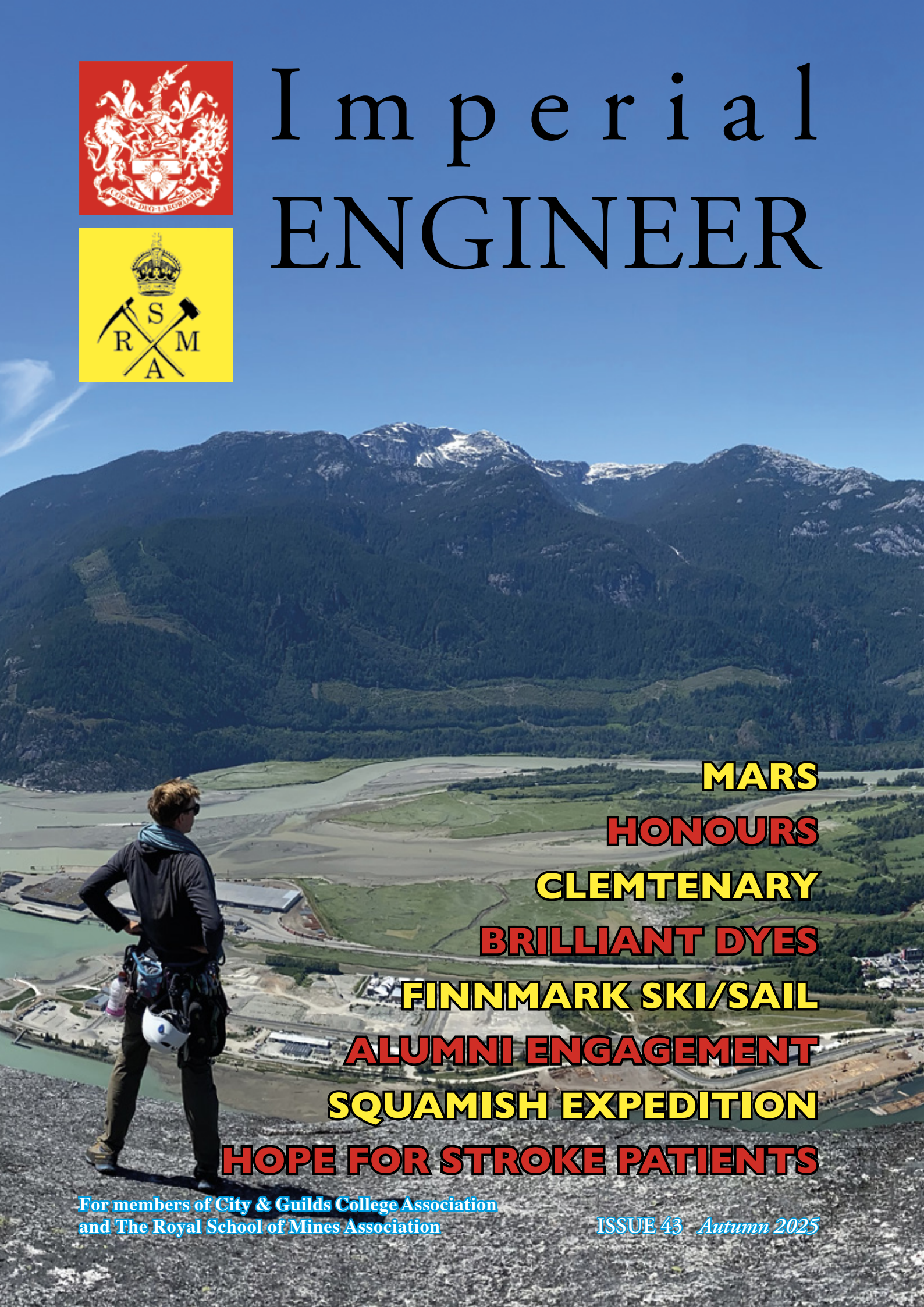
Imperial ENGINEER



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CLEMTENARY

BRILLIANT DYES

FINNMARK SKI/SAIL

ALUMNI ENGAGEMENT

SQUAMISH EXPEDITION

HOPE FOR STROKE PATIENTS

For members of City & Guilds College Association
and The Royal School of Mines Association

ISSUE 43 *Autumn 2025*

ISSUE FORTY-THREE
Autumn 2025

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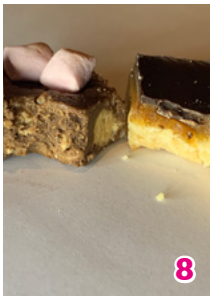

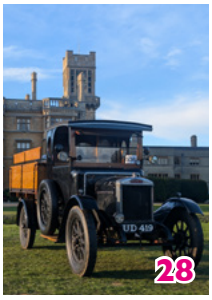

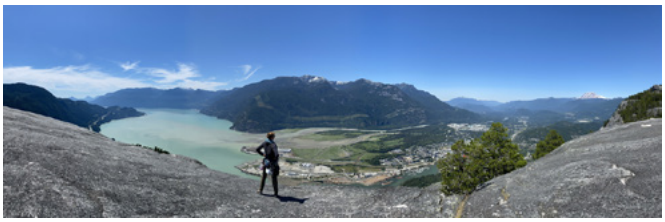

Cover image: Enjoying the panoramic view of Squamish, Western Canada at the mouth of the Howe Sound © Chorley King
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Imperial ENGINEER

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FINAL COPY DEADLINE FOR THE NEXT ISSUE: MARCH 30 2026

Kelvin Higgins

In June we held the AGM at Imperial in the Skempton Building. The timing of the event was set to coincide with the Great Exhibition Road Festival which spread throughout the College and the length of Exhibition Road. It was particularly nice to see all the motorised mascots being exhibited together and the enjoyment of all concerned at seeing them, particularly those not particularly advanced in years.

Although the AGM was not very well attended, we were able to resolve a few issues and to plan a way forward. Roger Preece, our Vice President, gave a very inspiring talk on how to achieve your goals and teamworking. We were all invited to the CGCU Hackathon where we were able to meet several students over lunch who were working on various projects. Roger gave a summary of his earlier talk which was very well received by the various groups of students, and we hope that it helped them get the most out of this exercise.

The Great Exhibition Road Festival was a truly enjoyable event with a few technical demonstrations, food stalls, live music and much more. We are planning to time the 2026 AGM to coincide with next year's event so that by attending the AGM you can experience all that is on offer and have a great day out. Details of next year's festival can be found on this link www.greatexhibitionroadfestival.co.uk which includes some of the highlights from the 2025 offering.

We are soon to hold the reunion lunch which I hope will be as enjoyable as last year's. There is still plenty of time to sign up but numbers have already exceeded last year's and so we are looking forward to another successful event. We are keen to encourage groups of alumni to attend and offer a discount for groups of five or more. So please contact your contemporaries to come along, catch up, and swap memories which sometimes leave a chill; did we really do that, of course we did, would you do it now, maybe not?

Moving on, early in the New Year we have the Annual Dinner. I am afraid that in my last report I made a mistake. The actual date of the dinner is **13th February 2026** which as luck (!) would have it is a Friday. It is not in March as I said. This year our speaker is Sir John Lazar CBE FREng FBCS, the current president of the Royal Academy of Engineering. He currently serves as the chairman for the Raspberry Pi Foundation and co-founder & General Partner at Enza Capital. The Annual Dinner is always a very enjoyable event, and I look forward to meeting as many members as possible. Booking details will become available on our website soon.

Moving on to more mundane matters, we are intending to change the way we collect subscriptions. Up to now we have collected subscriptions by standing order but there are difficulties doing so, therefore we have decided to make the switch to collecting them by direct debit. However, our bankers are not making it easy and so we may be forced to make alternative arrangements. We will be

Continues overleaf…

PRESIDENTS REPORT

Paul Holmes

A few weeks ago, I had the privilege of attending Imperial College's Faculty of Engineering Commemoration Day – not in my role as RSMA President, but as a proud father celebrating my daughter's graduation with an MSci in Geology. Held in the magnificent Royal Albert Hall, the ceremony stirred memories of my own graduation three decades ago. While many traditions remain, it was inspiring to see today's Earth Science, Engineering, and Materials students stride confidently across the stage, ready to shape the future.

Yet, the path ahead for graduates is increasingly complex. Media headlines often highlight the challenges of securing fulfilling employment, and many students leave university burdened by significant debts. Studying in London adds further financial pressure. Fortunately, Imperial and the Royal School of Mines (RSM) continue to be globally recognised institutions, offering graduates a strong foundation as they begin their careers.

Reflecting on the RSMA's founding objectives from 1913, I'm reminded of our enduring mission:

1. To endeavor to maintain the identity of the RSM and its distinctive diploma.
2. To foster an enduring link between members of the Association and with the staff and students of the RSM thereby promoting comradeship and a source of mutual help and advice.
3. To provide members with a forum for assisting, both financially and in other ways, students in particular and the RSM in general.
4. To present views of RSM men and women.

As Imperial evolves and rebrands, it's vital that the RSM's unique identity remains intact – not just in name, but in spirit. The friendships forged at the RSM can last a lifetime, and the RSMA exists to nurture those bonds. We also play a crucial role in supporting students as they transition into industry, offering mentoring and networking opportunities.

In response to rising costs and the growing financial needs of students, we've increased the RSMA annual subscription from £15 to £25 – our first adjustment in a decade. This change ensures we can continue supporting the RSM Union and delivering our core activities. If you're an existing member, we kindly ask you to update your standing order or PayPal payment to reflect the new fee, or make a one-off donation.

One of our proudest initiatives – the RSMA 100 Club Final Year Student Bursary Prize – continues to thrive. This year, we received ten applications from across the RSM, and we're awarding five bursaries of £1,500 each to students entering their final year.

Continues overleaf…

DIARY

RSMA Toronto, Canada
Informal RSM meeting
Last Friday of every month, noon.
Jason George Pub,
100 Front Street East, Toronto
Contact: rsma.1851@gmail.com

RSMA Perth, Australia
Monthly Sundowner
First Friday of every month.
The Celtic Club,
48 Ord St, West Perth, WA, 6005
Contact:
Alan Dickson – alan@dickson.com.au
John Sykes – johnpsykes@gmail.com

Imperial Alumni, Houston, US
Alumni social
Third Thursday of every month, 6pm
Capital Grille, 840 West Sam Houston Pkwy N, Houston, TX 77024
Contact: Matt Bell – matt@in2oilandgas.com

Imperial Engineering Alumni, Johannesburg, South Africa
Quarterly Johannesburg Lunch
(19th Nov, 18th Feb, 20th May, 19th Aug)
Baron & Quail, Woodmead, Johannesburg, South Africa
Contact: Richard Gundersen – Gundersen@yebo.co.za

CGCA/RSMA
Traditional Reunion Luncheon
Saturday 22nd Nov, 12:30 for 13:00
Rembrandt Hotel, Sth. Ken. SW7 2RS
For all IC engineers who graduated in a year ending in a '5' or a '0' or groups from any set of years.
See https://www.cgca.org.uk

RSMA
140th Annual Dinner
Friday, 28th Nov, 7:00 for 7:30
Rembrandt Hotel, Sth. Ken. SW7 2RS

CGCA
112th Annual Dinner
Friday, 13th Feb 2026
Grocers' Hall, Princes Street, London EC2R 8AD
See booking sheet enclosed with this magazine.

CGCA
AGM & President's Lunch
Saturday, 6th Jun 2026
Sth Ken venue to be confirmed:
Details to be confirmed

Great Exhibition Road Festival
Saturday 6th – Sunday 7th Jun
Exhibition Road
Free festival of arts and science led by Imperial College with other Albertopolis institutions.

An up-to-date calendar of events is always available on the CGCA and RSMA websites.

Imperial College maintains a calendar of college events at bit.ly/IE-WhatsOn

The Friends of Imperial College regularly organise events of interest to alumni (see bit.ly/IE-FoI)

Please note that while many of these events are open to all and often free, they usually require registration in advance. Please follow the links in the entry to get more information including if and how to register and whether there is any cost.

For more information follow links, or see page 2 for contact details

Kelvin Higgins, continued from page 3

in contact with all our members in due course to explain how things will work in the future when matters have been resolved. Along with this we have been considering the level of subscriptions that have not changed in over 15 years. We are currently considering what subscriptions will become, given our desire to expand the activities of the Association. However, we need help to do so therefore anyone wishing to help with organising events would be very welcome. It is very satisfying to have participated in these activities and if you have the time available you should seriously consider getting involved by contacting the Hon. Secretary (details on our website). We also need assistance with membership matters and communications and so if you want to help with these or any other roles, your association would be keen to hear from you.

I wish you all well and hope that I will be able to see as many of you as possible at our meetings. In the meantime if you have any ideas on events that we could hold or the direction of the Association please do not hesitate to get in touch.

A couple of photos of the Great Exhibition Road Festival, from Imperial.ac.uk/festival/

Paul Holmes, continued from page 3

The prize recognises academic excellence, community involvement, contributions to the RSM Union, sporting achievements, and financial need. It's a testament to the generosity of our alumni and the strength of the 100 Club. Thank you to all who contribute – your support truly makes a difference.

The fourth objective of the RSMA – to represent and amplify the voices of RSM men and women – resonates today with even greater urgency than when it was first articulated by our founding members. In an ever-evolving academic and professional landscape, the Association remains steadfast in its commitment to fostering an inclusive, respectful, and equitable environment. We recognise the importance of ensuring that all members, regardless of background or identity, are empowered to thrive. Where traditions may no longer reflect the values we uphold, the RSMA will not hesitate to engage in thoughtful reflection and, where necessary, recalibrate our practices to align with the principles of dignity, fairness, and mutual respect.

Annual Dinner and Guest Speaker

Preparations are underway for the RSMA Annual Dinner, which will take place on **Friday, 28th November 2025**, at the **Rembrandt Hotel, Knightsbridge**. This cherished event brings together alumni, students, and staff to celebrate the enduring spirit of the RSM.

We're honoured to welcome **Professor Mary Ryan CBE, FREng, FIMMM, FICorr, FCGI** as our guest speaker. As Vice-Provost for Research and Enterprise at Imperial and holder of the Armourers and Brasiers' Chair in Materials Science, Professor Ryan leads pioneering research in electrochemical materials science. Her work on nanoscale materials and operando techniques has earned international acclaim, with over 200 publications and more than 50 PhD students supervised.

Final Thoughts

I'm also pleased to welcome this year's RSMU President, **Anisa Price**, and Honorary Secretary, **Rhys Jones**. Both have already shown great dedication as RSMA Committee members, and I look forward to working with them to strengthen ties between alumni and students.

I extend my heartfelt thanks to the RSMA Committee for their tireless efforts. Our mission – to foster enduring links and promote mutual support – is no small task, but thanks to their dedication, the RSMA remains vibrant and relevant.

As we begin another academic year, I'm proud of all we've achieved. The Royal School of Mines and its alumni stand united, bound by shared history and a commitment to the future. I look forward to seeing many of you at the Annual Dinner and to another successful year of camaraderie and connection.

Yours sincerely,
Paul Holmes
President, Royal School of Mines Association

Old Centralians' Trust – Report of the Trustees for 2023-24

This report covers the activities of the Old Centralians' Trust between 1st October 2023 and 30th September 2024.

TRUSTEES' REPORT

Object

The Old Centralians' Trust is a registered charity founded for the purpose of providing financial support to the students and, in special circumstances, members of the academic staff of the Faculty of Engineering of Imperial College, London (formerly known as the City & Guilds College).

The charity's overriding priority, as laid down in its founding deed, is to provide grants to students who face exceptional financial difficulties through no fault of their own.

In addition to this, grants are provided to assist individual students or groups of students who wish to travel to conferences, undertake sport or leisure activities, or broaden their minds through adventurous or challenging activities or projects. Such activities were valued by the Trust's benefactors when they attended College, and many bequests gave guidance on the type of activity their money should support.

Source of Funds

Fund-raising is not carried out in any formal sense. The income of the Trust arises from legacies, donations given in memory of former members of the City & Guilds College Association (an independent alumni body for students and staff of the former City & Guilds College), regular Gift-Aided contributions from alumni, and from the income and growth on investments accrued from these sources.

The Trust's investments are managed by a sub-committee of the Trust Board, who implement a strategy to meet the Trust's requirements of a target level of income whilst at the same time maintaining the underlying value of the investment portfolio. The strategy is reviewed from time to time by the sub-committee in consultation with their investment advisors, but in essence the approach taken is to take a long-term view, maintaining a sensible level of annual expenditure of around 3% of total reserves, leaving a balance to meet management costs and to provide for long-term growth to counter inflation. This approach allows cyclic fluctuations in the stock market to be viewed without undue concern.

During 2023-24, there were no bequests (22/23: £3,000). The General Fund received 8 modest donations totalling £163 (22/23: £30 from 4 donors). Regular donations were also received for the benefit of the City & Guilds College mascot – a 1902 James and Browne motor car known as 'Boanerges' ('Bo' for short). These were allocated to the Trust's restricted 'Ford Fund' and totalled £2,243.44 (22/23: £2,876) before gift aid. From time to time, significant works are needed to Bo. However, following the very extensive restoration work supported by the Trust in 22/23, there were no calls for expenditure on Bo from the Ford Fund during the year (22/23: £14,689).

Public Benefit

The trustees confirm that they have complied with their duty under Section 4 of the Charities Act 2011. They have considered the public benefit guidance published by the Charity Commission and believe that they have followed its guidance. The Trustees' report gives a description of the activities undertaken by the charity during the year in furtherance of its charitable purposes, and the Trustees are satisfied that all such activities are in compliance with the stated objects of the Trust and that they provide public benefit.

Results for the year

The Trust's finances have continued to be in a satisfactory state. The overall value of the investment portfolio rose during the year by 9.49% (22/23: 14.60%). At the conclusion of the financial year the value of the Trust's investments stood at just under £4.2 million, an increase from £3.8 million a year earlier.

It is the opinion of the Trustees that the objectives of the Trust can continue to be met for the foreseeable future.

OPERATIONS

Covid is now, fortunately, a distant if unpleasant memory. The current year has confirmed the re-establishment of normal levels of student activity. There is good recognition across the campus, amongst both students and staff, of the Trust and its ability to provide help and support. Students continued to engage in overseas travel for expeditions and conference attendance, and the Trust distributed £55,245 (22/23: £45,125) in support of this broad range of activities.

Hardship

There were several applications for hardship assistance received during 2023-24, with £18,675 (of which £1,500 were two loans, both repaid) awarded to six students (22/23: £8,255 to seven students). Most of these awards were for significant hardship assistance and made a very appreciable difference to the lives of the recipients.

