



# Imperial ENGINEER



**AGMs**  
**ANNUAL DINNERS**  
**SCIENCE FOR HUMANITY**  
**BOTTLE MATCH & SHARPLEY CUP**  
**HELPING WOMEN IN RWANDA**  
**JULIANA TRAIL EXPEDITION**  
**SOMETHING DIFFERENT**

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

ISSUE 40 *SPRING 2024*

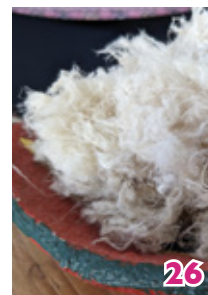
# In this issue...



8



12



26

## ASSOCIATION NEWS & REVIEWS

- 3-4 Presidents Report
- 4 RSMA Annual Dinner 2024 advance notice
- 5 CGCA AGM 2024 notice; Annual reunion lunch
- 5 Diary
- 6-7 CGCA Annual Dinner 2024
- 8-9 RSMA Annual Dinner 2023
- 9 RSMA AGM 2023 report
- 10-11 RSMA 100 Club bursaries
- 11 Great Exhibition Road Festival 2024
- 12 Bottle Match 2024 Report
- 13 RSMA sponsors Materials students in UROP

## FACULTY NEWS

- 14 Geology Society's Freshers' Fieldtrip
- 14 Vegan leather
- 15 New Year Honours
- 15 Fellowships for Dr Jess Wade
- 16 Imperial's new strategy: Science for Humanity
- 16 Imperial wins University Challenge for 5<sup>th</sup> time

## FEATURES

- 17 PLATE 2023, *Michela Puglia*
- 18-23 Juliana Trail Expedition Summer 2023, *Sophia Marr, Eleanor Parker, Elen Edwards, Alisha Oner, Hana Biblekaj, Lucia Necchi*
- 24-27 Sanitary Pad Project, *Aakeen Parikh*
- 28-29 And now for something completely ... ordinary! *Tim Smith*

## ALUMNI NEWS & VIEWS

- 30 Alumni Awards 2024
- 31 Imperial College is more than a place to study..., *Mary Clark*
- 32 A family connection with Imperial for almost a century, *Colleen Shilstone Richardson*

## OBITUARIES

- 33 Colleen Dorothy SHILSTONE RICHARDSON (Elec Eng 1945-6)
- 34 David WILBRAHAM (Chem Eng 1957-60, 60-63)
- 34 Geoffrey Nigel KING (Civil Eng 1958-61)
- 35 Rene Ludwig GUERSTER (Mech Eng 1957-60)
- 35 Gregory Andrew LILLEKAR (Mech Eng 1962-65)



Cover image  
Laghi di Fusine, Italy  
(see Juliana Trail Expedition,  
pages 18-23)

Photograph © Sophia Marr

# Imperial ENGINEER

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## FINAL COPY DEADLINE FOR THE NEXT ISSUE: SEPTEMBER 30 2024

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The Editorial Board of Imperial ENGINEER reserves the right to edit copy for style and length.



Welcome to another edition of Imperial ENGINEER! At the moment, I am writing this from Singapore, which I shall have a little more to speak of, below.

Just over 1 week ago, I heard the news of yet another win for Imperial in the latest edition of University Challenge. And what a win it was, despite going up against an undefeated UCL in the final, Imperial scored an impressive 285 points. Indeed, the total score for the final was a staggering 405, proof – if it were ever needed – that the opposition team was no slouch!

What has led Imperial to win for an unprecedented fifth time, the last win being in just 2022? There is a great article about the student-led machinery behind the College's wins: *How to build a University Challenge team* (<https://www.imperial.ac.uk/stories/building-a-university-challenge-team/>)

It's an entertaining read, and I encourage you to have a look. The Faculty of Engineering should be proud of Sourajit Debnath (from Earth Science and Engineering) and Adam Jones (Computing) who joined Justin Lee of Chemistry and team captain Suraiya Haddad of Medicine to secure victory.

In other news, Imperial unveiled its rebranding around 6 weeks ago. Though one can always expect some turbulence around such events, things seem to be settling down. I admit, however, that I am somewhat displaced from the centre of gravity on this one: currently, I am serving as academic director for Imperial Global Singapore. Announced at the time of rebranding, Imperial Global Singapore (IGS) represents the presence of permanent bases for Imperial outside of the UK. Unlike other universities that have based their extra-national presence around teaching campuses, Imperial's activities under Imperial Global (IG) will be research and translation based, seeking to maximise the impact of its research in the world.

