upset (9)
9 I know, reportedly, salesman served up beer (6)
14 Place attractive to a couple – or all seven, perhaps (6,4)
15 Taking into account mountain facing harbours (9)
17 Transformed core data assuming Atiyah’s term for geometric shapes (9)
19 Recall area – the essence of integration – that’s ring-shaped (7)
20 Chat about pi, squares and zero, following Gower’s introduction (6)
22 Italian versed in regularly turning transistor on and off (5)
24 Olly for one acting undaunted (5)
25 Pedometer shows raised value of greatest frequency (4)

Please send entries to:
The Editor
Alumni Relations & Development Office
Trinity College,
Cambridge CB2 1TQ

Entries are due by 31 December 2018.

The first correct entry drawn will win a copy of Trinity Poets, and the winner will be included in the next issue of The Fountain. For the solution to Cryptic Crossword No.2 email us at alumni-comms@trin.cam.ac.uk or visit The Fountain web page www.trin.cam.ac.uk/alumni/publications/the-fountain

Winning entry:
Congratulations to Anthony Harker (1967), who successfully completed Trinity Cryptic Crossword No.2, winning a copy of Trinity Poets.

Tim King (1980), is the Ipswich-based professional crossword compiler Encota. As well as setting puzzles for national newspapers and for magazines, Tim also sets personalised puzzles as unique and thoughtful gifts. If you’d like to know more, contact him at encota@btinternet.com and his website at www.specialisedcrosswords.co.uk
Coming soon…
Trinity College merchandise

This winter we are launching an exciting new range of College merchandise, including fine jewellery.

The new website will be live in the near future – please keep an eye on the website, the enewsletter and social media for details.

Staying in touch

Please make sure that the Alumni Office has your up-to-date contact details and let us know your communication preferences. We take the protection of your data very seriously. We use it to keep in touch with you, and to keep you informed of College news and activities.

Full details of how your data is held and used are set out in our Data Protection Statement at www.trin.cam.ac.uk/alumni/information/dataprotectionstatement

You are welcome to request a hard copy from us. Some sensitive personal information may be held in the database. You have the right to contact us at any time to change how your data is used, or to tell us that you do not wish to receive a specific communication. Please contact us using the details below.

Forthcoming Events

November 2018

Sunday 11 November
Remembrance Sunday Service (Trinity)

Saturday 17 November
Trinity Women’s Network (TWN)
Lunch & Panel Discussion (Trinity)

Thursday 29 November
TBCA Distinguished Speaker Series (London)

December 2018

Monday 3 December
Alumni Carol Service (London)

March 2019

Saturday 16 March
Trinity Law Association Dinner (Trinity)

Sunday 17 March
1546 Society Drinks Reception, by invitation (Trinity)

April 2019

Sunday 28 April
Celebrating 40 years of Women at Trinity

June 2019

Thursday 20 June
Trinity Golf Day (Henley-on-Thames)

July 2019

Saturday 13 July
Annual Gathering for 1987–1989

Wednesday 17 July
Annual Gathering for 1962–1964

For a full events listing and to book, please visit: www.trin.cam.ac.uk/events

Save the date

Sunday 17 March 2019
1546 Society, Trinity
(By invitation)

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