Statutory Awards

Engraved tankards and/or monetary awards were given to four students under the headings of: the Holbein Memorial Award; the Peter Moore Memorial Award, the John and Frances Jones Prize and the Fellows of the City & Guilds of London Institute Centenary Award. These last two are funded by, respectively, the Imperial College Registry (which still maintains the original legacy fund given by John & Frances Jones in 1935) and the 'FCGI Witchell Fund' held within the Trust.

Student Activity Awards

These awards were once again offered, based on nominations submitted by Senior Tutors, to two undergraduate students in each of the ten Departments of the Faculty of Engineering. Whilst the maximum number of awards is therefore 20, the number given this year was 16 (22/23: 12).

The awards of £800 each recognise the recipients' strong level of extra-curricular involvement in student society affairs and/or in sporting or cultural activities. Students in all but their final year are invited to submit details of their level of involvement in such activities to their Departmental senior tutor. These tutors then, in consultation with their Heads of Department, nominate two students whose involvement has been judged to be the most deserving. The awards are issued at the start of the next academic year. The intent of these awards is to encourage undergraduates to make the best of their time at university, and to help meet the inevitable extra costs of a more 'involved' lifestyle, whether these be for accommodation, travel or to help with other associated expenses.

Continues overleaf…

LEGAL AND ADMINISTRATIVE DETAILS

The Trust is governed by a Deed of Trust dated 24th September 1965, amended on 1st June 1995, and is registered as an Educational Trust at the Department of Education under file number U.1725 ZZ/46. The Charity Commission Registered Number for the Trust is 1048552. The financial year of the Trust runs from 1st October each year.

The following were Trustees during the year:

Peter Chase (Chairman)
Christopher Lumb (Vice Chairman)
Professor Ann Muggeridge (College Consul for Engineering)
Dan Lehmann (Treasurer)
Nigel Cresswell (Hon. Secretary, CGCA)
Andrew Hill (Hon. Treasurer, CGCA)

Application Secretary:	John Collins
Meetings Secretary:	Colin Kerr
Registered Office:	c/o City & Guilds College Association, Level 1, Faculty Building, Imperial College, London SW7 2AZ
Bankers:	CAF Bank, 25 Kings Hill Avenue, Kings Hill, West Malling, Kent ME19 4TA
Asset Management:	Management of the Trust's investments is carried out by an Investment Sub-committee of the Trust Board comprising Christopher Lumb, Peter Chase, David Law, Prof. Robert Schroter, James Fok and Allan Lee
Investment Advisers and Custodians:	CCLA, 1 Angel Lane, London, EC4R 3AB Newton Investment Management, 160 Queen Victoria Street, London EC4V 4LA
Statutory Auditor:	Haines Watts, 4 Claridge Court, Berkhamsted, Hertfordshire, HP4 2AF

John Elliott Bursaries

Under the John Elliott Bursary Scheme, named after a former Honorary Secretary and Chairman of the Trust, (Alfred) John Elliott, FREng, FCGI, FICE, FWeldI (who studied Civil Engineering between 1940 & 1942), awards totalling £2,558 (22/23: £3,150) were made to key officers of the City & Guilds College Union (CGCU), to assist with the personal costs involved in fulfilling their duties for the Union. Given that some CGCU officers, who don't receive such a bursary, may nevertheless merit recognition, the Trust also supported 15 half-price tickets for CGCU officers to attend the CGCU Welcome dinner and 4 tickets to the CGCA Annual dinner. The Trust also funds a CGCU officer training day and assistance with food and drink expenses for officers' meetings. By the end of the year being reported, CGCU had claimed £1,375 (22/23: £1,210) of what was available to them under these extensions, not including the training day's cost of £1,673 (22/23: £1,770).

It is also worth mentioning under this heading, although provided from a different fund, that the Trust supports the Vice President of the CGCU during the summer months with a bursary of £2,500. This was applied for retrospectively this year, and awarded to two separate Vice Presidents in the amount of £1,250 each. This was not paid until after the Trust's year end and so £2,500 has been accrued (22/23: not taken up).

Awards for Student Projects, Sporting activities, Adventure and Travel

The number of applications received for intrepid adventuring was very nice to see. These included expeditions down the Danube and to Alaska, Canada, India, Kyrgyzstan, Sweden, Scotland and Wales.

Of particular note was a research project undertaken by a second-year student whose studies were interrupted by four months of jury service. The activity was a Design department project researching haptic feedback mechanisms in musical instruments. The result was an extraordinary 3D-printed handbell which plays sounds according to force and movement inputs.

The overall amount awarded this year was to 16 applications totalling £27,327 (22/23: 15 grants totalling £26,325).

Conference Travel for Postgraduates

Each year a certain proportion of budgeted funds go to support (mostly) postgraduate students in travelling to overseas conferences to present their research, whether by way of a poster display or a podium presentation. During the year £22,850 was awarded to 44 students (22/23: £18,800 for 41) – an average travel grant of £519 (22/23: £458) per student. This increase in the average was mainly due to a decision to lift the maximum possible allowance for post-graduate conference travel by £100 per application.

GENERAL

As reported last year, the Trust switched some of its investment funds under management from St James Place to CCLA during FY22/23. In this second full year of CCLA acting to replace St James Place, all cash previously retained was switched into CCLA's general Charity Fund. Their performance has been very good, if not quite as good as Newton – who continue to provide excellent returns. The increases during the year have been 10.4% by Newton and 8.5% by CCLA (22/23: 7.4% and 4.3%), even after accounting for £52k and £48k withdrawn respectively from the two funds.

ACKNOWLEDGEMENTS

The Old Centralians' Trust could not function smoothly without the freely given time of its officers and Board members, none of whom takes any remuneration or expenses. I would like to thank Vice Chairman Chris Lumb for his continued invaluable contributions, Professor Bob Schroter for his significant support in respect of hardship cases and Mr Colin Kerr for diligent management of our meetings. Particular mention and the sincerest of thanks go to Mr Dan Lehmann, Treasurer, and Mr John Collins, Applications Secretary, for their dedication to the continual stream of tasks that face them throughout the year. Many thanks also go to all our other Trust board members, especially for their input in reviewing the many applications we receive.

The Trust is also fortunate to have much valuable support from a large number of academic and administrative staff within the Faculty of Engineering, without which its work would be much less easy to fulfil. Grateful thanks are expressed to all those staff members who have been so generous with their time and advice.

AUDIT

The Board is pleased to have the expert services of Dux Advisory Ltd of Aylesbury, Buckinghamshire, as advisers and as auditor of the Annual Accounts.

The Accounts and this report for the year 2023-24 were approved by the Board and Trustees on 2nd July 2025, and duly signed on their behalf by me, as Chairman.

Peter Chase
Chair, Old Centralians' Trust

CGCA AGM 2025

The CGCA Annual General Meeting, AGM, was held on Saturday, 7th June 2025 in the Skempton Building on Imperial's South Kensington campus.

Your President, Professor Kelvin Higgins, opened the meeting with a retrospective of the last year. On the positive side, the Association held two very successful events. The Reunion Lunch attracted 25 – 30 people in November, 2024. For 2025, it has been agreed to keep the 5 & 10 year focus but groups from any year will be welcome by prior arrangement.

The Annual Dinner in March 2025 was a great success. Dr Dolores Bryne, Master Engineer of the Worshipful Company of Engineers was the speaker. Kelvin was pleased to announce that the 2026 Dinner will be on Friday 13th March at Grocers' Hall.

Less positive was the status of the membership survey, an initial step in defining the future direction of the Association. A number of members were surveyed, however both of the Committee members involved in the work have stepped down from the Committee and are difficult to contact to hand over the information collected.

Kelvin also raised the issue of communication with the membership. The rigours of GDPR continue to make timely and open communication a complex process and the Committee will review this during the coming year. It has also been decided that we will take a phased approach to receiving annual subscriptions by Direct Debit. Kelvin added that the subscriptions will be reviewed in 2025. For the organisation to move forward we need both more funds and more people time.

A major focus for the next year is to bolster the Departmental Representatives part of the Committee and make this a more effective channel to work at a Departmental level.

The 2024 Accounts had been circulated before the meeting and were reviewed. A timing issue between expenditure and income concerning the Annual Dinner made that event seem to make more of a loss than in previous years, however this will be resolved in the coming year's accounts.

The election of Association officers ran smoothly, and the 2025/26 Joint Committee is as shown in the table below.

Any Other Business topics included:

- Looking for new ways to communicate with the membership. Open ZOOM meetings were suggested.
- The Association should revisit the idea of having AGMs at a weekend.
- For the 2026 AGM, the event needs to be planned as soon as possible and communicated to the membership to encourage them to attend.

The meeting did not make the quorum set in the Articles of Association so the draft minutes were circulated to all members for whom we hold an email address and they were given three weeks to raise any comments/objections. As no objections were received, those minutes have now been declared final and all decisions made have been approved.

CGCA 2025/26 Joint Committee

Honorary Secretary:	Nigel Cresswell
Honorary Treasurer:	Allan Lee
Membership Secretary:	*vacancy*
Dep Hon Treas:	*vacancy*
Younger Members Secretary:	Tim Munday
Annual Dinner Event Manager:	*Post replaced by a group*
Decade Reunion Event Manager:	Peter Chase
Managing Editor IE:	Peter Buck
Rep on IC Exploration Board:	Colonel Kevin Oliver
Departmental Representatives:	
Aero Engineering:	*vacancy*
Bioengineering:	*vacancy*
Chemical Engineering:	Fatima Khan
Civil & Environmental Engineering:	Colin Kerr and Tim Munday
Computing:	*vacancy*
Design Engineering:	*vacancy*
Electrical & Electronic Engineering:	*vacancy*
Mechanical Engineering:	Owen Heaney

DEVELOPMENTS AROUND THE ENGINEERING FACULTY

Imperial launches Schools of Convergence Science

The new Schools of Convergence Science will help Imperial supercharge scientific discovery and drive economic growth. They will focus the university's world-leading strengths across science, technology and business on some of the most urgent global challenges.

Science and technology underpin every high-growth sector in the UK's industrial strategy. Imperial's Schools of Convergence Science will transform that foundation into faster progress, deeper innovation and stronger economic growth.

The School of Health and Technology, the School of Sustainability, the School of Space, Security and Telecoms, and the School of Human and Artificial Intelligence will create new research and innovation communities, where new ways of thinking arise from deep integration of disciplines and embedded systems-thinking. Rather than aligning to any one field, the Schools will be driven by ambitious missions – such as ultra-fast worldwide disaster relief, empathetic artificial intelligence, global clean air and water, and the widespread embedding of health diagnostics into everyday settings.

Convergence Science is a transformative approach to research – bringing together disciplines, sectors and methods to tackle society's most complex challenges. It moves beyond collaboration to deep integration, combining knowledge in novel ways to develop breakthrough tools, languages, models and, ultimately, solutions.

By breaking down the boundaries of traditional scientific disciplines and industry sectors, Imperial's Schools of Convergence Science will accelerate research and technological progress, building high-velocity, high-impact pathways from the lab to the real world. They will support adventurous thinking, entrepreneurial disruption and independent inquiry – where cross-sectoral partnerships and new research cultures lay the groundwork for emerging breakthroughs.

Imperial has a greater proportion of world-leading research than any other UK university. The Schools of Convergence Science are a central pillar of Imperial's Strategy, *Science for Humanity*, which launched last year and sets out how Imperial will maximise its potential as a force for good in the world.

Professor Hugh Brady, President of Imperial College London, said: "Every day, Imperial's staff, students and partners come together to interrogate the forces shaping our world, confront society's most urgent challenges, and shape a better future. That shared mission is at the heart of our success.

"These new Schools of Convergence Science will deepen our commitment to this cause – pursuing scientific progress and impact with exceptional energy, courage and scale to tackle the most complex problems of our time."

Professor Mary Ryan, Vice Provost (Research and Enterprise), said: "What world would we want to create for a future global citizen? How do we make sure they inhabit a planet and live in a society that is sustainable, healthy, safe and prosperous?"

dub.sh/IE43-Convergence

Photos courtesy of Imperial College, London

"The most intractable current global challenges – climate change, health inequality, digital security – are borderless and deeply interconnected. Imperial's new Schools of Convergence Science are designed to meet this complexity head-on. By uniting the full breadth of our university's excellence across science, engineering, business, and medicine, these Schools will act as 'constructive disruptors' to create powerful, integrated solutions with global impact. This is science reimagined, for a reimagined future, and for a world that demands bold thinking and transformative solutions."

Professor Mary Ryan
Vice Provost (Research and Enterprise),

The School of Health and Technology – led by Anthony Bull (Convener), Iain McNeish, Marisa Miraldo and Faith Osier – will drive convergence between disciplines, technologies and mindsets to shift the global conversation from treating illness to sustaining lifelong health across diverse populations, geographies and systems.

The School of Sustainability – led by Mirabelle Muûls (Convenor), Benjamin Barratt, Alyssa Gilbert and Nilay Shah – will accelerate solutions that drive both planetary health and human prosperity, in pursuit of a world where people can live meaningfully, prosperously and in harmony with the planet.

The School of Human and Artificial Intelligence – led by Alessandra Russo (Convenor), Payam Barnaghi, Will Branford and Aldo Faisal – will drive impact by augmenting intelligence of humans and machines to support and help humanity thrive. AI promises to augment human capabilities, automate complex tasks, and spark unprecedented progress in almost every field.

The School of Space, Security and Telecoms – led by Jonathan Eastwood (Convener), Kin Leung, Julie McCann and Matthew Santer – will explore three distinct themes: to connect, protect and know our worlds. Its work will set the global agenda at the intersection of these disciplines.

DEVELOPMENTS AROUND THE ENGINEERING FACULTY

Mars – interior more Rocky Road than Millionaire's Shortbread

New research by Imperial and NASA reveals the Red Planet's mantle preserves a record of its violent beginnings.

Textbook illustrations often picture rocky planets like Earth and Mars as having smooth, layered interiors – with crust, mantle, and core stacked like the biscuit base, caramel middle, and chocolate topping of a millionaire's shortbread. But the reality for Mars is rather less tidy. Instead, new research reveals it's chunky – more like a Rocky Road brownie.

Seismic vibrations detected by NASA's InSight mission revealed subtle anomalies, which led scientists from Imperial and other institutions to uncover a messier reality: Mars' mantle contains ancient fragments up to 4km wide from its formation – preserved like geological fossils from the planet's violent early history.

Mars and the other rocky planets formed about 4.5 billion years ago, as dust and rock orbiting the young Sun gradually clumped together under gravity.

Once Mars had largely taken shape, it was struck by giant, planet-sized objects in a series of near-cataclysmic collisions – the kind that also likely formed Earth's Moon.

"These colossal impacts unleashed enough energy to melt large parts of the young planet into vast magma oceans," said Dr Constantinos Charalambous from Imperial's Department of Electrical and Electronic Engineering.

"As those magma oceans cooled and crystallised, they left behind compositionally distinct lumps of material – and we believe it's these we're now detecting deep inside Mars."

These early impacts and their aftermath scattered and mixed fragments of the planet's early crust and mantle – and possibly debris from the impacting objects themselves – into the molten interior. As Mars slowly cooled, these chemically diverse lumps were trapped in a sluggishly churning mantle, like ingredients folded into a Rocky Road brownie mix, and the mixing was too weak to fully smooth things out.

Unlike Earth, where plate tectonics continuously recycle the crust and mantle, Mars was sealed up early, beneath a stagnant outer crust, preserving its interior as a geological time capsule.

"Most of this chaos likely unfolded in Mars' first 100 million years," says Dr Charalambous. "The fact that we can still detect its traces after four and a half billion years shows just how sluggishly Mars' interior has been churning ever since."

The evidence comes from seismic data recorded by NASA's InSight lander – in particular, eight especially clear marsquakes, including two triggered by two recent meteorite impacts that left 150-metre-wide craters in Mars' surface.

InSight picks up seismic waves travelling through the mantle and the scientists could see that waves of higher frequencies took longer to reach its sensors from the impact site. These signs of interference, they say, shows that the interior is chunky rather than smooth.

"These signals showed clear signs of interference as they travelled through Mars' deep interior," said Dr Charalambous. "That's consistent with a mantle full of structures of different compositional origins – leftovers from Mars' early days."

"What happened on Mars is that, after those early events, the surface solidified into a stagnant lid," he explained. "It sealed off the mantle beneath, locking in those ancient chaotic features – like a planetary time capsule."

Earth's crust, by comparison, is always slowly shifting and recycling material from the surface into our planet's mantle – at tectonic plate boundaries such as the Cascadia subduction zone where some of the plates forming the Pacific Ocean floor are pushed under the North American continental plate.

The lumps detected in Mars' mantle follow a striking pattern, with a few large fragments – up to 4 km wide – but many smaller ones.

Professor Tom Pike, who worked with Dr Charalambous to unravel what caused these lumps, said: "What we are seeing is a 'fractal' distribution, which happens when the energy from a cataclysmic collision overwhelms the strength of an object. You see the same effect when a glass falls onto a tiled floor as when a meteorite collides with a planet: it breaks into a few big shards and a large number of smaller pieces. It's remarkable that we can still detect this distribution today."

The finding could have implications for our understanding of how the other rocky planets – like Venus and Mercury – evolved over billions of years. This new discovery of Mars' preserved interior offers a rare glimpse into what might lie hidden beneath the surface of stagnant worlds.

Co-author Carys Bill, a second year PhD researcher in the Department of Earth Science and Engineering who contributed to the data analysis during her Master's, said: "Even with the rich seismic data we have about the Earth, the high levels of moisture within our planet means signals are absorbed before they can reach deep inside. That means we can't tell for sure if Earth's mantle hides similar preserved lumps – or if Mars' interior is truly different. Having this insight into Mars is therefore a rare window into the hidden workings of rocky planets."

"InSight's data continues to reshape how we think about the formation of rocky planets, and Mars in particular," said Dr Mark Panning of NASA's Jet Propulsion Laboratory in Southern California. JPL led the InSight mission before its end in 2022. "It's exciting to see scientists making new discoveries with the quakes we detected!"

The research was published in the journal *Science*, (DOI: dx.doi.org/10.1126/science.adk4292) and carried out by Dr Constantinos Charalambous and Professor Tom Pike from the Department of Electrical and Electronic Engineering, with Dr Doyeon Kim and PhD researcher Carys Bill from the Department of Earth Science and Engineering, and Physics Alumnus Dr Benjamin Fernando who is now at Johns Hopkins University in the United States. The French national research institution CNRS contributed to the research through the Université Paris Cité, Institut de physique du globe de Paris.

dub.sh/IE43-Mars-interior

Photos courtesy of P Buck

In order to better digest this important research, your selfless editor has exercised due diligence and undertaken a thorough investigation of the composition, and taste, of both Rocky Road (left) and Millionaire's Shortbread (right), including (inset) the effects of incision and comminution – Conclusion... both delicious!