The first of these IG entities has been established in Singapore, partly funded by the National Research Foundation of Singapore. A launch event for IGS was held at Eden Hall in Singapore, the UK Ambassador's Residence. IGS will serve as an umbrella for a number of research programmes. The first of these, IN-CYPHER, represents a collaborative research programme between Imperial and Nanyang Technological University, and seeks to address the cybersecurity challenges posed by "connected" medical and healthcare devices. The research activities of IGS will be predominantly conducted in Singapore, but with strong collaborative links back to Imperial's London base.

Later this year, we shall hear about the launch of other Imperial Global locations (four are rumoured to be in the pipeline; Singapore, Ghana, the USA, and India were announced in the strategy). I am sure that you will join me in wishing Imperial every success in these exciting endeavours.



Anil  
Bharath

## PRESIDENTS REPORT



Paul  
Holmes

Spring is a season of renewal, a time when the world awakens from its winter slumber and burst forth with new life. With longer days, warmer weather, it is no wonder that Spring brings about a sense of optimism and hope. This is apt for me and this first Presidents report in Imperial ENGINEER. As the continued hard work of the committee members through much of last year and the winter months provides a solid foundation for this year.

We have taken our first steps in organising and delivering a mentoring program for RSM students with the support of our membership. Interest was initially received from 71 students, covering a range of topics from, CV writing, interview techniques to specific industry sector knowledge and company introductions. Following an initial pairing between alumni mentors and student mentees, several fruitful discussions have been undertaken. We are currently refining the mentoring process for next year and I am sure this will continue to strengthen the bond with the RSMA membership and RSM student body.

Planning is under way for the **2024 Summer BBQ for Final Year Students** which will be occurring on **Tuesday June 25<sup>th</sup>**. A venue is yet to be decided but it is hoped this will be finalised in April. Following the decision last year to split the Association and the Trust's Annual General Meeting away from the Final Year BBQ, to allow for an additional social event in the calendar to engage with RSM students, we have planned that the **2024 RSMA AGM will be held on Tuesday 8<sup>th</sup> October 2024**. This will be in the first couple of weeks of the new academic year, and it is a useful event to encourage students to sign up as student members of the RSMA.

**Last year the RSMA celebrated its 150<sup>th</sup> year.** The RSMA was formed in 1873, initially as the RSM Old Students' Dining Club. As well as a yearly reunion, the aims of the Club were to promote the RSM and to advance its interests and those of its members; objectives which remain to this day. So why not put the next **RSMA Annual Dinner on Friday 22<sup>nd</sup> November 2024** in your diary now? It will be held in the Rembrandt Hotel, Knightsbridge. This year we are delighted to welcome Dr Susannah Maidment, Principal Researcher, Fossil Reptiles, Amphibians and Birds Section at The Natural History Museum, as our guest speaker. See page 4 for a brief biography of Susie.

In this edition there are a number of reports that I hope will be of interest to you. February 23<sup>rd</sup> and 24<sup>th</sup> 2024 saw RSM 174 spectators and players make the journey to the South West and win back both the Bottle Match and the Sharpley Cup in Men's Hockey. Whilst these were the only wins for RSM with the other 7 games in tennis, women's hockey, badminton, football, tennis, lacrosse and netball all going to CSM.

The RSMA recently supported the RSMU careers evening held on the 14<sup>th</sup> March 2024. It was organised by the current RSMU Hon. Sec., Hettie Holmes and 6 speakers from a variety of industry backgrounds provided an interesting and engaging event.

The committee continues to maintain a very active relationship with the RSMU and key societies within the RSM such as

*Continues overleaf...*

## NEWS & REVIEWS

*Paul Holmes, continued from page 3*

Geology, MatSoc and GeoPhysicsSoc. All of them are Represented on the RSMA Committee meetings and the RSMA provides financial support where needed. These Clubs and Societies are the life blood of the RSM and it is very pleasing to report that these organisations managed to maintain a very active schedule of virtual events throughout the year. As mentioned earlier all organisations enjoy, and want more, interaction with the wider alumni group.

The RSMA International representatives in Western Australia continue to play an active role with Jasmine Crocker and Katie Bell hosting 3 RSMA sundowners in Perth since November. Participation is growing and it's great to see the friendships made within the RSM family continued across the world.