DEVELOPMENTS AROUND THE ENGINEERING FACULTY

Mars – simple test for life

PhD student Solomon Hirsch and his supervisor Professor Mark Sephton, from Imperial's Department of Earth Science & Engineering, have realised that an existing instrument, already on the Mars Curiosity rover and planned for future use on the ExoMars Rosalind Franklin rover, could be used to detect signs of life at a fraction of the cost of developing new missions and instruments.

It has the potential to be used to detect living organisms on other planets or moons. The instrument, called a gas chromatograph-mass spectrometer (GC-MS), has been installed on Martian probes since the mid-1970s with early versions on the Viking I and Viking II landers. Solomon and Mark determined that it could be used to detect a chemical bond within cell membrane molecules that are found in many living, and very recently deceased, organisms.

"Space Agencies such as NASA and ESA don't know their instruments can already do this," said Professor Sephton. "Here we have developed an elegant method that rapidly and reliably identifies a chemical bond that shows the presence of viable life," he says. "The Curiosity rover just turned 13 on Mars, but who says you can't teach an old dog new tricks?"

The method detects a unique sequence of atoms that bind the constituent molecules of the external membranes of living bacteria and eukarya cells. These constitute the vast majority of biological matter on Earth and include the kinds of lifeforms that scientists would also expect to find beyond our planet.

The signatures of these bonds found in molecules called intact polar lipids (IPLs) show up as a clear spike in a graph produced by the GC-MS instrument.

Solomon says: "When we put the IPL compounds into our GC-MS we didn't know what to expect because these compounds are usually analysed using other techniques. The characteristic signature we identified provides a clear indicator of viable life using space-ready equipment already in use on many extraterrestrial missions. If we find signs of life beyond Earth, the first question will be: is it living right now? It's thrilling to think that the technique we developed here could be used to help answer that question."

Photo courtesy NASA

Curiosity rover on Mars

Once an organism dies, its IPL bonds disintegrate within hours, after which time they can no longer be detected, and a spike no longer appears in the instrument readout.

Professor Sephton says, "Our active life detection method could be deployed on Mars and the plumes of icy moons in the outer solar system from where the data can be sent back to Earth for interpretation, or in samples returned to Earth from potential alien biospheres."

Solomon says: "Our expectation of finding things alive on the surface is low … future missions such as the ExoMars mission plan to drill metres deep into the surface of the planet where the likelihood of finding active life is significantly higher."

dub.sh/IE43-Mars-life

Mars – biosignatures of past life

An international team, led by NASA and including researchers from the Department of Earth Science and Engineering (ESE) at Imperial, propose that various geological features in a crater on Mars are connected to organic carbon, and could be potential biosignatures of past life.

Professor Sanjeev Gupta, Professor of Earth Science in ESE, and Academic Co-director of Imperial Global India, said: "This is a very exciting discovery of a potential biosignature but it does not mean we have discovered life on Mars. We now need to analyse this rock sample on Earth to truly confirm if biological processes were involved or not."

A core component of NASA's Mars 2020 mission, the Perseverance Rover has been exploring the 45-kilometre-wide Jezero Crater since 2021, a site chosen because it once held a huge lake and a river delta – environments that are considered prime targets in the search for signs of past life. Its key goal is to collect and store the first set of selected rock and soil samples that will be brought back to Earth for detailed analysis.

The new study, published in *Nature*, focuses on a distinctly light-toned outcrop in the crater, dubbed 'Bright Angel', located within an ancient river valley which provided water to the Jezero lake. While driving through the valley, Perseverance came across a thick succession of fine-grained mudstones and muddy conglomerates. Here, it conducted a detailed analysis of these rocks, using onboard instruments.

By mapping the types and distributions of different sedimentary rocks at Bright Angel, ESE researchers (including Professor Gupta and Dr Robert Barnes, a Research Associate in ESE, who were both funded by the UK Space Agency), were able to reconstruct the environment in which these mudstones were deposited.

Their analysis revealed a range of sedimentary structures and textures indicative of lake margin and lake bed environments, including a composition rich in minerals like silica and clays – the opposite to a river scenario, where fast-moving water would carry these tiny particles away. They had found lake deposits in the bottom of a river valley.

Co-author Alex Jones, PhD researcher in ESE and collaborating scientist with the NASA Perseverance team, conducted a detailed analysis of the ancient environment. "This is unusual but very intriguing, we wouldn't expect to find such deposits. What our sedimentological and stratigraphic work has done is indicate a past, low-energy lake environment – and that is precisely the kind of habitable environment we have been looking for."

This suggests a period in the history of Jezero Crater where the valley itself was flooded, giving rise to this potentially habitable lake.

Next the Perseverance team turned their attention to the mudstones. Inside these rocks they discovered a group of tiny nodules and reaction fronts, with chemical analysis revealing that these millimetre-scale structures are highly enriched in iron-phosphate and iron-sulfide minerals (likely vivianite and greigite). These appear to have formed through redox reactions involving organic carbon, a process that could have been driven by either abiotic or biological chemistry. Since these ingredients mirror by-products of microbial metabolism seen on Earth, it can be considered a compelling potential biosignature, raising the possibility that there was once microbial life on Mars.

dub.sh/IE43-Mars-lake

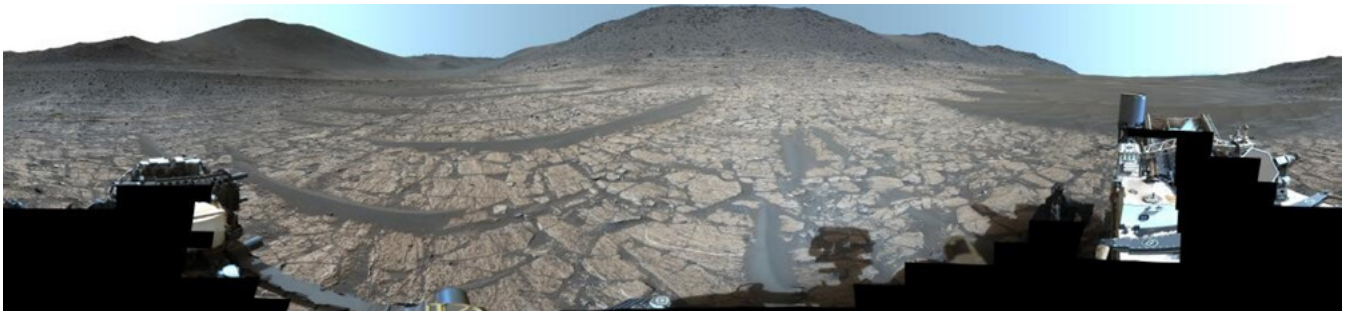


Photo courtesy NASA/JPL-Caltech/MSSS/ASU

Perseverance captured this 360-degrees photo of 'Bright Angel'

DEVELOPMENTS AROUND THE ENGINEERING FACULTY

King's Birthday Honours

Three members of Imperial's community have been celebrated in the King's Birthday Honours list for this year:

Photos courtesy of Imperial College, London

Professor Sir Vernon Gibson a Visiting Professor in the Department of Materials, receives a knighthood for services to science and defence. He spent two periods as Chief Scientific Adviser to the Ministry of Defence (2012-2016 and 2023-24) and time in No10 as an adviser to the Integrated Review Taskforce (2020). Prior to his Government work he was a Chief Scientist at BP (2008-2012) and The Sir Edward Frankland Professor of Inorganic Chemistry in the Department of Chemistry.

Professor Gibson spent almost 30 years as an academic scientist pursuing a research career that took him from the University of Oxford to the California Institute of Technology, to the University of Durham and finally to Imperial College London. His field of expertise is molecular organometallic chemistry, which he studied from fundamental and applied industrial perspectives. His contributions have been recognised with numerous awards and by his election to the Fellowship of the Royal Society in 2004.

Throughout his academic career he has worked closely with industry, developing a deep and flexible partnership with BP which led to the setting up of a pioneering joint discovery project at Imperial. He played an instrumental role in establishing BP's International Centre for Advanced Materials, a 10- year, $100M investment at Imperial and the Universities of Manchester, Cambridge, Illinois at Urbana-Champaign.

Professor Gibson now draws on his experience of science and technology across academia, industry and government to foster partnerships at the interfaces of these sectors.

Professor Gibson said: "I feel greatly privileged to be honoured in this way and pay tribute to the many talented scientists and engineers who I've been fortunate to work alongside in academia, industry and government."

Professor Dafydd Thomas, Professor Emeritus of Clinical Neuroscience in the Faculty of Medicine, receives an OBE for services to clinical neuroscience.

Professor Pankaj Sharma, Principal Clinical Teacher in the Faculty of Medicine, receives an OBE for services to research in strokes in South Asian people.

Two former members of Imperial's community have also received honours.

Chi Onwurah MP, who graduated from Imperial in 1987 with a degree in Electrical Engineering, has become a Dame, receiving a DBE.

Professor Gordon Dougan, now at the University of Cambridge, who was the founding Director of the Centre for Molecular Microbiology and Infection at Imperial, receives an OBE.

dub.sh/IE43-Honours

Royal Society medals

Three Imperial academics from Physics, Chemical Engineering and Mathematics have been awarded Royal Society medals.

Professor Sir John Pendry FRS, Professor Sir Martin Hairer FRS, and Professor Jason Hallett are among 27 new Royal Society medal and award winners recognised for their outstanding contributions to scientific discovery.

Professor Sir John Pendry FRS, father of metamaterials and 'invisibility cloak' pioneer, has been awarded the world's oldest scientific prize, the Royal Society's Copley Medal. Previous winners include Louis Pasteur, Dorothy Hodgkin, Albert Einstein, Stephen Hawking and Charles Darwin.

Professor Sir Martin Hairer FRS developed the theory of regularity structures which gives a precise mathematical meaning to many equations that have previously sat outside the scope of mathematical analysis.

Professor Hairer said: "I'm deeply honoured to be awarded the Sylvester Medal by the Royal Society. It is very rewarding to see my work recognised by the mathematical community, and I'm grateful for the many collaborations and conversations that have shaped my research over the years."

Photos courtesy of Imperial College, London

Professor Jason Hallett in the Department of Chemical Engineering has received the Mullard Medal in recognition of his pioneering work on the development of ionic liquids as commercially relevant solvents in biorefining and the circular economy.

Professor Hallett said: "I could not be more thrilled to be awarded the Mullard Medal. The history and prestige of the Royal Society is unparalleled. I am humbled to be recognised with this medal."

Looking ahead, he believes that biorefining and recycling are set to play a pivotal role in shaping a sustainable future.

"It's an exciting time for biorefining and recycling because of how well these areas match up with advances in renewable energy, biotechnology and hydrogen. These aspects make biomass and waste more attractive feedstocks than ever, and they should play a central role in displacing fossil carbon," he said.

"The highlights for me have absolutely been the students I have worked with over the years. Most of our innovations and all of the drive toward commercial translation has come about because of their brilliance and hard work."

dub.sh/IE43-RS-Medals

DEVELOPMENTS AROUND THE ENGINEERING FACULTY

Royal Academy of Engineering honours

The Royal Academy of Engineering has elected 74 leading figures in the field of engineering and technology to its Fellowship in 2025, including Professor John A. Kilner.

Photos courtesy of Imperial College, London

Professor John A. Kilner is Senior Research Investigator in the Department of Materials, where he previously held the BCH Steele Chair of Energy Materials. He has also served as Head of the Department of Materials and Dean of the Royal School of Mines and is a Professor at the International Institute for Carbon Neutral Energy Research (I^2CNER) at Kyushu University in Japan.

His research has helped explain how oxygen moves through the ceramic materials used in fuel cells and other clean energy technologies. This understanding has made it possible to build more efficient fuel cells and electrolysers that generate electricity with lower emissions.

Beyond academia, Professor Kilner co-founded Ceres Power Ltd, a company whose technology underpins cleaner power generation and the production of green hydrogen.

Professor Kilner has been recognised with awards including the IOM3 Platinum Medal, the Imperial College Medal, and the Senior Scientist Award of the International Society for Solid State Ionics.

Professor Kilner said: "I'm delighted to have been elected a Fellow of the Royal Academy of Engineering. This is the culmination of many years of sustained research. I have been part of the scientific effort at I^2CNER focussed on this topic since its inauguration in 2010, and my work here, and in my home base in Materials at Imperial, has been important in the successful development of these devices. I look forward to a long and continued association with Kyushu University and I^2CNER."

Fellowship was also granted to **Professor David Gann**, who was Imperial's Vice-President (Innovation) from 2013-2019 playing a central role in developing the strategy for our 25-acre White City Campus and the development of the Imperial ThinkSpace . He is now Emeritus Professor of Innovation and Technology Management at Imperial Business School.

An Honorary Fellowship was granted to **Dame Maggie Aderin-Pocock**, Imperial Alumna (Physics 1990, PhD Mechanical Engineering 1993). A space scientist, science communicator, business founder and long-term presenter of BBC's *The Sky At Night*, she was also awarded our Distinguished Alumni Award in 2025.

Two of the four winners of the RAEng Engineers Trust Young Engineer of the Year competition are from Imperial.

Miguel Martinez Paneda is a Principal Structural Engineer at Arup and PhD student in the Department of Civil and Environmental Engineering.

Miguel is an expert in structural dynamics, earthquake and wind engineering and has worked for two of the UK's top design firms: Foster & Partners and Arup. His path to becoming a structural engineer was unusual in that his first degree was in Architecture. That hasn't hindered him from winning numerous design competitions and creating prize-winning designs for a series of iconic tall buildings around the world.

He has made innovative contributions to research that have led to the development of a new damper design for super tall buildings that uses part of their own mass to dampen their movement and is awaiting patent approval. He has also convened academics from within the disciplines of Civil Engineering and Aeronautics with practitioners from industry to consider these new approaches to the design of tall buildings.

Miguel said: "I am deeply honoured to receive this award and thankful to all my colleagues at Arup and Imperial for their support. I have aimed to bring research and professional practice together with bold ambitions and believe this award recognises how structural engineering can contribute to advancing design and creating more sustainable, innovative solutions."

Dr Calvin Tsay is an Associate Professor in the Department of Computing. A leading inter-disciplinary engineer at Imperial, he is building new computing tools in optimisation and machine learning. He is deploying these tools to tackle large-scale problems in energy systems and sustainability.

He leads an independent research group that contributes industrially relevant research such as OMLT, award-winning open-source software and tools for green hydrogen system design. He has authored 50 peer-reviewed publications and collaborated with industry on energy flexibility and AI security and privacy.

Calvin said: "With all the impressive advances in AI models in recent years, I'm most excited by how AI tools can help address longstanding challenges in process and energy systems: how to design more sustainable processes, integrated energy systems, and resilient engineering systems."

Dr Tian Yuan from the Department of Mechanical Engineering was awarded the Royal Academy of Engineering Research Fellowship to develop a new computational framework that can visualise fluid and substances transport in the brain directly from MRI scans.

Supported by this fellowship, Dr Yuan will investigate how fluids and molecules move through the narrow spaces between brain cells – a process called interstitial transport. This process is essential for brain functions such as sleep and memory, and when it breaks down, it can lead to serious neurological conditions including Alzheimer's disease. It also plays a key role in emerging methods for targeted drug delivery to the brain.

His research will create a predictive platform that combines mathematical and physical modelling with medical imaging to visualise these hidden processes for the first time. The long-term goal is to develop early-detection techniques for Alzheimer's disease and open new avenues for brain therapies, providing unprecedented insights into brain health.

Dr Yuan said: "I am deeply honoured to receive this fellowship. It is … an opportunity to advance research in brain biophysics, biomechanics, and modelling … This fellowship enables me to develop novel engineering approaches to better safeguard human health."

dub.sh/IE43-RAEng

DEVELOPMENTS AROUND THE ENGINEERING FACULTY

RSC honours

Researchers from Imperial have been awarded prizes by the Royal Society of Chemistry in the RSC's most recent round of awards.

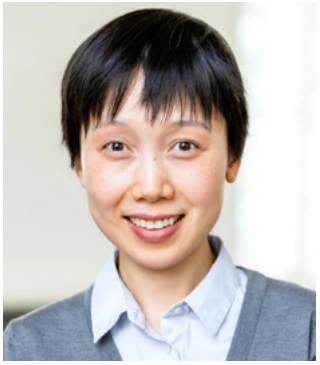
Photos courtesy of Imperial College London

Professor James Calder: Faraday Horizon Prize

The RSC Faraday Prize Committee has elected to award a 2025 Horizon Prize for advancing the understanding of the physicochemical properties of exhaled aerosols, and their impact on the transmissibility of respiratory pathogens to a team including Professor James Calder.

Professor Calder is a consultant orthopaedic surgeon and Visiting Professor in the Department of Bioengineering at Imperial. He specialises in research into sports injuries and his clinical practice centres on the treatment of elite athletes. After qualifying in medicine from the London Hospital, he trained as a surgeon and completed his Doctorate of Medicine with Professor Julia Polak at Imperial College in 2001 and then his PhD at Amsterdam University in 2017. He is past Chair of AFAS in the European Society of Sport Traumatology and Knee Arthroscopy (ESSKA) and serves on the council of several international scientific sports committees. Professor Calder was appointed the Clinical Lead of the Nightingale Hospital London during the COVID-19 pandemic and chaired the UK government committees which opened professional sports during the initial lockdown. He was also appointed Scientific Advisor by the Secretary of State, Department of Culture Media and Sport to the Culture Recovery Fund & was responsible for several initiatives to re-start return of spectators and opening of the Performing Arts and recreational sports across England. During this role, he co-ordinated the research groups investigating aerosol generation during exercise, singing and the playing of wind instruments as part of the 'PERFORM' study.

Professor Calder subsequently chaired the committee which published the UK Guidance on Concussion in Grassroots Sport in 2023, that has subsequently been adopted in Australia, New Zealand, Holland and influenced FIFA. He was appointed OBE for exercise and sport in 2020.



Dr Chun Ann Huang: Faraday Early Career Prize

Dr Huang earned recognition for pioneering the combination of imaging with X-ray Compton scattering and computed tomography (XCS-CT), and novel processing to unravel and control ion transport in 3D structures.

Dr Huang completed her undergraduate study in Materials Science and Engineering (First Class Honours) at Imperial and PhD in Materials Science at the University of Oxford. She was a Lecturer in Engineering at King's College London, and Senior Lecturer and Reader (Associate Professor) in Energy Storage Materials at the Department of Materials, Imperial. Ann's research focuses on developing new materials, operando X-ray correlative imaging, and processing technologies for lithium-ion batteries and next generation batteries such as solid-state, sodium-ion, lithium-sulfur. She has been awarded the ERC Starting Grant, the UKRI EPSRC Innovation Fellowship, and the Faraday Institution Industry Fellowship. She is a co-investigator of the multi-million Faraday Institution Degradation and Nextrode programmes.

Professor Kim Jelfs, in the Department of Chemistry, won the Corday-Morgan Mid-Career Prize for innovation in the computational discovery of organic materials through the use of both molecular simulations and AI techniques.

dub.sh/IE43-RSC

Thermophysics award

Professor J. P. Martin Trusler and **Dr Riley V. Latcham** have been jointly awarded the 2025 Ared Cezairliyan Best Paper Award.

Their paper,"Phase Behavior of Isobutane + CO_2 and Isobutane + H_2 at Temperatures Between 190 and 400 K and at Pressures Up to 20 MPa" *Int J Thermophys*, **45**,13 (2024), was selected for its outstanding contribution to the understanding of thermophysical properties under extreme conditions.

Commenting on the paper, Professor Trusler said: "Fundamentally, this award recognises Riley's outstanding, careful and insightful PhD research; it's been a huge pleasure to have him working with us."

The awarded paper introduces new experimental data and advanced modelling (via the Peng-Robinson equation of state), providing critical insights into isobutane-based mixtures.

These findings have immediate implications for refrigeration systems, hydrogen transport, and high-pressure fluid technologies.

Named after the founding editor of the *International Journal of Thermophysics*, the Ared Cezairliyan Award celebrates exceptional thermophysics research. This year's prize was selected from over 170 submissions published in 2024. Winners receive a €1,500 cash prize and will be formally presented with the award at the 2025 Asian Thermophysical Properties Conference, taking place in October 2025 in Shanghai.

Dr Riley V. Latcham's research focuses on thermodynamic characterisation and computational modelling of complex fluid mixtures. He holds an MEng in Chemical Engineering from Imperial and has co-authored multiple peer-reviewed publications.

Professor J. P. Martin Trusler FREng, a leading expert in thermophysical measurements, leads Imperial's high-pressure fluids group. He is a Fellow of the Royal Society of Chemistry and an Associate Fellow of the IChemE and has published extensively on fluid phase behaviour under extreme conditions.

dub.sh/IE43-Ared

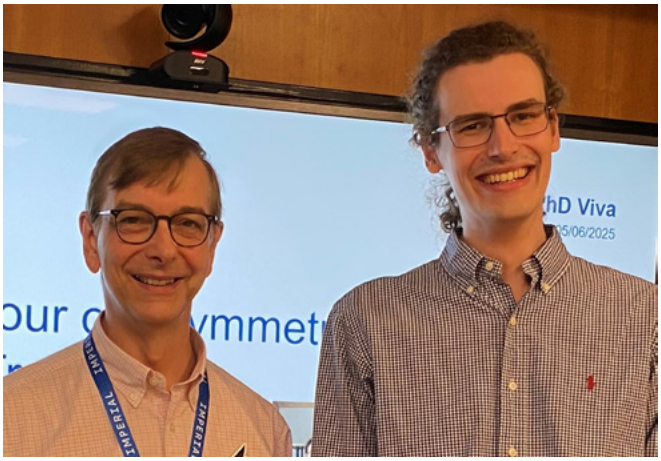


Photo courtesy of Imperial College London

Professor J. P. Martin Trusler *(left) and* Dr Riley V. Latcham (right)

NASA award

A joint team from NASA Ames Research Center, Tohoku University, and Imperial has been recognised with their second NASA Group Achievement Award for advancing Martian rotorcraft aerofoil research. Among the awardees are **Dr. Lidia Carós Roca**, **Professor Oliver Buxton**, and **Professor Peter Vincent** from Imperial's Department of Aeronautics.

The citation recognises the team "for conducting the first experimental test program to assess next generation rotor airfoil designs that will provide substantial leaps in mission performance for future rotorcraft on Mars. This test program demonstrated and reported the large benefits of these new airfoil designs relative to the airfoils used on the Mars Ingenuity Helicopter rotor."

The experiments were conducted in the Tohoku University Mars Wind Tunnel. The resulting dataset will guide the design of future Mars rotorcraft.

dub.sh/IE43-Rotorcraft

DEVELOPMENTS AROUND THE ENGINEERING FACULTY

Imperial retains positions at top in QS 2026 university rankings

Imperial has kept its position as the UK and Europe's top university in the QS World University Rankings.

QS has consistently recognised Imperial as one of the world's top ten universities and this year highlighted Imperial's approach to sustainability, the employability of our graduates and academic excellence.

Imperial's President, Professor Hugh Brady, said: "This is a powerful endorsement of the talent, dedication and ambition that defines the Imperial community.

"Every day, our students, staff and partners come together to interrogate the forces shaping our world, confront society's most urgent challenges, and shape a better future. That shared mission is at the heart of our success.

"This global recognition comes at a pivotal time, as we prepare to launch our Schools of Convergence Science – an ambitious initiative to create deeply integrated research and innovation communities to drive transformative impact across health, climate, AI, security and beyond."

Imperial College Union President, Camille Boutrolle, said: "It's so exciting to see Imperial recognised on the global stage again. I know the Imperial community is beaming with pride, students, staff and alumni alike."

For the first time, universities were also ranked for their success in attracting students from a wide range of countries and backgrounds. This year Imperial has demonstrated its strong commitment to building long-term international research and education collaborations by bringing Bengaluru, San Francisco and Accra into its Imperial Global network, alongside its existing Singapore hub.

The new ranking came as the university prepared to launch its cross-sectoral Schools of Convergence Science, first announced in Imperial's Science for Humanity strategy last year.

The Schools will focus the university's unique strengths across science, technology and business on some of the world's most urgent challenges. They will create deeply integrated research and innovation communities focused on finding solutions to key societal problems and delivering economic growth.

Meanwhile, Imperial Business School has retained its world number one position for its Global Online MBA in the 2026 QS rankings of business school degrees.

Imperial was recognised as world-leading by QS for the second year in a row for the strength of its Global Online MBA. The QS Online MBA ranking includes 126 programmes from 27 locations around the globe.

The institution was acknowledged for the quality of its learning experience and high success rate in helping graduates find employment.

Professor Peter Todd, Dean of Imperial Business School said: "This is a wonderful recognition of our long-standing commitment to innovation in digital education. Imperial was among the first business schools to offer fully online programmes and we continue to deliver one of the world's leading online MBAs."

The Business School was also recognised by QS for its other master's programmes.

The MSc Management entered the QS global top 10 rankings and the institution was ranked seventh for its MSc Strategic Marketing, eighth for its MSc Business Analytics, fourteenth for the MSc Finance and nineteenth for its Full-Time MBA.

Together these QS rankings highlight the employability of Imperial's graduates as well as academic excellence.

dub.sh/IE43-QS-2
dub.sh/IE43-QS-BS

New UK innovation centre for brain-inspired computing

Imperial researchers will be part of a new Innovation and Knowledge Centre (IKC) for neuromorphic – brain-inspired – computing hardware. The centre, known as Neuroware, is being supported by £12.8 million from the Engineering and Physical Sciences Research Council (EPSRC).

Led by University College London it launched in October 2025, and over the next five years will accelerate the development and commercialisation of next generation computing technologies that mimic how the brain processes information.

The IKC brings together researchers from across the UK, including the universities of Cambridge, Oxford, Manchester, Sheffield, Imperial College, King's College London, and Strathclyde, as well as the National Physical Laboratory.

Together, they will drive innovation across a range of chip technologies and the supporting software – from today's silicon-based processors, to emerging materials for future chips, and light-based (photonic) neuromorphic platforms.

Imperial's role will be led by EEE Professors George Constantinides, Tim Constandinou and Christos Bouganis.

Neuromorphic computing is an approach to computation that takes inspiration from the brain's structure and function to deliver efficient, high processing performance with dramatically lower power consumption – a key challenge for the future of computing in an AI-enabled world.

Professor Constantinides explains, "Current computer designs still follow the body-and-brain split introduced by John von Neumann in the 1940s: memory is separate from the processor, and data must endlessly shuttle back and forth. This 'memory bottleneck' is emerging as a critical speed and energy barrier especially in AI because feeding and moving vast model parameters slows everything down and burns power. In a world where artificial intelligence demands near-instinctive, real-time data crunching, we need systems that think and act more like brains – integrating memory and computation to bypass this processing roadblock. That's why researchers are exploring in-memory, neuromorphic, and other non-von Neumann architectures – to build machines that can learn smarter, faster, and greener."

Imperial's initial portion of the grant will help develop design methods, software tools and new custom hardware, building on the Department's world-leading expertise in non-von Neumann computation.

Professor George Constantinides specialises in software design tools and methods that help map brain-inspired algorithms on to new types of hardware. His expertise in high-level synthesis, reconfigurable computing, and non-von Neumann architectures directly supports the IKC's mission to create energy-efficient, application-driven neuromorphic hardware.

Professor Tim Constandinou works at the interface of hardware and neuro-science, developing custom chips and devices that directly mimic neural behaviour. His work ensures the IKC can translate insights from neuroscience into manufacturable, implantable, and embedded neuromorphic systems.

Professor Christos Bouganis focuses on reconfigurable hardware platforms (such as FPGAs), where new architectures can be tested, refined, and prototyped. He contributes specialist knowledge in FPGA prototyping, adaptive computing, and system-level integration, bridging the gap between device-level innovation and large-scale demonstrators.

Together, the EEE team positions Imperial as a key partner in the IKC, enabling the translation of cutting-edge research into applications for high-impact neuromorphic technologies.

dub.sh/IE43-IKC

Photos courtesy of Imperial College, London

DEVELOPMENTS AROUND THE ENGINEERING FACULTY

President Macron launches Imperial-CNRS joint laboratory

The President of France, Emmanuel Macron, visited Imperial's South Kensington campus as part of his state visit in July, to meet the engineers who will lead a new joint engineering laboratory between Imperial and France's CNRS. He spoke about the growing UK-French scientific partnerships.

The new laboratory, the Ayrton-Bleriot Engineering Lab (ABEL), will harness AI and emerging technologies across all engineering disciplines with a mission to develop transformative solutions for sustainability and resilience. The lab will bring together some of the world's most eminent engineers to develop proposals for major projects that could rapidly advance UK and French strategic priorities.

Professor Hugh Brady, President of Imperial College London, said: "From Concorde to the Channel Tunnel, UK-French collaboration has produced iconic engineering feats that defied limits and shaped history. The Ayrton-Bleriot Engineering Lab embodies this spirit, uniting world-leading expertise to spark a new era of engineering discovery. Imperial and the CNRS will harness AI and emerging technology to transform engineering and lay the foundations for generation-defining innovations in sustainability and resilience."

Antoine Petit, CEO and chairman of the French National Centre for Scientific Research (CNRS), said: "On behalf of the CNRS, I am truly proud and delighted to celebrate the launch of this new International Research Laboratory ABEL with Imperial College London. While many joint projects between CNRS and Imperial are already underway in the field of engineering, ABEL will provide them with a long-term, high-level structure to thrive and grow. One of the main challenges of this new laboratory is to develop original, cutting-edge research in line with the United Nations Sustainable Development Goals. Its interdisciplinary scope including development of sustainable materials, cleaner and safer processes, as well as artificial intelligence for engineering will contribute to tackle major societal challenges."

This latest collaboration with the CNRS reaffirms Imperial's commitment to co-creating world-leading science and technology with its partners in Europe and around the world.

Photos courtesy of Imperial College, London

President Macron was welcomed to Imperial by President Hugh Brady and Imperial's Chair of Council Vindi Banga

ABEL's interdisciplinary approach extends beyond traditional engineering boundaries to encompass experiments, theory and computing, creating a comprehensive research ecosystem capable of addressing complex, multi-faceted problems and fostering rapid progress from discovery to prototype.

The initial areas of research which the lab will focus on include quantum technologies, AI-driven engineering, advanced materials, clean and efficient processes, energy security and sustainable computing, and health technology applications. This research will address critical needs in sensing, communication, energy, and diagnostics. The research team believes the collaboration could also help drive advancements in health technology – such as sensors and diagnostics for cancer and other diseases.

The scientists will use automated AI-powered pipelines to accelerate materials discovery, while optimised catalysts and reactor designs will drive scalable green hydrogen production and make industrial processes safer and cleaner.

Aviation is another area of interest which researchers will explore by developing new types of sustainable fuel and investigating ways to make aircraft more efficient and reduce their emissions.

The CNRS is the only French organisation active in all scientific fields and a major player in basic research worldwide with an extensive network of 1,100 research labs across France and abroad and more than 29,000 scientists.

The new laboratory will be hosted at Imperial and will improve mobility for researchers between France and London, with French scientists embedded at Imperial for up to five years and opportunities for Imperial scientists to spend time in French labs.

Embedded within Imperial's Schools of Convergence Science, ABEL benefits from cross-disciplinary collaboration, ensuring its breakthroughs translate swiftly into real-world solutions that deliver tangible benefits to society and the planet.

The lab will be led by Professor Eric Climent, CNRS Director of ABEL, and Professor Fang Xie, Imperial Director of ABEL.

dub.sh/IE43-ABEL

The Ayrton-Bleriot Engineering Lab was launched by the CNRS and Imperial. The lab is named after English engineer and inventor Hertha Ayrton and French aviator and engineer Louis Blériot.

Ayrton became the first woman member of the Institution of Electrical Engineers and was known for her research into the electric arc and ripples in sand and water. In 1906 despite being unable to be a member due to her gender, the Royal Society awarded her the Hughes Medal (the first and, until 2020, only female recipient). In March 2010 she was named by the Royal Society as one of the ten most influential British women in the history of science.

Blériot was a pioneer in aircraft design and made the first aeroplane flight across the English Channel in his Type XI monoplane, connecting the UK and France via air travel for the first time.

Geology Society Seniors' Trip

With support from RSMA, the Geology Society ran a trip to Snowdon and Anglesey between the 16th and 20th of June. It was a huge success with 17 graduating students attending, and heaps of positive feedback from the trip attendees. Beth Jones, President of the Geology Society told us about their experience.

After arriving at the Imperial College Mountaineering Hut on the Tuesday evening, following a long day of driving (enabled by some incredible driving volunteers!), we enjoyed a classic Geol Soc spag bol. We then got down to socialising business and spent the evening playing card games and chatting!

On Wednesday morning, after a gentle start, we headed out towards Anglesey to do some classic North Wales tourism. On the way to our beach day at Rhosneigr, we stopped off at the Llanfairpwllgwyngyll train station to take a group picture with the sign! On Anglesey, we made the most of the rare Welsh sunshine and spent the day on the beach, featuring sea swims, socialising, reading and some much needed ice cream! We then finished off the day in Bangor having a group dinner out.

On Thursday, we woke up bright and early to tackle Snowdon (Eryri). We took it nice and slow, because it was very hot, but the whole group made it up in under 2hrs 30 minutes for a group lunch at the top with the stunning view – we managed to catch Eryri on a super clear day so the view was spectacular! After the walk down, we headed to the pub at the start of the path for some much needed refreshments, and then headed back to the hut for a BBQ style dinner! To finish the trip off, we did some DIY t-shirt decorating in a primary school leavers day style, and wrote nice messages on each other's tees to remember all the good times we have had in the RSM!

Photos courtesy of Geology Society

Friday saw us making our gentle way back to London after a speedy group cleaning session!

We feel that the trip really served its purpose to celebrate the end of our degrees in such a beautiful landscape, and everyone had a great time! We are all so grateful to the RSMA committee for helping us make this trip happen, and have all got some lovely memories from it – thank you very much! And a huge thank you from myself and Amy for all your help over the past two years!

"Imperial is a big tent"

Inside Imperial's new alumni engagement and philanthropic vision

Imperial College London's alumni engagement is undergoing a thoughtful evolution, connecting student experiences with lifelong belonging and impact. Kristin Blanchfield, Imperial's Vice President for Advancement, who leads fund raising and alumni engagement, sat down for a wide-ranging conversation with Roger Preece, City and Guilds College Association Vice President, and outlined how Imperial is deepening ties from offer letter to long after graduation, how philanthropy aligns with the College's Science for Humanity Strategy, and why the institution's growing global reputation is opening new channels for support and community.

Belonging starts early

Blanchfield emphasises that alumni engagement is a lifelong journey that begins as soon as a student receives their offer. Students can engage in the advancement work through volunteering at alumni events and taking on paid roles with the advancement office. The Advancement team also shares stories of the impact of scholarships for individual students and their work to encourage alumni support. Students develop through their time an understanding of Imperial's culture of curiosity, effort and excellence that extends into their alumni experience.

The alumni experience goes far beyond fundraising

There are so many ways that alumni can engage with college life. There are opportunities for networking and supporting career transitions with fellow alumni. The ongoing learning programmes through public talks and formal programmes offered by Imperial's lifelong learning work, all allow alumni to receive ongoing support and connection to Imperial's work. Communication about institutional achievements allows alumni to feel a sense of pride in their University and encourages a desire to connect and support.

It is also good to see the ongoing social connections that develop through student life and through ongoing departments, society and the Constituent College Alumni organisations.

Blanchfield sees room to expand family engagement, particularly for undergraduates, and to better map access points into the alumni community so students and recent graduates can find accessible entry points to participate.

Photo courtesy of Imperial College, London

Kristin Blanchfield joined Imperial in January 2025, as Vice-President (Advancement) reporting directly to President Hugh Brady, after more than a decade at Johns Hopkins University, latterly as Senior Associate Vice President for Philanthropic Partnerships. She has also held positions at Yale and Cornell universities. Her experience includes building high performing teams and working with institutional leadership, boards, academic staff, volunteer leaders, alumni and donors to advance strategic priorities.

A transformed student experience

Reflecting on his student life in the 1980s, Preece noted how Imperial once felt intense but impersonal, especially compared with other campus or collegiate universities. The College has since invested in pastoral care, belonging, and student support – changes that not only improve experience but also foster positive, enduring alumni relationships.

Encouraging Giving is an Essential Part of the University Life

Imperial has developed significant philanthropy opportunities over the years and in 2024 over £91m was given by over 3600 individuals and organisations. There are a number of key influences that shape generous giving. Blanchfield described how each alumni's education experience can build connection and

loyalty as people are grateful for what they received in their undergraduate or postgraduate programme. There is also the confidence that Imperial's world-class research and impact will be able to make great use of giving. So that donors feel their gift is useful. Donors also value the engagement with leading faculty and the chance to support meaningful, boundary-crossing work.