In the 2024 Autumn term the RSMA Trust awarded three £1250 bursaries to final year students. All of this year's winners, as well as those from past years, are a shining example of students who have demonstrated true RSM spirit and uphold the values of the RSM by giving comradeship, help and advice. This is now the sixth year running that the Bursaries have been awarded and 22 students have benefitted from the tremendous generosity of RSMA members. This is a significant example of how you are directly supporting students at the RSM. Remember ALL the funds for this Bursary have been raised by YOU through your kind generosity at events and specifically by those members who have supported the 100 Club. This is an amazing achievement and is a concrete example of former students of the RSM who want to give back to the current student body. Lastly the 100 Club, this is slowly growing and I would encourage you, if you are able, to sign up and support the RSMA via the 100 Club or by a one off donation. The Committee has recently set up different ways to allow members to support the 100 Club, for example offering a monthly direct debit to spread the cost. Read on for a piece from the three new RSMA Final Year Bursars and how you can sign up and keep helping the RSM students.

I hope you find this issue informative and I look forward to seeing some of you in the RSM and /or at an RSMA event in the near future. Lastly, many thanks for your support it is truly appreciated. The RSMA is always looking to attract more Committee members so if you can spare a few hours every couple of months please do get in touch. Remember you can all still use the email address [rsma@imperial.ac.uk](mailto:rsma@imperial.ac.uk) to contact the RSMA at any time. Please send us your news and we will look to share it with the wider RSM Community.

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## Book your place for the 139<sup>th</sup> RSMA Annual Dinner, Friday 22<sup>nd</sup> November 2024

Once again the RSMA Committee will be hosting the 2024 Annual Dinner at the Rembrandt Hotel in Knightsbridge at 11 Thurloe Place. The event will start at 7:00-7:30pm for a three course dinner with wine and tea/coffee.

This year the RSMA is especially delighted that we have arranged for **Dr Susannah Maidment** to speak to our assembled members and guests.

Susie is a Principal Researcher in fossil reptiles at the Natural History Museum, London, UK. Her work focuses on the origin and establishment of dinosaur-dominated ecosystems using a diversity of techniques ranging from taxonomy to biomechanics and sedimentology. She is well published with more than 65 papers in the peer-reviewed literature, and is currently supervising six PhD students. Susie has a PhD in vertebrate palaeontology from the University of Cambridge, and prior to working at the NHM, she was a Research Fellow at Imperial College and a postdoctoral researcher at the Natural History Museum. She also spent two years working in industry as an exploration geologist and has a first-class degree in Geological Sciences from RSM, Imperial College.

Susie appears fairly regularly in the media talking about dinosaurs, and has been a guest on BBC Radio 4's The Life Scientific and The Infinite Monkey Cage. She was one of National Geographic UK's Women of Impact in 2019. Finally, in 2016 she

was awarded the Geological Society of London's Lyell Fund and in 2017 the Palaeontological Association's

Hodson Award, both for notable contributions to palaeontology.

**So grab your formal evening attire and book a ticket now!**



## CGCA Annual General Meeting and President's Lunch

The CGCA Annual General Meeting and President's Lunch will be held on Saturday, 8<sup>th</sup> June 2024, starting at 11:30 am in the Queen's Tower Rooms at Imperial's South Kensington Campus (the Queen's Tower Rooms are on the ground floor of the Sherfield Building). Note that this year, we are trialling both a Saturday and lunch time event to see if this will enable more people to attend in person. Access to the AGM will also be available via a Zoom session.

The AGM will be chaired by **Professor Anil Bharath** at the start and include a review of the past year and presentation of the 2023 Accounts. Anil will then hand over the Presidency to **Professor Kelvin Higgins** BSc, MSc, DIC, FEng, FICE, FCIHT, Senior Partner at the Geotechnical Consulting Group and visiting Professor at Imperial College, who will chair the rest of the meeting. This will be followed by the election of all Committee posts (excluding President and Vice Presidents) and other AGM business.

If you wish to stand for any joint Committee posts, please contact the Hon Sec by email (Guildshs2018@outlook.com) with your name, email address, and the

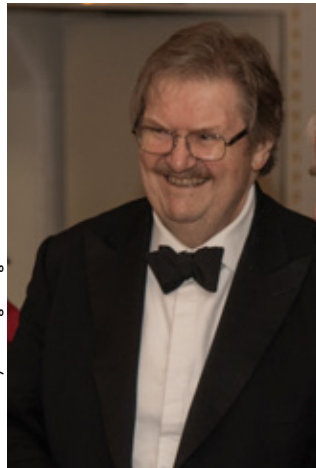


Photo courtesy of Yifeng Zhang

### Professor Kelvin Higgins will take over as President of CGCA at the AGM

post(s) you wish to stand for. Any member of CGCA is able to stand for a Committee post.

The AGM will be followed by a presentation by the new President of the Association. Following on from Kelvin's presentation, and starting at 13:00 will be the social part of the event, the President's Lunch which will be a BBQ held on Queen's Terrace (weather permitting, served in Queen's Tower Rooms if inclement).