Imperial's donor base includes not only alumni but other individuals, foundations and corporations – a mix that reflects the institution's global reach and reputation.

Many significant donors begin with modest gifts – £25 in some cases – and grow their involvement over time as they understand Imperial more deeply. Alumni events that connect current students with graduates are particularly powerful, offering inspiration on career pathways and showcasing the breadth of fields Imperial alumni move into.

"The new institutional strategy is a compelling framework for philanthropic support and engagement." – Kristin Blanchfield

Schools of Convergence Science increase opportunities for donor supported major impact

Imperial's strategy aims to solve grand challenges by breaking down disciplinary silos – bringing together fields such as human and artificial intelligence, health and technology, sustainability and space, security and telecoms, to tackle mission-focused problems. The initial missions for each School of Convergence Science are being developed to identify the priority areas that will encourage strategic engagement and philanthropic support.

Imperial will launch a fundraising campaign in support of its Science for Humanity Strategy, encompassing alumni engagement and philanthropy. A major focus will be scholarships – from undergraduate to PhD – across all faculties. Donor recognition is woven into this effort, and Imperial already hosts an annual event where scholarship donors meet recipients. The model allows donors to support the mission while also directly enabling student success.

A great example of this is the work by Professor Frank Kelly on air pollution – beginning in Greater London and informing global monitoring and policy through data-driven collaboration with government. Philanthropy has helped power such efforts, and donors are drawn to clear, measurable benefit to society.

Building multiple layers of connection

Preece commented that Imperial alumni often identify with several communities: their department and cohort, their faculty, and historic associations like City & Guilds. While some traditional constituent identities are less central to current branding, they remain meaningful to many. Blanchfield describes Imperial as "a big tent" that can accommodate multiple overlapping communities, each contributing to the institution's story and strength.

Blanchfield recently attended the City & Guilds dinner and met alumni at the Exhibition Road Festival – where alumni-sponsored student hackathons showcased intense, hands-on creativity. The Festival's celebration of tradition and innovation, from heritage vehicles to robotics challenges, underscores how alumni-student encounters enrich both sides. For City & Guilds alumni, there is an opportunity to rediscover Imperial's diversity, continuous learning, and modern avenues of engagement – staying current with the College's evolving strategy and mission-driven work.

Imperial's growing global reputation

Preece recalls the 1980s, when Imperial was less visible beyond engineering and science circles. Today, with a top global ranking and a very confident public presence, alumni benefit from Imperial's heightened reputation. Blanchfield notes that Imperial has strengthened its branding and PR. Imperial is telling compelling institutional stories and this helps connect alumni and philanthropists to the institution and its campaign – building confidence and widening the circle of supporters.

For Blanchfield, the "wow" moments come in conversations with alumni and academics and students – encounters that reveal creativity, curiosity and ambition. But watching graduates cross the stage at the Royal Albert Hall in June, alongside proud families and staff, crystallised the experience. Imperial is the only UK higher education institution to hold its graduation there; the ceremony embodies achievement, community and aspiration.

Encouraging and Building Connections

The conversation concluded with a discussion as to how to encourage alumni to engage more at different levels. For example:

- **Attend alumni events**: Talks, pub nights, departmental gatherings, and faculty lectures;
- **Explore learning opportunities**: Short courses, public lectures, and continuing education offerings;
- **Engage with students**: Volunteer at events, support hackathons, or mentor through departmental programmes;
- **Support scholarships**: Enable access and excellence from undergraduate to PhD;
- **Connect digitally**: Update details, join Imperial's LinkedIn alumni network, and subscribe to departmental newsletters;
- **Stay informed**: Follow updates on Science for Humanity and the Schools of Convergence Science missions.

From scholarships to convergence science, the College is inviting alumni and friends to help shape breakthroughs that matter for society. For historic constituent college communities, like City & Guilds and Royal School of Mines, the door is wide open: Imperial's "big tent" can hold tradition and innovation together, offering meaningful ways to learn, connect, and contribute.

Kristin Blanchfield was in conversation with Roger Preece, CGCA Vice President

Finnmark ski/sail

In April 2025, four final-year students, supported by the Old Centralians' Trust (among others), embarked on a sustainable adventure and environmentally responsible ski-and-sail expedition in Finnmark in the far north of Norway. This article is based on the expedition report written by team leader Callum Hargrove.

We are a group of passionate skiers, mountaineers, and sailors, brought together by a shared drive for exploration and adventure in some of the world's most remote and challenging landscapes. As final-year students at Imperial College, we see this as the perfect moment to channel our skills, resources, and networks into realising our dream of a ski-and-sail expedition in northern Norway.

Our planned expedition was to Norway's far north, specifically the islands of Stjernøya, Seiland, and the fjords of Øksfjord in Finnmark, representing a bold and innovative approach to combining alpine exploration with sustainable practices. Through extensive consultation with local guides and industry experts and detailed analysis of snow conditions, we selected these regions for their potential to push the boundaries of ski touring and sailing in Europe. This expedition was designed not only as a physical challenge but also as a platform to redefine what modern exploration can achieve in terms of sustainability and environmental responsibility.

Our approach was grounded in innovation, using carbon-conscious travel methods and offsetting our emissions through certified reforestation projects. Alongside this, we aimed to document new ski lines and contribute to the growing body of knowledge on sustainable adventure travel. Through film and storytelling, we will bring this unique experience to wider audiences, inspiring both adventurers and conservationists to explore ways of engaging with the natural world responsibly.

Norway

Norway's major selling point as an end-destination for ski touring is the easy access to stunning and 'untouched' natural scenery combined with the heavy amounts of high quality snow in most parts of the country. We narrowed down the region to Northern Norway due to historical snowpack data, as well as The Eagle Ski Club UK's extensive webinars and their Nordic Touring and Ski Touring in Northern Norway videos. The latter has some key information on where is yet to be discovered.

Our expedition focussed on the Finnmark region in Northern Norway, specifically the area surrounding Stjernøya island near Alta. The planned route followed a clockwise trajectory around Stjernøya, encompassing four distinct zones: Øksfjord East, Øksfjord Proper, Stjernøya, and Seiland. While Øksfjord East was an optional staging area, its moderate terrain and accessible lines provided an ideal environment for team acclimation and equipment testing before progressing to more technical objectives.

The team

The core group consisted of four MEng Design Engineers at Imperial College London (Callum Hargrove, Liam Baglole, George Alexander, Solly Kurzman) with combined experience in Expeditions, Climbing, Skiing, Snowboarding, Touring and Sailing; along with three dutch crew members on board the Moondance sailing vessel: Sanne, Roy and Hugo, who were all experienced sailors and excellent skiers; and two highly qualified guides and IFMGA trainees Jack Thompsett and Chris Andrews, as well as a friend of theirs, James Healey, an experienced ski tourer and adventurer.

We planned our trip for mid-April, from 13-24th, with both initial and final days being used solely for travel. We planned to sail from the 14th-20th, being picked up in Alta and sailing from there, finishing in Øksfjord before the team split up, and the core team of design engineers would spend a few more days in a local hut in Øksfjord to practice the skills we'd learnt from the more experienced guides. We flew in from London Heathrow to Alta via an internal flight from Tromsø, and back from Øksfjord via a lift from a local followed by a five hour bus journey from Burfjord to Tromsø, flying back to London Heathrow.

Sailing proved to be an effective and low-carbon mode of transport from Alta for our expedition. The topology of the surrounding landscape offered natural protection from strong offshore breezes (with quieter winds in fjords), and during April, the maritime conditions were generally favourable and steady.

Overview

Across 11 ski days in remote Finnmark, we covered 103.5km and climbed over 9,000m of elevation. These numbers only hint at the breadth of the expedition, which demanded constant adaptation, tested our skillsets, and delivered some of the most memorable touring we've ever experienced.

Several days stood out – particularly the 15th, where we likely skied undocumented terrain during a fjord-to-fjord traverse, and the 22nd, where we self-navigated to a summit under challenging conditions. Later in the trip, operating without guides, the core team confidently planned and executed safe, rewarding days – a major step forward in our development.

A major turning point came mid-expedition, when warm maritime weather forced a full reroute. Rapid snowmelt, rain, and rising avalanche risk made original plans for Stjernøya and Seiland unviable. The decision to sail north toward Sandland and Bergsfjord involved real-time risk assessment, trust in the crew, and dynamic replanning. Far from a setback,

Photos courtesy of Callum Hargrove

The team from Imperial: (top L-R) Callum Hargrove, Liam Baglole (bottom, L-R) George Alexander, Solly Kurzman

this became a valuable learning experience in expedition flexibility and judgement.

Trip Diary

13th April

After some mixed amounts of sleep prior to our trip (no need to name names!...), we embarked from Heathrow around lunchtime, stopping off in Tromsø airport for a pint and burger, before landing late in the evening in Alta. From here, we walked across to the harbour, catching our first glimpse of the Moondance sailing vessel, meeting the team, and getting some well needed sleep prior to our first sail and ski day!

Moondance docked in Alta

14th April

Sailed from Alta to the first fjord today (Indre Lokkarfjorden). After a 5 hour journey we arrived and headed ashore to complete a comprehensive test of our avalanche gear, make sure we knew how to use it and how to act as a team in the event of an avalanche. This was followed by a warm-up tour that covered 5km of terrain and 314m of vertical ascent, allowing us to make sure all our gear was working as planned before longer trips. Conditions were good and allowed us to scope out a longer route for the following day. We then headed back to the boat and got planning for the next day.

Our first day touring with the whole crew, and what a beautiful landscape to be greeted with. A huge shout-out to guides Chris and Jack for their thorough and detailed explanation of all necessary avalanche protocols, ensuring the team was well prepared before embarking on tougher tours. A couple of crew members joined us as the weather was good, with Sanne and Roy joining me [Callum] splitboarding – awesome to have some more experienced and keen people to learn from!

15th April

Our bluebird day! A longer tour today took us out and over the westerly crest of the valley into Ytre Lokkarfjorden where the vessel picked us up. The conditions were unbelievable and allowed us to find some incredible snow, after a long tour and ski we headed back up a shorter distance to make the most of the snow and weather and in total covered 13.7km of terrain and 1082m of ascent.

For just the second ski day on the trip, we were blessed with some incredible weather and unbelievable views, with even better snow. Some of the most pleasant terrain in ascent, and the turns of our lives on the descent.

Beautiful gully scenery surrounding the team's tour

Getting in our first tourin the beautiful woods of Lokkarfjorden

Crossing fjords from one to another, summiting a plateau and introducing lake crossings, this was a day to remember. With limited documentation for the area, this tour likely included pitches which had never skied before.

Once we were back in the boat we sailed an hour to our next fjord (Tverrfjorden).

Incredible views and lighting over Tverrfjorden

16th April

We headed out early and toured up into the valley, the route initially took us past a lake before looping around the peak to cover a total of 10.7km travelled and 962m ascent. Conditions were harsher today but the team endured and finished on a natural plateau that gave us panoramic sea and mountain views over Tverrfjorden, here we were pretty exposed and really felt the harsher weather coming in. As we got below the harsher weather we skied a great tree line and finished right on the beach.

It was at this point, however, that the upcoming weather charts were showing a drastic shift in weather, to warm above-zero temperatures with rain. This, unfortunately, put a huge spanner in the works – with the avalanche risk rising to a 2 and even 3 (out of 5) in most aspects. It was at this point that the team, guides and crew decided to divert the course of the expedition to accommodate this weather shift, to maximise touring and minimise long-distance sailing in low-wind warm weather, hence ruling out Stjernøya and Seiland, and travelling instead north towards Bergsfjord and Sandland.

Still managed to keep morale up with some freezing cold arctic swimming!

Dinnertime on the boat

17th April

Despite sleeping with our toes crossed, we unfortunately were limited by the avalanche risk meaning we weren't able to safely ski whatsoever. With some quick thinking from skipper Hugo and guide Jack, we headed to Sandland and pitched up for a sauna to take our mind off skiing for a day! The remote sauna (an upturned converted sherman's boat) was well welcomed, with multiple hiatus' of arctic dips to cool off, on the sandy picturesque beaches of Sandland.

On the way, we pulled out the fishing rods and were lucky enough to catch our dinner for that evening – a dozen cod or skrei. Liam's Canadian lumberjack sherman spirit was channelled as himself, Jack, James and George caught fish, albeit with George having to throw his fish back into the sea as it was microscopic… Made for good entertainment nonetheless, a well-needed distraction from the rain and concurrent record-breaking snow-dump in the Alps.

18th April

Again we were limited by the avalanche risk but sailed from Sandland to a remote fjord halfway to Øksfjord in preparation for a better forecast on Saturday. Cards (i.e. competitive Monopoly deal!) and less successful fishing got us through the day although some of us fared better than others due to the rough sea (poor Solly…).

We tried to make use of the day, by talking between guides and core team members and crew on transfer of skills, detailing how to proactively (night before, and earlier in season) get better at detecting avalanche risk before it happens, reading forecasts the night before and learning about aspects, wind slabs, gullies and chutes, wind loading etc. We also got the chance to hear about the guides' journey to their expertise in their profession, and what best steps to take as young budding ski tourers keen to get more experience!

Transferring skills, conversing with all team members on sailing routes, avalanche risk, mitigation, etc.

Lovely view over Ullsfjorden when the visibility improved

19th April

After a good call by our crew the night before, we were blessed to be able to ski today. Ullsfjorden's remoteness and poor visibility left us route-finding exclusively with contour maps at first, but soon the weather cleared and we were treated to great visibility on the way down. Skiing into the beach of the fjord, we then transitioned again and headed back up twice, hitting different routes each time to maximise the good snow in the bottom half of the mountain (due to less sun exposure), with a total of 1551 vertical metres for the day.

Throughout the tours, there was a growing emphasis on 'on-the-fly' avalanche mitigation, constantly testing snow types, assessing [compass] aspects, terrain traps and incoming weather, to ensure the correct choices were being made. This created an open conversation between team members – improving our skills.

We then headed back to Øksfjord for our last evening on the boat.

20th April

Woke up for the last time on the boat and started moving our gear to our hut in Vassdalen near Øksfjord. We then scoped out the terrain available to us in the area and headed out the back of Oksfjord over the lake. The snow conditions and visibility were poor which meant we had to cut the tour short. Whilst the avalanche forecast was low, clear signs that avalanche risk was high in areas meant that we were limited to an elevation gain of 304m but still covered 6.76km.

Crossing Vassdalsvatnet

We did, however, find ourselves with very limited food as the one supermarket within a 50km radius was shut for the next couple of days due to Easter Sunday and Monday… We were lucky enough to have the Moondance crew donate us some of their canned goods, and the hut's host gifted us a fresh cod in a shopping bag!

Conscious that James, Chris and Jack were to leave the next morning (due to poor weather, alternative travel arrangements, and the uncertainty of food…), we made the most of their expertise – laying out our plans for the next few days. Despite the relatively poor projected avalanche and weather conditions, we pre-planned some tours based on the single aspect we could safely ski on.

21st April

With just the core team left (myself, Liam, George and Solly) we headed up north out the back of Oksfjord, touring up left before the lake on the only safe aspect. We headed over a crest and down into a bowl containing another frozen lake and skied its west facing aspect. The snow was great and we skied through some well spaced trees. We lapped this again before heading back out of the bowl. This left us having covered 784m of elevation over a distance of 8.96km.

We had a lot of fun having more autonomy and sharing the decision making, applying the skills we'd learnt over the past week from Jack and Chris! We rounded off the day by building a kicker, utilising the deep snow, before heading home.

22nd April

An earlier start allowed for a longer day covering 10.88km, with a reduced avalanche risk allowing us to ski a different area. We headed up a natural valley that stretched out beyond the Vassdalsvatnet lake and up the back side of the mountain.

The Mariteng Plateau, summiting

We travelled through the valley which led us to 2 bowls; touring up the north west face of the first bowl, we summited that peak and skied back down into the second bowl. Amazing skiing meant we chose to lap a short section of the bowl before heading back out and through the valley home for a total elevation of 798m.

We were finally able to put our skills together on a longer tour, and achieve a summit we were all extremely proud of! I might have teared up a little, in a moment where all of the dreaming, training and hard work to get us there, all paid off. Speechless.

23rd April

For our final ski day we travelled to a bowl that we had scoped out the day before to the East of the Vassdalsvatnet lake. Again travelling over the lake, we headed off to the right about halfway across. We travelled up to a summit point but due to poor visibility could hardly see anything. We then travelled back down the faces we had toured up and found a great patch of snow that led down to the lake which we lapped a few times. Vis and snow through these varied but on the whole we got to ski some amazing hero snow through this section. Lapping allowed us to cover a total elevation of 1174m and a distance of 11.12km.

Bittersweet to finish up our trip, with all our fitness levels increased and adjusted to the daily altitude training, we felt better than ever. We left Finnmark with some of our nicest tree dense turns, making the most of the amazing snow and scenery, before getting an early night in!

24th April

Woke up at 4am and, supported by the kindness of local Norwegians, grabbed a lift from our host to a bus stop by a petrol station in Burfjord, before grabbing a 5 hour bus to Tromsø (via the Lofoten Islands, small ferries and some beautiful arctic fjord landscapes across the north coast of the mainland!). After checking out the world's northernmost McDonald's in the most populated city in the arctic circle (and taking in the breathless views surrounding the city), we departed back to London Heathrow (after a struggle getting our ice axes and skis to fit within the maximum weight!).

Impact Assessment

Throughout the expedition, we adhered strictly to Leave No Trace (LNT) principles. All waste, including food wrappers and packaging, was carried in and out of the areas we accessed, with no materials left behind. Given the low-impact nature of ski touring, our land-based activities left no lasting environmental footprint. This approach ensured that our presence did not disturb the fragile Arctic environment we travelled through.

While we operated with a low-carbon transport model within Finnmark – sailing between anchorages on a yacht – our flights to Alta represented the highest-emission component of the expedition. Due to academic constraints surrounding our Master's project timelines, flying was necessary, generating an estimated 1700kg CO_{2e} in total.

To address this, we offset our flight-related emissions through The Eagle Ski Club, which facilitates carbon credit purchases from the Cochabamba Project, a verified initiative under the wider ArBolivia programme. This project works with smallholder farmers in the Bolivian Amazon to deliver long-term, community-led reforestation and sustainable land-use management.

Conclusion

This expedition challenged us to take on more responsibility, adapt to volatility, and make informed decisions in a complex, maritime environment. Through close collaboration with guides and crew, and later through independent touring, we significantly improved our avalanche awareness, route planning, and group management.

Key takeaways for future expeditions include:

- Build contingency into route planning – weather can force complete reroutes.
- Prioritise avalanche education and on-the-fly decision making, not just technical fitness.
- Ensure team members are ready to take on greater autonomy if guides or support are unavailable.
- Plan resupply carefully – remoteness, closures, and limited stores can catch you out.

Beyond the physical challenge, this trip strengthened our confidence as emerging ski tourers and reinforced the value of teamwork, preparedness, and adaptability in the backcountry.

We would like to offer a big thank you to our sources of grant funding who made this expedition possible, including the Old Centralians' Trust.

Our final view over the Vassdalsvatnet lake

Energising Leadership

How leaders create momentum for themselves, their teams, and the world

At the CGCA President's Lecture after the AGM, business leaders, academics, and students gathered to explore a simple but powerful idea: success depends as much on energy as it does on strategy or skill. The presentation titled *Energising Leaders*, by CGCA Vice President Roger Preece, argued that leadership is not only about setting direction or making decisions – it is about creating and sustaining the energy that allows people and organisations to thrive.

Why Energy Matters

Over the past few years, leaders everywhere have been tested by constant disruption: the global pandemic, the rise of artificial intelligence, economic uncertainty, and major shifts in how and where people work. Many have responded with determination, but the cost has often been exhaustion. The presentation opened with an honest acknowledgement of this challenge – chronic fatigue, low morale, and a sense of being drained are common even among high performing executives and their teams.

To explain why energy matters so much, the speaker used a simple equation:

Results = (Strategy + Execution) × Energy.

Most organisations are good at building the "vehicle" – their strategy, people, systems, and plans – but they often overlook the "fuel" that makes it run. That fuel is energy: the vitality, motivation, and collective spirit that keep people moving forward.

Energy is the foundation of all performance

Energising Yourself

The first step in energising others is to start with yourself. Leaders can only give energy if they have it to give. This means paying attention to all aspects of personal wellbeing – mental, emotional, physical, and spiritual. It also means understanding what genuinely gives you energy and what drains it.

One of the most practical tools discussed was the *Personal User Guide*. This is a short document where you describe how others can work best with you. It includes questions such as:

- What motivates you?
- What tends to frustrate you?
- How do you prefer to receive feedback?
- What helps you do your best work?

By sharing this guide with colleagues, leaders make it easier for teams to build trust and avoid misunderstandings. It is a small act of self-awareness that can make a big difference in how energy flows between people.

Another idea that resonated with the audience was the importance of micro rituals – small, repeatable actions that boost energy over time. Just as regular exercise improves physical health, simple habits can strengthen emotional and mental resilience. Examples include starting the day by setting an intention, pausing between meetings to breathe, or ending the day with gratitude for something that went well.

Energising Your Team

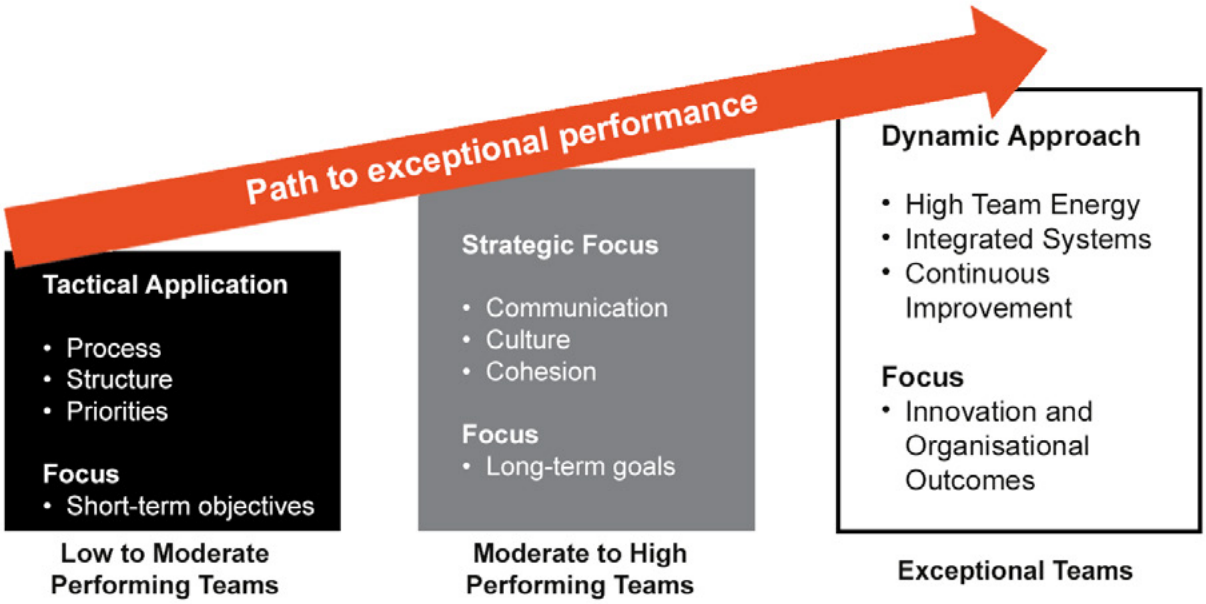
Once a leader has found balance personally, the next challenge is to energise the team. The presentation used the image of a lightbulb to explain how team energy works. When the filament is intact, electricity flows and the bulb shines brightly. When the connection is broken, the light dims. Teams are the same. When communication is clear, relationships are strong, and purpose is shared, they shine. When trust erodes or goals are unclear, energy leaks away.

Research into team performance shows that the most effective teams have five things in common:

1. **Clarity** – Everyone understands their role and how it contributes to the bigger picture.
2. **Safety and Trust** – People feel comfortable sharing ideas and concerns.
3. **Connection** – Members value each other and work together rather than in silos.
4. **Open Communication** – Information flows freely and problems are discussed early.
5. **Shared Purpose** – The team knows what success looks like and why it matters.

The speaker encouraged leaders to treat energy as a resource – something that can be measured, protected, and increased. When energy is managed deliberately, performance follows naturally.

How teams grow



A number of practical techniques were introduced to help teams build and maintain energy:

- **Thank Someone Every Day** – Take a moment to notice and recognise good work. Appreciation boosts morale, strengthens relationships, and reminds people that their efforts are valued.
- **OFTN Conversations** – This stands for Observations, Feelings, Thoughts, and Needs. It is a simple structure for having honest conversations when something is difficult. For example: "When you missed the deadline (observation), I felt anxious (feeling) because I thought we might let the client down (thought). What I need is clearer updates next time (need)." This framework helps people express concerns without blame and find solutions quickly.
- **What's Becoming Clearer?** – Asking this question during or after a meeting encourages reflection and shared learning. It helps everyone pause, make sense of what they've heard, and move forward with renewed focus.

These small practices can transform a group of individuals into a connected, high-energy team. When leaders model them consistently, the effect multiplies.

Energising Your Organisation

The presentation then moved from teams to whole organisations. Here, the idea of fractal energy was introduced. In mathematics, a fractal is a pattern that repeats itself at different scales – like a snowflake or a fern. In leadership, small positive actions at an individual level can repeat and ripple through the system, creating large-scale impact.

When a leader practices gratitude, for example, their team starts to do the same. Over time, the behaviour becomes part of the culture. The message was clear: sustainable organisational energy doesn't come from big initiatives or slogans; it comes from the consistent, human actions that build trust, purpose, and momentum.

The presentation highlighted that many organisations focus heavily on structure – strategies, targets, and systems – but pay less attention to how people feel while pursuing them. The most successful companies balance both. They align purpose ("why we exist"), performance ("what we do"), and wellbeing ("how we do it"). When these three elements work together, people feel engaged and proud of what they achieve.

Energising the World

The final part of the lecture widened the lens even further. Leadership energy, the speaker argued, doesn't stop at the office door. In an age of global challenges, leaders have an opportunity, and a responsibility, to energise the world around them.

This means leading with purpose and integrity. It means asking not only "What are we achieving?" but also "What difference are we making?" The most energising leaders are those who inspire others by connecting daily work to something larger and more meaningful.

The presentation closed with a reminder that energy is not just a nice-to-have – it is the foundation of all performance. A leader who manages their own energy wisely and helps others do the same creates an organisation that can adapt, innovate, and grow in any environment.

As the audience at Imperial College reflected on the session, one message stood out: leadership is less about control and more about connection. When leaders energise themselves and others, they unlock not only better performance but also greater purpose. And in doing so, they are a catalyst for high performance.

Lead with purpose and integrity…
ask not only "What are we achieving?"
but also "What difference are we making?"

Roger Preece is Vice President of City and Guilds College Association and a partner in Energising Leaders – an international coaching, mentoring and advisory business.

www.energisingleaders.com

ICMC Squamish Expedition

In July 2024, with support from RSMA and the OC Trust, a group of nine members of the Imperial College Mountaineering Club (ICMC) set off on an expedition to Squamish in British Columbia, for high-quality free climbing at accessible grades. Three of the group, Sophia Marr, Alex Weir and Will Lovett-Turner, wrote a short report for RSMA on the experience. The following is based on their report.

Squamish, British Columbia, lies at the mouth of Howe Sound on Canada's western coast. Surrounded on all sides by alpine foothills and walls of pristine granite, punctuated by pine forests and magnificent waterfalls, the area offers thousands of climbing routes, of every conceivable style, length and difficulty. The granite is fine, exceptionally solid, and varied in style. Featureless slabs and splitter cracks of all sizes proliferate, but incredible variety can be found by following many of the hundreds (thousands?) of lines on The Stawamus Chief: a trio of towering granite domes that rise 700m from the water; the centrepiece of this climbing paradise.

In summer 2024, the three of us – Will, Alex and Sophia – along with six other Imperial students/graduates/friends, were lucky enough to travel to Squamish, generously supported by the Imperial College Exploration Board, the Old Centralians Trust, and the Royal School of Mines Association. Our aim was twofold: to pass on critical skills for long, multipitch and big wall climbing within the Imperial College Mountaineering Club (ICMC), and to explore this renowned climbing region firsthand. We spent several weeks camping at the foot of The Chief, and had a fantastic time exploring its classic lines and crags, as well as some further afield. Great company and the amazing setting made this a memorable trip, as did, of course, the climbing.

Photo courtesy of Alex Weir

Photo courtesy of Alex Weir

Squamish provided the opportunity for us to develop and refine the skills needed to tackle larger objectives in the future, on larger routes than those generally found in the UK. With a vast choice of long and committing multipitches, there was something for all members of the team to push themselves. While a number of impressive, high-quality routes were climbed by the team on/around The Chief – including Angel's Crest (5.10), Grand Wall (5.11a), Snake (5.9), and Spirit of Squamish (5.8) – the defining highlight of the trip for the three of us (and Isaac) was our Mt Habrich epic, on the route Life in Space.

At a mighty 27 pitches up the northeast face of Mt Habrich, Life in Space is one of the five longest rock climbs in the Southern Coast Range; a pretty intimidating line that is far more alpine than any of the climbing on The Chief. Despite the crux pitch only being 5.10b, this route was still a serious undertaking, due to its committing length and long approach. We split into two teams: Isaac and Alex attempting the full route and Sophia and Will opting to hike round the first 16 pitches and climb the final ridgeline to the summit. Our two-day plan – walk in and bivvy at the base on day one, then climb the full route and descend back to Squamish on day two – proved optimistic.

The more experienced duo of Alex and Isaac practically flew up Goldilocks Zone (the first 16 pitches), overtaking Will and Sophia at around the 4th pitch of the Life in Space extension, before simul-climbing the final ridgeline to the summit and descending to Polar Dome at the saddle of Habrich, where they waited, and waited, and waited, as dusk and then darkness fell, getting colder and colder.

Will and Sophia, meanwhile, were experiencing a number of small issues and errors (from less climbing confidence, to toilet emergencies, to mysteries of disappearing bolts) that compounded into quite a significant loss of time. It was growing dark by the time they reached the easier ridgeline, at which point they realised simul-climbing would be quite a useful skill to have, but which, alas, neither of them did. In an improvised style, they eventually reached the summit at around midnight, and began descending towards Polar Dome. Exhausted, hungry, and safe, the four of us passed the night bundled in a single (and very fortuitous) sleeping bag, before descending, even hungrier, back to Squamish the next morning.

Photo courtesy of Isaac Blanc

Photo courtesy of Sophia Marr

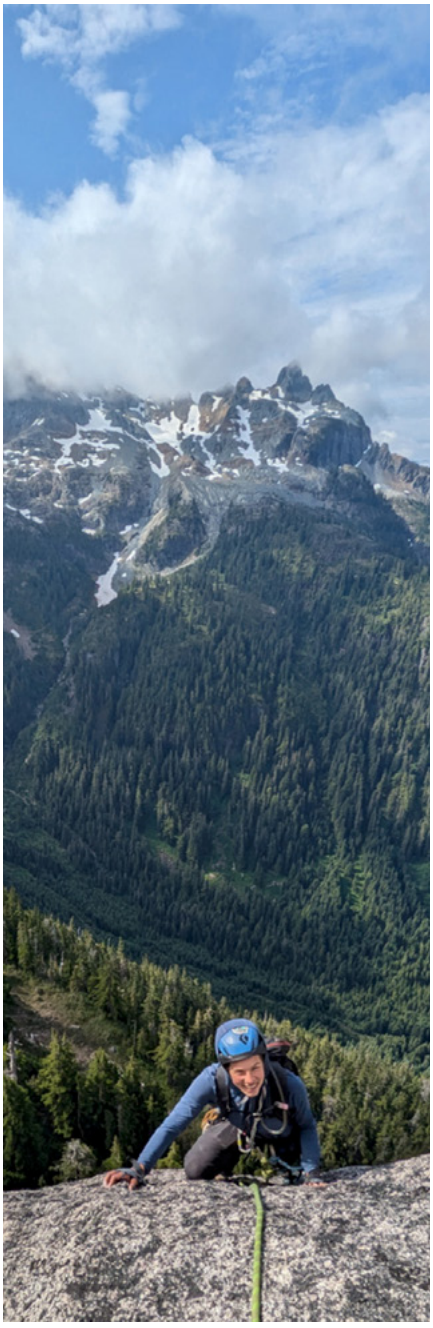


Photo courtesy of Alex Weir

Photo courtesy of George Gunn

However, undeterred by this experience, and with a final weather window before leaving, it wasn't long before Alex and Sophia returned to Habrich, seeking reconciliation with the mountain. Earthshine, a 10-pitch 5.10a route on the mountain's opposite flank, was much more amenable, and made for a much less cold and less hungry experience: a perfect close to the trip.

Our Squamish expedition provided the perfect environment for all of us to grow significantly as climbers, while ticking off some world-class routes. We had long evenings of (equally world-class) camp food and laughter, along with our fair share of adventure (and inevitable benightment); memories as timeless as The Chief. We'd like to express huge gratitude to everyone who made this trip possible.

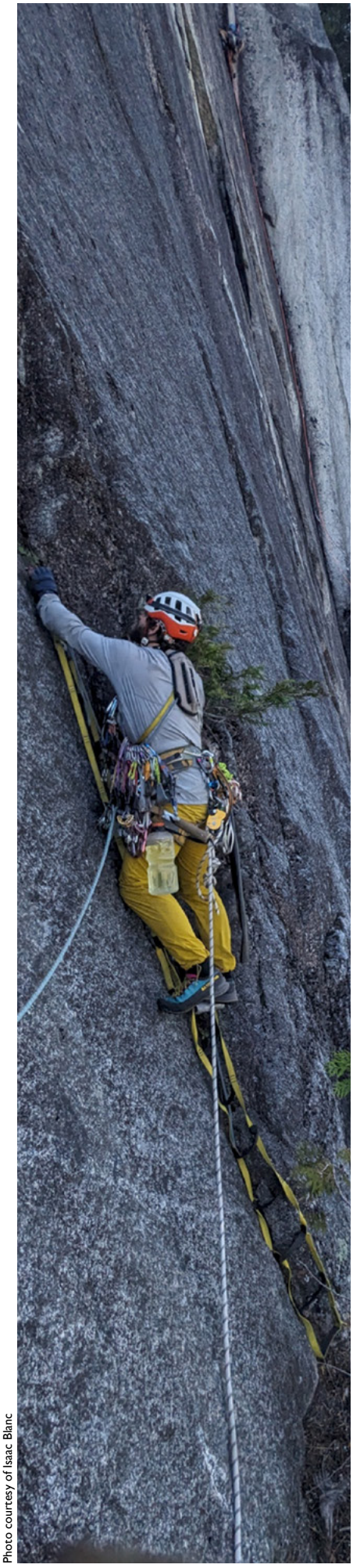


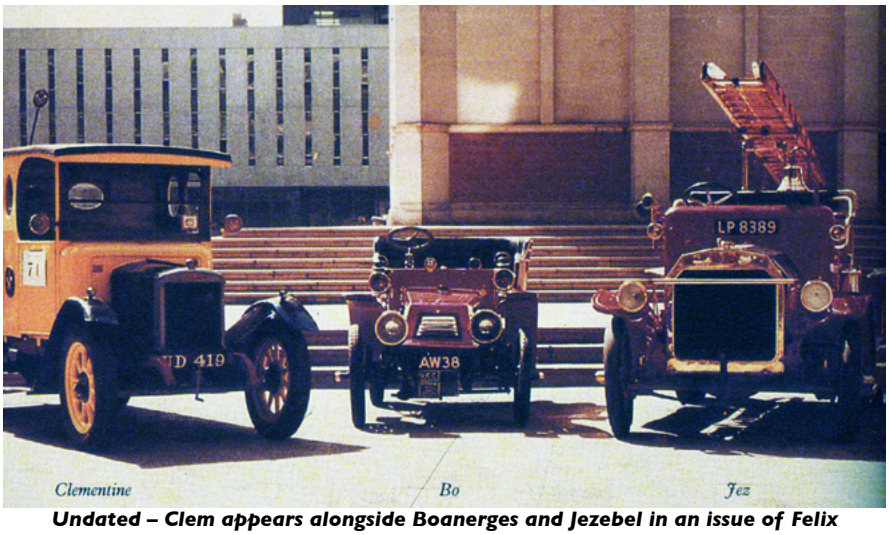
Photo courtesy of Isaac Blanc

The Clemtenary

The RSM motorised mascot, Clementine II, will turn 100 in October 2026. The RSM Motor Club are planning a series of events and activities to celebrate her centenary year, and are keen for alumni to celebrate with them. Jack Swires, RSMMC Captain 25-26, agreed to tell us what they are planning.