The schedule for the event is:

- 11:00 Queen's Tower Rooms open. Refreshments will be available until the start of the AGM.
- 11:30 AGM starts.
- 12:00 AGM ends; Kelvin's presentation begins, ending after a question and answer session around 12:50.
- 13:00 President's Lunch starts on Queen's Terrace. A BBQ meal, including vegan options will be served with wine and soft drinks.
- 15:00 Event ends.

The AGM and presentation are free to attend.

The President's Lunch is a prebooked ticket event. Prices of tickets and how to obtain them will be published in a future e-Newsletter and on CGCA's website (<http://cgca.org.uk>) and social media in the near future. Partners and guests are most welcome at the Lunch and it is an excellent opportunity to meet the Committee and other members – hopefully in the early summer sunshine!

## Annual Reunion Lunch

The Annual CGCA Reunion Lunch was held at the Rembrandt Hotel (opposite the V&A) on 25<sup>th</sup> November. In a change of venue from previous years, a gathering of some 62 alumni and partners, including six present-day students and the obligatory Spanner and Bolt enjoyed a three-course lunch and much convivial conversation.

As is customary at this event, a number of speakers from different cohorts were kind enough to say a few words between courses about life at College in their day.

This included Richard Preece representing several Civils who graduated in 1968, who was followed by Mr E.L. Wisty (a friend of the late Peter Cooke) – although there was a vicious rumour that it was really Peter Garratt (ex-CGCA President) dressed up as him.

There followed stories by Martyn Hart representing the large group of Triodes (Elec Engineers from 1973), and Andrew Longworth who represented six Mech Eng fellows from 1978. Along with Simon Bolton (Mech Eng alumni from 1993)

and Milia Hasbani (Bio Engineers from 2018) – good to see younger attendees! – we had a wide spread of disciplines, as well as years, all in one room. Proceedings were rounded off with an address by Danny Zhuo, this year's CGCU President, who then called a Boomalaka. A fine and uplifting way to end what was, by all accounts, a most enjoyable event.

If you're interested in attending this year's lunch, and graduated in a year ending 4 or 9, it will be held at the same venue on Saturday 23<sup>rd</sup> November.



Photo courtesy of Peter Chase

## 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](mailto: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](mailto:alan@dickson.com.au)  
John Sykes – [johnpsykes@gmail.com](mailto: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](mailto:matt@in2oilandgas.com)

### Imperial Engineering Alumni, Johannesburg, South Africa

**Quarterly Johannesburg Lunch**  
(1<sup>st</sup> May, 21<sup>st</sup> Aug, 20<sup>th</sup> Nov, 19<sup>th</sup> Feb)  
Baron & Quail, Woodmead,  
Johannesburg, South Africa  
Contact: Richard Gundersen –  
[Gundersen@yebo.co.za](mailto:Gundersen@yebo.co.za)

### Triodes reunion

**Electrical Engineering class of 73**  
Saturday, 18<sup>th</sup> May, 12:00-17:00  
FiveSixEight, Beit Quadrange  
South Ken Campus

### CGCA

**AGM & President's Lunch**  
Saturday, 8<sup>th</sup> Jun 11:00 for 11:30  
Queen's Tower Room, Sherfield Bldg,  
Sth. Ken. Campus  
See CGCA website to book for lunch:  
<http://cgca.org.uk>

### Imperial Alumni

**Annual Alumni Celebration**  
Thursday 13<sup>th</sup> Jun 19:00-22:00  
Science Museum, Exhibition Road  
Tickets £60  
For details and to book:  
<https://bit.ly/IE40-Annual2024>

### Great Exhibition Road Festival

Saturday 15<sup>th</sup> – Sunday 16<sup>th</sup> Jun  
Exhibition Road  
Free festival of arts and science  
led by Imperial College with other  
Albertopolis institutions.  
<https://bit.ly/IE40-GERF>

### RSMA

**139<sup>th</sup> Annual Dinner**  
Friday, 22<sup>nd</sup> Nov 2024, 7:00 for 7:30  
Rembrandt Hotel, Sth. Ken. SW7 2RS

### CGCA/RSMA

**Traditional Reunion Luncheon**  
Saturday 23<sup>rd</sup> Nov, 12:30 for 13:00  
Rembrandt Hotel, Sth. Ken. SW7 2RS  
For all CGCA and RSMA members  
who graduated in a year ending in a  
'4' or a '9'.  
Booking form included with this issue.