Mascotry is a somewhat interesting and often overlooked aspect of Imperial College life, with many students nowadays resolving to study in the library rather than spend their evening attempting to procure an oversized spanner, thermometer, or miner's lamp. However, nestled amongst the towering departmental buildings of South Kensington Campus, there remains one last bastion protecting the wonderful and slightly ridiculous tradition of mascotry at Imperial in the form of the Motor Clubs. The dedicated, grease-covered, and oil-soaked students and alumni of the Imperial College Motor Clubs spend an incredible portion of their time keeping the mascots Clementine, Boanerges, Derrick, and Jezebel alive and well. These vehicles have been well known and fondly loved around campus and beyond for many years, and there is no exception for Clementine II, the 1926 Morris T-Type truck.

Numerous students and alumni of the Royal School of Mines and wider Faculty of Engineering will be able to recall times where they had joyrides on and took photos with Clem, as this year we celebrated 65 years of her service at the college. While this would not be possible without the long lineage of committed RSM Motor Club members, it equally would not have happened without the continued support and interest of those students and alumni who invite Clem to events and come with us on rides. As we look to the year ahead, the current RSM Motor Club committee are exceptionally fortunate to be in a position to announce the plans for the Centenary of Clementine II as she turns 100 in October 2026, and we are delighted to invite you all along to join us in the celebrations.



Undated – Clem appears alongside Boanerges and Jezebel in an issue of Felix

While it is always exciting to discuss what events we have planned for the coming year, it is first worth reflecting on the rich history that we are celebrating. Clem started life at the Morris Commercial factory on the 13th October 1926, when she was registered to a Mr E.R. Courage, of the famed Courage Brewery. Clem had been fitted with a somewhat unique utility body, including a dropside flatbed, easily removable bench seats, and a canvas tilt-frame. She was immediately put to work, moving the belongings of the Courage family across the country, driving hundreds of miles every week at blistering speeds of 30 mph. Once they had moved into Edgcote House, Clem was then used as an estate vehicle, transporting equipment and workers around the grounds.

By the 50s, Clem was beginning to become unsuitable for the Courage family's needs, and it was decided that she would be replaced with a larger and more modern Morris commercial. After her long service at Edgcote house, Clem was sold on and was briefly stored in Norfolk alongside a famous 1907 21-litre Mettalurgique car owned by celebrated wartime hero Douglas Fitzpatrick. Here she was left mostly untouched as she was only being stored as a favour. At a similar time, the students of the Royal School of Mines were beginning to see problems with their Aveling and Porter steam traction engine. Clementine I was beginning to become expensive, unwieldy, and had made a name for herself amongst the local police officers. It was decided that Clementine I would be sold, and the search for a new Clementine began. Clementine II was found for sale in Sheringham, Norfolk, and some students went over to take a look. Once they were satisfied, transport was arranged but while the students were having an exciting conversation with the gardener about the efficacy of dried blood as a fertiliser for grapes, said arranged transport promptly arrived and quickly left with Clem in tow. After a brief chase, Clem II was found and was brought to campus, where she was repaired, christened, and painted in the colours of the RSM.

Undated – Clem II in her original RSM red and yellow livery

Photos courtesy of RSMMC

2002 – Clem appears outside her old garage near Southside

Now bright yellow, Clem began her important role of representing the students, driving around London, and joined Jezebel on the first ever Historic Commercial Vehicle Brighton Run. She continued her service until the early 70s, when a large quantity of beer in the back of her bed and a vigorous turn into campus caused her to roll over on Exhibition Road. Clem was mostly reassembled and working until in 1976 a decision was made to fully disassemble and overhaul her. Various garage moves spread the parts around campus, and the rebuild seemed to become more and more unlikely, however, in the early 1980s a group of students came together and finally began to reassemble Clem. By April 1988 Clem was finally 'driven' again, with a lawnmower fuel tank strapped to the chassis, no exhaust, and an additional driver needed to work the carburettor. This only further ignited an interest to get Clem working again, and by June a decision was made to take her on a proving drive down to Devon, which was a tremendous success.

With Clem working, she resumed her duties, attending numerous college events throughout the years. She also attended events further afield, including the Isle of Wight and a one-off trip to the Historic Commercial Vehicle Society's Trans-Pennine Run, a round trip of 550 miles. In 2016 Clem suffered yet another rolling on the Isle of Wight, and was recovered back to Campus. Fortunately, a group of students and alumni spent a number of years labouring hard to restore her back to a working standard. Since this rebuild, Clem has been a reliable and trustworthy vehicle, serving the students and alumni of the RSM well.

In order to celebrate such an incredible century of history, the committee of the RSM Motor Club decided it would be best to pay homage to some of her most memorable moments. The planned events for the year are:

- 21st March 2026: The Centenary Dinner. To be held at the British Motor Museum in Gaydon, only a few miles down the road from Clem's original home. Tickets will be announced soon, but if you wish to receive updates then please get in contact (details below).
- Recreating the proving drive: Before Clem turns 100 we will recreate the drive that hailed her return down to Devon.
- Taking part in the Trans-Pennine Run: Just before her 100th birthday, we will take Clem all the way up to Manchester to take part in the HCVS event.
- Restoring her tilt-frame: Completing the last job that remains after her most recent rolling.
- Decorating Clem: We're hoping to decorate Clem with an RSM crest and some other festive surprises

2009 – Clem completes the Trans-Pennine Run

We hope you will all join us where you can over the next year in celebrating the Centenary of Clem. If you would like to receive updates about plans and events, or offer your advice on any of the above plans please do not hesitate to get in contact. We are also aiming to curate a wonderful display of Clem's history at the Centenary dinner and, eventually, online so if you have fond, funny, or faltering memories of Clem, then please contact us also.

To contact us please email:
clem@imperial.ac.uk
or if that doesn't work for you then please contact the Alumni Relations Office who will put you in contact with the current committee.

2018 – Clem almost complete after her long rebuild

2025 – Clem at the Bedfordshire Steam and Country Fayre

ICRTS Wales Volunteering Trip 2025

Each year, the Imperial College Rail and Transport Society arrange a weekend of volunteering on the Ffestiniog and Welsh Highland Railway (Ff&WHR), a narrow-gauge heritage railway, which is the oldest railway in the world run continuously by the same company. The trip is partially funded by the Old Centralians' Trust, and the organisers write a report on their activities, which we frequently use as the basis of an Imperial ENGINEER article. We reported in detail, last year, so we will just feature some highlights from this year's report, which was written by Ryan Voecks, ICRTS Vice Chair.

Our Wales volunteering trip is incredibly popular among our members, and this year all 14 tickets sold out in a record five minutes.

One of the greatest parts of the annual Wales trip is staying at the Penrhyn hostel, which is a converted station building. The platform out front still serves as one of the nine stations on the Ffestiniog Railway, and nothing quite beats having a train pull up right to where you're staying. The line uses a narrow one foot eleven-and-a-half inch gauge, and runs 21.7km from Porthmadog on the Cambrian coast to Blaneau Ffestiniog, nestled among the beautiful mountains of Snowdonia. In previous years, we have ridden in a works carriage, connected to a pair of wagons, and pulled by a 1960s diesel engine. This year, instead of the works carriage, we were treated to a luxurious observation car, with a full glass rear, giving us a splendid (and comfortable) view of the railway as we travelled. They just don't make trains like they used to!

Riding in the observation car

Photos courtesy of ICRTS

To our delight, our hosts also brought a steam locomotive to haul the train. We were even allowed to take turns on the footplate.

Much of the weekend was spent ballasting beside tracks and in the depot

Preparing to ballast the far siding

areas. But some of us got to polish one of the locomotives – this involved using rags to rub polish onto the front and sides of a small steam engine. It was hard work, quickly wearing out our arms, especially across such a large surface. But the result was well worth it – a shining locomotive, looking almost new, reflecting the scattered rays from the sun.

Polishing the locomotive

Once we were done, we were given a tour of Boston Lodge depot starting in the erection shed, where locomotives are built. There were several under construction, and it was awesome being able to see all the components when they were taken apart. Their oldest steam locomotive dates back to 1863, and was originally built for the Ffestiniog Railway. Their newest finished construction at Boston Lodge in 2023. After walking through the workshop, we got to see inside some of the engine sheds, the newest of which had finished construction this year. The largest locomotives were Garratts, previously used to haul minerals from mines in China and Africa.

Engine shed tour

After our tour we boarded the works train, and rode one stop down the line to Minffordd, where the volunteers had a surprise waiting for us!

Riding the steam locomotive

They reversed the train down into the sidings, and decoupled the locomotive. Then, after giving us a simple explanation of how to drive the train, we each got to take turns driving the steam engine! This was so much fun, and definitely one of the highlights of the weekend. We each got to drive up and down the slope towards the station, and even got to blow the whistle a few times.

Driving the steam locomotive

I would like to thank the Old Centralians' Trust for their funding, without which we could not offer the trip at an affordable price to our members.

Brilliant Dyes spin-out wins H&M Global Change Award

Brilliant Dyes, a spinout from Imperial, won a Global Change Award from the H&M Foundation in May, for natural dyes it is developing from algae. This involves an innovative low-energy extraction process that will make them a more sustainable option than synthetic dyes.

The Global Change Awards are intended to support bold, early-stage innovations that can decarbonise fashion and drive industry-wide transformation. This year's competition attracted 476 ideas from 69 countries across six continents. These were narrowed down to a shortlist of 20 finalists.

Mohammad Redwanur Rahman, a PhD student in the Department of Chemical Engineering and one of the inventors of the technology said "Growing up in Dhaka, I saw first-hand how synthetic dyes turned our rivers toxic and made the air nearly unbreathable. That experience shaped everything. Our algae-based dyes offer a carbon-negative alternative. They capture CO_2 as they grow and eliminate the need for sugar or fossil feedstocks. It's a way to clean up one of the dirtiest parts of fashion, using something as simple and powerful as algae."

This approach has the potential to cut the carbon footprint of synthetic indigo dye sector by around 50%, with the added benefit that the resulting dyes are non-toxic and biodegradable.

This pitch appealed to the award judges at the H&M Foundation, who singled out the cost effectiveness of the production method, which will make this natural dye more affordable and accessible than other alternatives. Meanwhile, the closed-loop extraction process means there will be no solvent waste, and the algae material left behind can be used as fertiliser, biofuel and animal feed.

Wider benefits include the potential to support small industry and local economies through algae cultivation, and to address the skin diseases caused by the environmental pollution from synthetic dyes.

Mr Redwanur Rahman set up Brilliant Dyes together with co-founders Dr Md Tabish Noori, a post-doctoral fellow in the Department of Chemical Engineering, and Professor Klaus Hellgardt, who is supervising his PhD. It was launched in July this year.

The team is also working on strengthening industrial and academic collaborations in order to carry out more research and development on the colourfastness of the dyes, and using computational modelling to prepare the technique for commercialisation. Other priorities include securing funding for pilot-scale dye extraction and expanding the team to explore high-end textile applications.

"Winning the Global Change Award is a huge validation of our mission to replace toxic synthetic dyes with a cleaner, scalable alternative," said Dr Noori. "With the H&M Foundation's support, we can strengthen our core business understanding of fashion industries, build industry collaborations and fast-track consumer validation, bringing us closer to delivering affordable, sustainable dyes to the global textile supply chain."

"Brilliant Dyes is a great example of a dozen new, exciting spinouts in the pipeline of ChemEng Enterprise, the highly successful decentralised enterprise support programme in the Department of Chemical Engineering," said Professor Sandro Macchietto, the department's Director of Enterprise.

dub.sh/IE43-BrilliantDyes
www.brilliantdyes.com

Photo courtesy of Imperial College London

Co-founders Mohammad Redwanur Rahman, Professor Klaus Hellgardt, Dr Md Tabish Noori

Photo courtesy of Imperial College London

Redwanur's research – pilot-scale cultivation of cyanobacteria in a photobioreactor

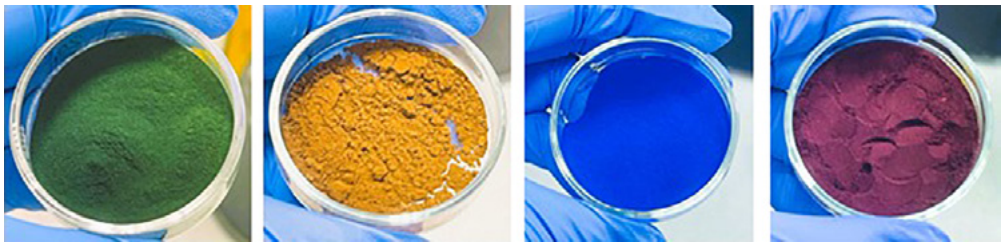


Photo courtesy of Brilliant Dyes

Brilliant Dyes currently offer four base dyes (green, yellow, blue and red) and 8+ blended shades

Wearable device restoring movement, offers hope to stroke patients

Stroke rehabilitation spinout Neubond was co-founded by Jumpei Kashiwakura and Dr Patrick Sagastegui, who met on a project in the Department of Bioengineering to develop a prosthetic hand.

When they explored the options for commercialising this research, they found that one element of the system had a potential all of its own: the interface that detects the urge to move the hand.

"While the market for prosthetics was quite small, crowded and competitive, we started to see a specific use-case for the interface, first in research but then a clinical connection and some traction for stroke rehabilitation," says Dr Sagastegui.

Stroke patients can face lengthy periods of rehabilitation as they learn how to use their limbs again. Physiotherapists guide this process, but patients do most of the work on their own. Neubond's device helps reinforce the connection between nerves and muscles by providing a physical feedback sensation when they attempt to move.

"While our primary goal is to support the recovery of mobility impairments through neurorehabilitation, we are seeing more than just scientific results through user trials," says Kashiwakura. "Many users have experienced a sense of hope after using the device, and this is exactly what we aim to deliver."

Working with Professor Dario Farina, their academic mentor, they developed their interface into a wearable device that can support rehabilitation. The bracelet features a high-density grid of miniaturised muscle sensors that are integrated with stimulators. This means they can precisely target every muscle in the limb.

When the device detects that a patient wants to move, it can deliver precise stimulation to the muscle to reinforce the nervous signal. This real-time feedback strengthens the connection between intention and execution, enhancing motor re-learning and accelerating recovery.

Photo courtesy of Imperial College London

A stroke patient tests Neubond's bracelet

"We've now tested over 10 patients on the level of effectiveness of the device. After 15 days of intervention, there was an increase in muscle amplitude in the targeted muscle, which was wrist extension movement, as well as improved coordination," says Dr Sagastegui. "We also observed an increase in the range of motion in proximal areas, such as the shoulder joints, suggesting that the intervention enhanced the neural drive to these areas."

For one participant, this resulted in improvements in daily living activities, such as opening a door, handwriting and self-hygiene. In another case, the increase in muscle activation allowed the participant to cuddle her granddaughter on her lap. "This was something that had not been possible before she underwent the trial," Mr Kashiwakura says. "It was a beautiful moment when she shared this story with me."

The monitoring device already addresses a significant gap in the market. "When patients are discharged from hospital they often have no support on how to continue rehabilitation and whether or not they are doing well," says Mr Kashiwakura. "Monitoring muscle activity, and activity levels, can provide guidance how they can continue rehabilitation correctly."

The device will also synchronise data in real time via a mobile app, so that clinicians can track the progress of their patients. By analysing movement, stimulation and activation patterns, the device reports the progress, promoting correct limb usage and maximising rehabilitation outcomes.

Meanwhile, the Neubond team is continuing to work with colleagues at Imperial on other uses for its technology. For example, one group is working on an exoskeleton, where the device might act as a neural control interface.

"Our device can also be used as an interface in other neurological conditions, such as Parkinson's disease or spinal cord injury," Mr Kashiwakura says. "So, we are actively looking for partners who can collaborate with us on academic, clinical or commercial projects."

Neubond's development was supported by the Innovate UK ICURe programme and Imperial's Venture Catalyst Challenge, where it finished first in the 2024 Health & Wellbeing track. To date, it has raised £720,000 in grant funding, including a prestigious European Research Council Proof-of-Concept award worth €150,000.

Now with six full time staff members, Neubond is currently taking part in the London Institute for Healthcare Engineering MedTech Venture Builder programme. At the same time, it has found a design and manufacturing partner in South Korea that will turn its prototype into a production-ready device.

To support this development, Neubond has opened a seed funding round that it hopes to close by the end of the year. "Within that seed round the main objectives are finalisation of the industrial design, then to seek certification in the UK and US. We also want to start clinical testing in order to be ready for randomised clinical trials and the clinical launch," says Dr Sagastegui.

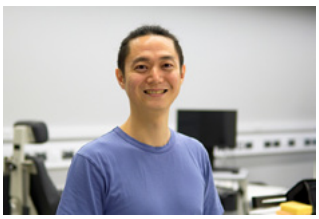
Regulatory approval can be a lengthy and expensive process for a new company, which potential investors can see as risky. To manage this risk, Neubond will first of all release a version of the device that monitors movement intention and guides rehabilitation by helping patients visualise which muscles they are using.

This requires a less demanding regulatory process than the full device, which would need to demonstrate a therapeutic effect through clinical trials.

dub.sh/IE43-Neubond

Photos courtesy of Neubond Ltd

The Neubond bracelet



Jumpei Kashiwakura

Dr Patrick Sagastegui

Triodes 58th Reunion

Back row, L to R: Sid Seth, Philip Harris, Nick Hiscock, Peter Marlow, Richard Lewis, Rut Patel, Simon Pengelly. Next row, L to R: Peter Cheung, Martin Clemow, Graham Castellano, Jay Yiakoumetti, Peter Wright, Liz Mansfield, Dave Mansfield. In the front, brought to his knee, is Martyn Hart.

Saturday the 17th of May 2025, Imperial's Triodes (Electricals graduating in 1973, or thereabouts) held their 58th reunion at the 568 Bar in the Union Building in Beit Quad.

Called 'Triodes', because 'tri' or 'tria' is Greek for three, they graduated in a year ending in three and, of course, a triode is an electrical device. This was their 58th reunion even though it is only 52 years since their graduation because in some years they had more than one reunion.

15 Triodes attended, as shown in the photograph above, taken outside the Union building

The common discussion amongst us all was that these days we seemed to be grandparents and bringing up our children's kids. Not everybody of course, but that was a major discussion along with Solar power, repair shops, fighting with the railways to get here and, in one case, with the dentist!

Of course, we are all getting to an age now where medical problems are conversation topics, sharing stories of how to get the best treatment and I guess being really pleased that we, out of our cohort of 100 or so students from 1970 to 73, are actually here to chat again!

Hopefully even more of us will be able to join in our 59th reunion on Saturday 16th of May 2026, same place, same time (12 noon) and there is even talk that Professor Cheung might be buying!

Best wishes

Martyn, Arch Triode

But what about news of those that couldn't make it and even some of those that did?

"New" Triodes!

Yes, we have found two lost Triodes, Sarfraz Khan and Surinder Sandhu!

Sarfraz e-mailed me from Pakistan to say he was pleased to find that we were still going 50+ years on. Like many of us he is a grandfather and feels unchanged from 1970, except for a few bulges here and there! He didn't recognise anyone in the photograph, so maybe we need to produce a "then and now" compilation?

Surinder also e-mailed me (as Sarfraz had told him about us) – he hoped that some of us may even remember him. He will try to come to the next reunion.

And what of the "old" Triodes?

Chris Giles

Chris says he doesn't seem to be able to escape from the world of aviation fuel storage and distribution systems! He is just completing a pair of containerised tanker offloading modules for a UK regional airport and a couple of fuel storage and pumping systems for an equipment manufacturer. Aside from this work, he has a large garden to manage, with much of the work relating to trying to fend off muntjacs, foxes, badgers, etc., all of whom have a burning desire to trash everything.

Finally, he is still heavily involved with analogue computing and he aims to go to Germany in August to help a friend try to resurrect a mechanical integrator from a Schope & Faeser mechanical differential analyser which was built c. 1950.

Steve Glenn

Steve missed coming to the reunion as he was tasked to spend the day helping his grandson, Jolly, set up his wildlife camera. Because right now he wants to be a Zoologist – tomorrow a Palaeontologist? – but he's clever and has some ambitions.

Steve is still working on his history MSc and his classic cars (when time permits).

Simon Pengelly

Simon joined us but found the journey back interesting in that in his train carriage were loads of very drunk young girls throwing food at each other. He says that at least they got off early on!

Joan Clemow

Joan said that it looked as though we had a good time and she was sorry she couldn't make it as she had grandparent duties. Hopefully she will make it next time. She adds that unfortunately last year was completely written off by illness. But she is well now and just getting back into her activities.

Richard Lewis

Unfortunately, Richard's tooth was giving him problems and so he had to make an emergency appointment with the dentist that morning. But he got to us later and told us he has almost withdrawn from tutoring, just one A level maths pupil left, he still commutes to his place in France and, apart from the tooth, all things are as well as expected.

Nick Hiscock

Nick has been persuaded to have another turn at being Rear Commodore House to the 1300-member Warsash Sailing Club. This means looking after two buildings, two boat pounds, two jetties and a couple of slipways, all in a prime location on the River Hamble and the Solent. Needless to say that is keeping him suitably busy.

Family-wise Nick has been married to Sheila for over a year now and elder daughter Jenny carries on as professor of Supramolecular Chemistry at Kent, leading a large research team. Younger daughter Pippa (PhD maths) is on maternity leave from Lockheed Martin with Nick's second (of two) grandson, who arrived 99th percentile for weight and height – likely to be bigger than Nick then!!

Caroline Danks

Caroline wasn't able to make it, because her husband (and honorary Triode) Tony had just had knee replacement surgery. She asked to extend her apologies to all and she promises to try and make it to the next one!

Edward Hyams

Edward's 'post-retirement' work focus has remained largely in supporting innovative and early stage cleantech companies. He is of the view that we do not get the balance of risk versus investment right (and the recent Heathrow sub-station fire incident has not changed his views on that!) and he thinks we take a very 'conventional' incremental approach to linking-in new assets. So he has started to work through how AI might help us achieve a more elegant solution to achieving a suitable power system for the mid-21st century. It so happened that he attended a really interesting 'Imperial Insider' event in March and learnt that there is now a 'high power' team at IC with a new specialist focus on all issues relating to sustainable energy and net zero. He found this quite inspirational and really encouraging – and maybe lets him off the hook with thinking through how to apply AI in this area!

Away from engineering he continues to support the Lymphoma Action cancer charity, which has provided great support and insight for him and for many other sufferers of lymphatic cancer.

Tony Godber

Tony says he'll be firmly stuck in Western Australia until August (trip to Sydney) and then November (four weeks Southeast Asia cruise out of Hong Kong). Having enjoyed having his entire family living in close proximity for around three years, his daughter Felicia and her husband are moving about two hours south to manage a winery. He looks forward to plentiful supplies of wine in the future! He has just enjoyed a two-week holiday in Bali (Bali is to Western Australia as Spain is to UK for holidays). He is still working casually part time, averaging one or two days per week between grandparent duties.

Hugh Culverhouse

Last year Hugh had to have his left leg and part of his pelvis amputated and he says that, since October, his new life has been largely about recovery and learning to live with only one leg. Without the leg, he says he can sit down on a normal chair for the first time since 1990 – wow, wonderful! He is now back on the bike, training like mad on the home trainer in the garden, not yet on the road. But more importantly his body is free of any cancer – thank goodness!

Antony Ardeman

Antony couldn't be with us this year as he was on a cycling holiday in Nice - we hope he had a great time.

George Wloch

George told us that a few years back a friend (professor of finance at the local university) asked him if he could cover an undergrad course on Financial Risk Management for one term – three hours a week. Spin forward a couple of years and he finds himself running an MSc on Fintech and has this year run two-week courses in Kuala Lumpur and Hanoi. And now he is writing a book on the evolution of money from bartering to crypto!

He admits he is actually enjoying going back to university – so much easier on the other side! He promises that he will be good for a beer in May 2026 in the Union Bar.

George Gabrielczyk

George says he can't see himself in UK for a while yet – too much to do at home! Work on the manor house is proceeding (he sent us pictures of restored fireplaces), as is the rebuilding of another property, and he bought a 1.5 acre lakeside plot last year to develop. He says that, of course when he retires, he will have soooo much time for everything!

Meanwhile, he took a short break recently, racing his home-made jalopy. He flipped it upside down (with him in it)! But he put it back right way up and it still won the 'Special Mad Cars' class anyway!

Peter Cheung

Past readers may remember Peter's skill at making a wooden rocking horse for his daughter – he has now moved on to making violins! He is working on his third now and showed us a video of one of the violins being played. It sounded wonderful, do we have an Antonio Stradivari in our midst?

Paul Cheung

Paul (who is Peter's older brother & better looking, he says), lives in Hong Kong (and offers to buy any Triode a lunch should they visit there). Although 'retired' is still involved in a number of Hong Kong University courses. He comes over to the UK for two months every year to see his children and grandchildren. He'll try and get over a bit earlier one year to join us at our reunion.

Phil Harris

Phil said that he had little to report as his wife's ill health in the second half of last year had curtailed their activities. They are slowly getting back to normal now with a few short trips away. He did have a successful pair of eye cataract operations (i.e. 'phacoemulsification and intraocular lens') at the beginning of this year and can highly recommend the procedure if your sight is suffering – everything is now clearer, brighter, and bluer (as the yellowish cataracts form a blue filter).

Martyn Hart

Martyn is still on the Parish Council (now trying to get extra buses on the local routes), involved with rebuilding their language academy, plus a community energy project – so basically as busy as ever! He still gets some time to see his son in North Carolina and continues thinking about his Noise Cloaking project – maybe one day it will work!

ALUMNI

Have you organised a reunion of your class, course, department, year or a group of old College friends?

Why not tell the readers of Imperial ENGINEER about it?

Many of our readers like to hear about their contemporaries, even if they didn't know them well (or at all) at College.

Martyn Hart has been writing reports of the Triodes' reunions for years, and since we have been including them in Imperial ENGINEER the Triodes have found more of their cohort, and many other non-Triodes who enjoy catching up with Martyn's thumbnail sketches of the lives of the Triodes alumni – we laugh, gasp, cheer, or sigh in relief with each update!

Follow Martyn's example, write up your reunion and send it to us for the next issue of Imperial ENGINEER

(see contact details on page 2)

Environmental advice, solidly researched

CHRIS DOWN (Lecturer Mineral Resources Engineering and Centre for Environmental Technology, 1976-88)

Chris was born on 20 April, 1947.

Between 1965 and 1968 he went to university in Bristol where he studied Botany, followed by a PhD on 'Soil development on colliery waste tips in the Somerset Coalfield'.

He arrived at Imperial College in 1972 as a Research Assistant in the Dept. of Mineral Resources Engineering at the RSM. In 1976 he was appointed as a lecturer in the Dept. of Mineral Resources Engineering and Centre for Environmental Technology, teaching both Undergraduate and Postgraduate courses.

In the mid 1970's, Chris and John Stocks – another RSM Lecturer – co-authored the definitive work of the period on Mining and the Environment. Entitled, 'The Environmental Impact of Mining', the book was published in 1977. Years later, Chris was to lament that they had only made a passing reference to decarbonisation which, fifty years later, has become so central.

In 1978, The Environmental Section of the MSc 'Mineral Production Management' had a full module relating to Environmental matters, led by Chris and John Stocks. Many of the students in this year had been working overseas for several years before attending the MSc course and, in many of these countries, environmentalism had not developed as a 'Green' issue as it had in the UK. Green issues have developed significantly since then, but Chris always had a crystal focus on seeking to support the correct balance between the need for mineral production and seeking to protect and restore the environments from whence they came.

Chris had a very sharp and inquiring mind, which fed his panoramic sense of humour, and he quickly became a valued member of the teaching staff and an entertaining and engaging social companion for both staff and students.

During my own time in the UK Minerals and Quarrying Industries, Chris always gave me solid and sound advice when we had Environmental issues developing and how to avoid them. I always valued his comments, criticisms and suggestions. These were normally backed up with wry and insightful humour which ensured that points were easily and gratefully adopted.

Chris left Imperial in 1988 but continued to work in the UK minerals industry as a Planning and Environmental Consultant.

He developed a thriving practice, with major clients, in which both environmental and planning regulators, local authorities and his clients valued his totally professional and solidly researched advice. In many cases, he secured planning consents for clients which ensured that a fair and proper balance was achieved between social, environmental and economic considerations.

Chris died on 29 May, 2025. He will be sadly missed by all who knew him as a friend and colleague.

With thanks to
Michael Nott
Mineral Production Management

A true English gentleman and avid collector

LEONARD ARTHUR COLSTON FULLER (Mech Eng 1957-60)

Leonard was born in Andover, Hampshire, on 3 September, 1936, the first child of Arthur Biddulph Fuller and Vida Christian Fuller. Leonard was followed a few years later by his sister Margaret Dorothy Fuller.

The Fuller family were avid collectors of antiques including fine ceramics, silverware and books which they latterly housed at the family country estate at St. Mary Bourne, Hampshire.

Leonard studied Mechanical Engineering at Imperial, graduating in 1960.

Mechanical Engineering was his true passion, and following in his father's footsteps, he joined the family business, Taskers, which made many engineering items but excelled in the production of bespoke high specification road trailers. Indeed, in his very early years, Leonard assisted his father, filing MOD papers during WWII. At this time Leonard's father designed and built (at his own cost) a special trailer called the Queen Mary trailer to transport spitfires and other aircraft back to the factories to be repaired. This design was comprehensively adopted with the Queen Mary trailer being subsequently put to use across the globe.

Sadly, Taskers suffered many pressures after the war requiring the location of the firm to be moved from the Anna Valley site to a lower cost base further north. This was devastating for Leonard and many of the other highly skilled staff, so he and a few colleagues set up a new company in 1984 called Andover Trailers which is still in business today.

Leonard sold the firm to another passionate mechanical engineer in 1992, but continued as a director.

He was also a director of the trade body SMMT (Society of Motor Manufacturers and Traders) where he became a driving force for change and standardisation in the UK, and also worked with Europe to set new standards.

Leonard was a true English gentleman, he was always courteous, very polite and always well turned out.

He had great knowledge of the motor industry but was also very knowledgeable about horology, the arts and nature. He lived from the age of thirteen in the picturesque private family estate in St Mary Bourne surrounded by nature, tranquillity and his beloved ancient wood.

He continued to work full-time right up until his late 70's, and then decided to go part-time and then fully retired at the age of about 82. He still kept in contact with Andover Trailers but now had a little more time to focus on the things he wanted to do. He loved travelling with his friends to Greece, Italy and beyond, exploring historical sites and was fascinated by the engineering skills of the Romans and Greeks. He also followed in the Fuller family's passion for collecting, and he established his own particular interest in horology putting together a carefully considered collection with the clocks placed throughout the house and kept in working condition. He also continued to work with machinery, making his own clocks from basic metal and using his lathes and other engineering tools whilst still entrusting the maintenance of his valued timepieces to highly experienced antiquarian horologists.

Leonard acquired most of his clock and watch collection during the late 1960's into the 1970's but was still buying in 2004. This is when he acquired a Vallier, Lyon, pre-hairspring watch, together with movements by George Graham, John Knibb and Thomas Tompion. Over the years, Leonard acquired many fine pieces including, in September 1966, the highlight of his collection, a Charles II month duration longcase clock by Thomas Tompion, numbered 136.

Leonard passed away on the 23 April, 2024 in St Mary Bourne. Neither he nor his sister Margaret had married, so the direct family tree stopped with them. They were both passionate about their careers and enjoyed their lives, following their passions.

Leonard's wish that his collection be sold to benefit charitable causes showed testament to his gentlemanly character.

The sale resulted in a very generous donation being made to the OC trust

A leader in the fields of engineering and aerospace

Air Marshal, Sir COLIN TERRY KBE, CB, DL, FREng (Aero 1962-65)

After graduating from Imperial in 1965, Sir Colin devoted almost 40 years to the Royal Air Force (RAF), rising to the rank of Air Marshal before retiring in 1999. He served as Chief Engineer RAF; Director-General of Support Management; Chief of Staff, Air Officer Commander in Chief at RAF Logistics Command, and on the RAF Board as the Air Member for Logistics. He was appointed Knight Commander of the Order of the British Empire (KBE) and Companion of the Order of the Bath (CB) in recognition of his exceptional service.

Following his retirement from the RAF, Sir Colin continued to shape the future of engineering in the UK. In 2002, he became the first Chair of the then newly-formed Engineering Council UK, and quickly earned the confidence of the Board, being regarded as a neutral and unifying figure among professional engineering institution leaders.

He advocated tirelessly for the value of Chartered Engineer (CEng) and Incorporated Engineer (IEng) status, leaving a lasting impact on the status and recognition of the engineering profession in the UK, and in December 2002 he featured in the Economist as one of the 100 most influential people in Britain, alongside then-Prime Minister Tony Blair and Lord Woolf, the Lord Chief Justice.

He served as President of the City & Guilds College Association in 2003-4.

Sir Colin's influence extended beyond his work with the Engineering Council. He held senior positions in industry, including as the Chair of companies which included Parker Meggitt, Centronic Limited and BOXARR. He also served as President of the Royal Aeronautical Society and was a Fellow of the Royal Academy of Engineering, a recognition of his significant contributions to the advancement of engineering.

Sir Colin was a figure of immense respect within the engineering community and his legacy will continue to inspire future generations of engineers and military leaders.

A man of many interests

WILLIAM TREVOR 'JOHN' DAVIES, DIC FIMechE, FIChemE (Mech Eng 1945-48, Chem Eng 1951-52)

John was born on 30 September, 1927, in Ogmore Vale, Glamorgan.

In 1945, he was awarded an Imperial College Entrance Scholarship and started at City and Guilds on his 18th birthday. Winning a State Bursary in Engineering, John then switched from Oil Technology to Mechanical Engineering.

During his time at Imperial, John represented the college at boxing, rowing and rugby, playing his, (alas only,) 'international' against a visiting Thai side.

School leavers were in a small minority in the 1945 intake, priority having been given – correctly, in John's opinion – to ex-service personnel who were returning to resume their interrupted education. Working alongside veterans was, he said, a fascinating and sometimes chastening experience.

In 1948, he joined Shell Refining for three years before returning to Imperial to take a DIC in Chemical Engineering, to find that the previous roles were reversed; instead of being a boy amongst men, he was now a man amongst boys. He noted that while, academically, the undergrads were the stronger, in sports, the postgrads did better.

Completing his postgraduate qualification, John worked for the Kellogg International Corporation with refinery projects throughout Europe, the USA and Australia, as well as undertaking a twelve month position in their New York offices involved in plant design.

After time with Tarmac and Pritchard Rhodes, he was asked to join Sim-Chem Ltd (1973-77) as the Project Manager for the multi-million pound on-shore terminal facilities at Teeside, at the time the largest land-based project in the UK, handling up to one million barrels of oil a day. from the Ekofisk field.

John worked for a further five years for Fletcher & Stewart Ltd as MD at Derby, before running his own Consultancy business until retiring in 1997.

His experiences gave birth to numerous interesting anecdotes, published as 'An Engineer Remembers', some of which have been previously presented in Imperial ENGINEER.

In 1953, John married Mary, who pre-deceased him in 2002.

Outside of work, John was a man of many interests: he continued his sporting interests playing rugby for London Welsh, of which he was a life-long member, and taking up golf.

He travelled extensively, enjoying many holidays with Mary and their family.

John was supportive of neighbours and community and served on the Board of Governors of Kenfig school, near his home during retirement in Porthcawl, South Wales, where he inspired entries of teams to national science competitions. He even stood (unsuccessfully) for election as a local councillor.

In his latter years, he served on the board of trustees for the local (Welsh-speaking) tabernacl, having taught himself serviceable Welsh. One proud achievement was composing poetry in Welsh, which was published.

John died at home on 1 May, 2025. He leaves his son, Geraint, and three grandchildren.

With thanks to Geraint Davies

NOTICES IN BRIEF

DONALD RODGER-BROWN (Mech Eng 1958-60, 1961-62)

Donald was born on 22 July, 1939.

In 1955, his father died, leaving Donald's mother to run the family business, EW Downs Ltd., a manufacturer of agricultural machinery.

In 1965, Donald took over the running of the business from his mother and, under his leadership, the business expanded to include the production of machines for the waste recycling industry.

Donald died peacefully at home on 25 December, 2023 aged 84, the much loved husband of Harriet, father of Polly, Eliza, Hugo and son-in-law John, and grandfather of Oscar, Tilly and Alfie.

JOLYON EMANUEL NOVE (Civ Eng 1957-60)

Jolyon was born on 18 August, 1936.

He served as CGCU president and was to spend much of his later life in Australia.

Jolyon presented papers and published a book (reviewed in IE in 2009) on Climate Change and the survivability of its long term impact.

Jolyon died on 16 October, 2025, leaving Felicity, Susan, Jeannie and Panda, and grandchildren Giovanni, Amelia and Frankie.

AN APOLOGY

As editor, I would like to apologise for the typographical error in the title of the Obituary for Colin Chapman in the last issue of Imperial ENGINEER (IE42).

The title read:

'He diffused unexploded bombs when the regular Royal Engineers were overworked'

Of course it should have said 'defused' rather than 'diffused'.

I'm afraid this error made it through compilation, proofreading and into the final printed publication.

Which just demonstrates that proofreading is never 100% effective.

Thank you to all the readers who pointed this out to us.