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](http://bit.ly/IE-WhatsOn)

The Friends of Imperial College regularly organise events of interest to alumni (see [bit.ly/IE-Fol](http://bit.ly/IE-Fol))

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**

# CGCA ANNUAL DINNER 2024

The Association's 110<sup>th</sup> annual dinner took place on Friday 1 March, at Stationers' Hall in the City of London, when members, guests, staff and students gathered in the newly decorated Hall for their annual get together, with good food, wine and friendship.

The evening started with the by now common concern about whether Boanerges, the 1902 James and Browne vintage car, would be able to make it to the Hall. At about 17.30 the signs were not good. I received a phone call saying that there had been a breakdown but was reassured by the Bo team that all would be well. I crossed my fingers and waited, and it was roughly at this time that the rain began to fall. And so it went on, as guests entered the Hall, damp but eager to get out of the downpour. As the time for dinner drew nearer, the mood lightened when Bo arrived, bearing students and mascots, and before long, Spanner and Bolt were in place and Bo was parked in the courtyard in front of the Hall. By this time, guests were more inclined to think about a glass of sparkling wine and a place at the dining table, so Bo was left to wait until after dinner for members to assemble and admire.

The dinner proved to be very good, with the food and wine receiving many accolades from the diners. The caterers, Searcy's, who are based at Stationers Hall, certainly did us proud on the night, and Echo, the second wine of Lynch Bages, on its first showing from the CGCA cellar, certainly rose to the occasion.

Professor Hugh Brady, President of Imperial College made his first attendance at a CGCA event, as principal guest. Referring to his career as a transplant surgeon, he described himself as a migrant worker who had travelled widely before arriving at Imperial College. Starting at Hammersmith Hospital in 1981, when he first really became aware of Imperial as a major Institution, he spoke about his great



**Professor Hugh Brady, Imperial College President**

Photos by Yifeng Zhang

pleasure in taking up the post of President at one of the world's leading science and technology centres. He also welcomed the opportunity offered by the evening of learning about the background to engineering at Imperial and the role of engineering as a catalyst for many good things. He was also able to draw parallels between engineering and his own medical discipline, both being about problem-solving and sorting things out, with medicine becoming increasingly involved with devices and machines developed by engineers. If he had any concerns, they were about how we were probably too modest about our achievements and how we should celebrate our successes much more.

With this in mind, he took the opportunity to speak about the forthcoming launch of the College's new strategy, which had just been approved and due for a formal launch on 5 March, meaning that CGCA would be the first to hear about it.

Because Imperial is already very well-perceived, always in the top 10 universities worldwide and with the aim of remaining there, 85% of activity will remain the same. However, there would be new opportunities created by the creation of new Schools, bringing staff together in big communities

to collaborate and innovate. Areas of activity would include cancer research, climate and sustainability, health robotics and space and security strategy. There would be enhanced educational opportunities, training and high-level education and extended learning with companies. Imperial's global reach would also focus on strategic links with local universities, building on the College's many exciting contacts with top Institutions across the world. The title of the strategy sets the main objective; Science for Humanity.

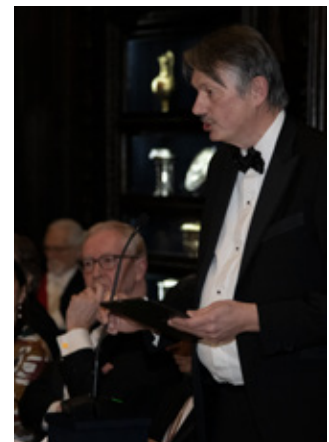
The speeches continued with an address by the CGCA President who introduced the main guests, including a representative from City and Guilds of London Institute; and Professor Nigel Brandon with a vote of thanks from the guests.

Speeches were followed by the student awards, which were made by the College Consul for Engineering, Professor Ann Muggeridge, assisted in the case of the FCGI Centenary Award by Faiza Khan for CGLI and Commodore Barry Brooks for the Fellows. The awards were:

- **Mr Alexis Montet**  
Holbein Memorial Award 2021-22, as Sportsman of the Year. Presented this year as he was unable to attend in 2023.
- **Mr Hugo Stanbury**  
Holbein Memorial Award 2022-23, as Sportsman of the Year
- **Ms Dana Gadd**  
Peter Moore Memorial Award 2022-23, as this year's Bo Driver
- **Mr James White**  
FCGI Centenary Award 2022-23
- **Mr Hidde Kolmeijer**  
John and Frances Jones Prize 2021-22. Unable to attend this year so will be invited next time.



**Professor Anil Bharath, CGCA President**



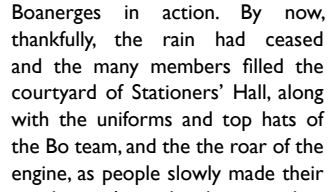
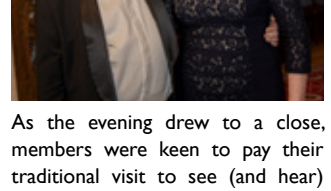
**Professor Nigel Brandon, Dean of the Faculty of Engineering**



**Members of the CGCU Executive supporting Spanner**



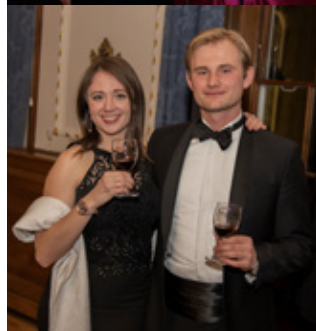
**Professor Ann Muggeridge, Imperial College Consul for Engineering, presenting: (L-R) the Holbein Memorial Awards for Sportsperson of the Year for 2021-22 to Mr Alexis Montet, and for 2022-23 to Mr Hugo Stanbury; and the Peter Moore Memorial Award to Bo Driver Ms Dana Gadd**



**Professor Ann Muggeridge, Imperial College Consul for Engineering, assisted by Faiza Khan for CGLI and Commodore Barry Brooks for the Fellows, presenting the FCGI Centenary Award 2022-23 to Mr James White**



As the evening drew to a close, members were keen to pay their traditional visit to see (and hear) Boanerges in action. By now, thankfully, the rain had ceased and the many members filled the courtyard of Stationers' Hall, along with the uniforms and top hats of the Bo team, and the the roar of the engine, as people slowly made their way home. A good night seemed to have been had by all.



**Colin J Kerr  
Dinner Organiser**

# R SMA ANNUAL DINNER

The 2023 annual dinner of the RSMA was again held at the Rembrandt Hotel in Knightsbridge. The dinner marked the 150<sup>th</sup> year since a group of RSM students formed a dining club in 1873 to keep in touch with the alumni and the RSM. The club subsequently become the Royal School of Mines Association. One hundred and fifty members, guests and students attended. This was the largest dinner for many years and was the maximum number the hotel could accommodate.

The Association was extremely grateful for additional sponsorship from Rio Tinto Plc who were also celebrating a 150<sup>th</sup> anniversary of operation. Rio Tinto's very generous support covered the cost of all the student tickets who attended the dinner. Rio Tinto felt that this

support of future generations is very much in keeping with their recently refreshed purpose of "Finding better ways to provide the materials the world needs".

Paul Holmes, President, welcomed everyone to the dinner. Steve Kessler, Executive Chair Clean Tech Lithium, was the guest speaker and highlighted his industry experiences, including the development of Rosing Uranium, and what the benefits of an RSM education can do.

The RSMA was particularly pleased to welcome Doug Leishman as an honorary guest. Tim Cotton introduced Doug and gave an overview of the Rocky Fund benefits to the RSM. Doug studied at the RSM and graduated in 1981 and has helped set up the Rocky Fund at the RSM to provide financial

assistance to qualified students of Earth Sciences at RSM. Doug always appreciated the opportunity to study at the RSM and whilst he was self-funded, he was aware there were others at Imperial not as fortunate as himself.

Each year the Rocky Fund will provide one large cash bursary to a deserving undergraduate student and two smaller cash prizes to graduating students enrolled in Earth Sciences at RSM. The following were the worthy winners of the inaugural Rocky Fund awards:

- Anna Coates Rocky Fund Bursar - MSci Geology
- ESE Future Leader in Scholarship award: Xiang Yan
- ESE Future Leader in Industry award: Joshua Warner

Sam Casement was awarded the Rees Rawlings prize for a sustained and outstanding contribution to The Royal School of Mines. The Peter Harding prize was awarded to both Dave Bishop and Tim Cotton for their ongoing support and contribution to the Association over the years.

The 2024 dinner will again be held at the Rembrandt on 22/12/24.



**Clem, the RSM motorised mascot outside the Rembrandt**



**Sam Casement receiving the Rees Rawlings award from Paul Holmes President RSMA**



**Dave Bishop and Tim Cotton with their Peter Harding shields**

Photos courtesy of RSMA / Trevor Fletcher



**Inaugural Rocky Fund recipients. L-R Paul Holmes, Doug Leishman, Joshua Warner, Sarah Duncan (Imperial College Advancement) Tim Cotton, Anna Coates and Xiang Yan**



**Paul Holmes and guest speaker Steve Kessler**



# RSMA AGM

Jim Platt, 1957 – 1960, composed and read a poem to the dinner to mark the 150<sup>th</sup> anniversary.



The Royal-School-of-Mines Association,  
In fellowship meets for celebration,  
To dine as One in dedication,  
To glories past,  
Midst joy and goodwill, approbation  
Comes first and last.

We of the Royal School of Mines  
Walk the proud walk and hold the lines,  
We stand on rock, we cull the fines,  
And comrades cherish,  
Our way is straight, its grace defines,  
May discord perish.

Mines people, such a worthy breed,  
In heart and honour, word and deed,  
The RSMA tends the seed  
Unto the letter,  
And peers who watch in awe concede  
There are none better.

Our Absent Friends stand by our side,  
They are of us, they live in pride,  
Our warp and weft, the true and tried,  
Each glowing ember,  
Their spirits bright, their flowing tide  
We will remember.

Then let us sound a great "Hurrah!"  
Disciples of St Barbara,  
The ties that bind us, near and far,  
Are treasures told,  
RSMA – a shining star  
Of purest gold.

Jim Platt RSM 1957 – 1960  
On the occasion of the  
150<sup>th</sup> Anniversary RSMA Dinner

The AGM was held in the RSM on 12/10/23 and was well attended both in person and virtually. This year sees a change in timing of the AGM as in 2023 the RSM Association and Trust undertook a simplification project to align both entities financial years to a July – June cycle. This also aligns with the College Academic year and so allows easier accounting of activities across the RSMA, Trust and the RSMU.

Generally, the Association had a good year and has seen an upturn in membership applications, especially from students. Both the Association and the Trust accounts show their respective accounting periods closing in sound financial health with respect to their charitable activities and goals.

The new committee elected for 2024 are shown below.

In terms of the Trust's Trust Deed, the President, Honorary Treasurer and Honorary Secretary of the Association and the President of the RSMU are appointed as trustees ex-officio. Those offering themselves for election as trustees are shown below.

Tim Cotton, retiring President thanked all those who had served on the committee in 2023. Special mention was made for Fiona Cassidy for heading the Trust Committee for so many years and similarly to Dave Bishop who stepped down from the Treasurer's position.

## Election of officers and committee for 2024

President:	Paul Holmes
Senior Vice-President:	<i>Position unfilled</i>
Junior Vice-President:	Richard Griffiths & Danny Hill
Past-President:	Tim Cotton
Hon. Secretary:	Chris Webborn
Hon. Treasurer:	Tim Cotton
VP International:	Jasmine Hedra Crocker
Membership Secretary:	Trevor Fletcher
Members:	Arka Sakar Daisy Jennings-Grey John O'Reilly Samuel Casement Eleanor Jay David Bishop Carla Huynh (IC Exploration Board Rep) Reha Chandresh (President RSM Union) Hettie Holmes (Hon Secretary RSM Union) Amy Dean (President Geology Society) James Bell (President GeoPhysics Society) Dawson La (President Materials Society)
Overseas:	Celia Hayes

## RSMA Trust Board

<b>Trustees:</b>	<b>Trustees ex-officio</b>
Peter Waugh (Chair)	Paul Holmes (President)
David Bishop	Tim Cotton (Treasurer)
Prof. John Monhemius	Chris Webborn (Hon Secretary)
John O'Reilly	Reha Chandresh (President RSM Union)
Lorraine Craig	



Tim Cotton hands the presidency to Paul Holmes

Tim Cotton congratulates Dave Bishop

Photos courtesy of RSMA / Trevor Fletcher

# RSMA 100 Club 2023/24

In 2016, the RSMA committee introduced the 100 Club. The objective of the 100 Club is to give bursaries to deserving students. Members join the 100 Club by committing £200pa, and it is hoped that 100 members will sign up, hence the title, to create a healthy fund of bursaries for the RSM students. Members make a non-binding pledge to donate £200 per annum (although lesser contributions are also accepted) for 10 years. For those members who are UK tax resident the Trust can further increase the funds by applying for Gift Aid on those donations. A prize of £250 is awarded twice a year following a draw of the active 100 Club Members at the RSMA Annual Dinner and the RSMA AGM. Finally, all 100 Club members receive a commemorative lapel badge in recognition of their generous donation.

The Bursaries are currently set at £1250 per student and are awarded annually with the first recipient being awarded in Oct 2018. Deserving students are selected by the RSMA Awards Committee in conjunction with the RSM Departmental Undergraduate Study Directors.

The 100 Club continues to provide a substantial contribution to the Association's coffers which enabled three bursaries to be awarded in 2023 to students who have shown good academic progress and made substantial contributions to the students and RSMU.

This bursary means a lot for the recipients; read on for a few words from them about what it means to receive the funds and how it has helped them.



**Paul Holmes, RSMA President, with bursary recipients Angela Knowlson, Reha Chandresh and Oliver Fuller-Field**

Photo courtesy of RSMA / Trevor Fletcher

### Angela Knowlson

I am Angela and I am in my fourth year of studying Earth and Planetary Science. As a student who relies on the Imperial financial hardship scheme to cover the costs of living in London, I was extremely grateful in receiving the RSMA bursary in recognition of my commitment to the RSMU. The invaluable support provided by the RSMA has allowed me to fully immerse myself in my final year outside my academic studies.

The bursary has enabled me to partake in activities which otherwise would have been financially unattainable. This Easter I was able to go on the university ski trip which has quickly become a highlight of my university experience and is an opportunity I would have missed without the RSMA support. Moreover, this bursary is contributing directly to my post-graduation plans, covering some of the costs associated with climbing Mount Kilimanjaro which I will partake in July!

The generosity of the RSMA has not only provided financial relief, but significantly enriched my final year outside of my academic studies. It has made a lasting positive impact on my university experience and beyond and I am sincerely thankful for their support.

### Reha Chandresh

I am Reha Chandresh, a final year MSci Geology Student, and I am honoured and thrilled to have received the RSMA 100 Club Final Year Bursary Prize. The RSM has been such an integral part of my university experience, ever since

I joined Imperial. Despite the pandemic in my first year, I felt a sense of belonging in the RSM community and being involved in the online version of all RSM events allowed me to remotely experience the culture and socialize with my fellow Royal Miners! My interest in RSM activities grew so much so that I went on to hold the roles of Balls Officer in my second year, Honorary Secretary in my third year, and RSMU President in my final year. As Balls Officer, I helped organize the Fresher's and Spring Dinners, ensuring a smooth transition from online to offline events. As Honorary Secretary, I had a chance to work with RSM Alumni and organize an RSMA Careers evening. Working alongside the rest of the RSMU Exec Committee, I played an integral role in organizing the various dinners and Bottle Match 2023. As President of the RSMU this year, I lead an excellent committee of 27 student officers, and with their support I am striving to improve student experiences and ensure the smooth organization of various RSMU events and activities, whilst also providing leadership to the prestigious RSMU Community of over 2000 undergraduate and postgraduate students. I have simultaneously participated in events organized by the Geology and Geophysics Societies and been heavily involved in departmental representation roles and outreach activities.

Needless to say that it is within this community that I have found my second home, made friends whom I can call my family, and created memories that will last a lifetime! And as cliché as it sounds, volunteering my time and efforts for the RSM has been an extremely

*100 membership slots are still available and the contributions do make a difference. To sign up visit [www.rsma.org.uk](http://www.rsma.org.uk) or scan this QR code:*



## Great Exhibition Road Festival 2024

rewarding experience, as I have observed myself grow as a person, both personally and professionally.

I am profoundly thankful for receiving the RSMA bursary prize, as it has allowed me to make the most of my remaining months as an undergraduate student. With these funds, I was able to partake in the IC Snowsports Club's Annual Ski Trip to the French Alps – a sport I've dreamed of trying and participating in during my university years. Being able to go on this trip and try skiing for the first time was an incredible experience. It not only introduced me to a new hobby but also broadened my horizons by exposing me to different cultures in a new setting – something I would not have seen myself doing otherwise. Moreover, the trip provided a perfect opportunity to unwind at the conclusion of my final Spring Term and served as a celebratory moment for us final-year students, marking the culmination of our lectures and MScs.

On the academic's side, I have thoroughly enjoyed conducting research as part of my MSci, investigating fluvial landscape responses to the seismic activity on young, active normal faults in the Gulf of Corinth in central Greece and interacting with my research group and colleagues from across the department. I have also taken on my final set of lectures in modules covering a large range of topics from planetary surface processes to earth tectonics and data science and machine learning.

Being awarded the RSMA 100 Club Final Year Bursary has eased my final year experience, while also allowing me to give back to the community through my role as President, ensuring any spare time goes towards enjoying RSMU and RSMA activities. And it makes me immensely proud to bring joy to the university life of my peers and see the positive impact on the community I volunteer for! My love for the RSMU community is beyond words, and I take immense pride in being a Royal Miner. I am deeply grateful to the RSMA for honouring me with one of the bursary prizes this year and for acknowledging my efforts and contributions to the RSM throughout my degree journey. I am committed to continuing my efforts and engagement with the RSM as a dedicated RSMA member in the years to come!

Oliver Fuller-Field

Hi, I'm Ollie (Final Year MSci Geology), originally hailing from near Southend in Essex, and I have been fortunate enough to receive the generous contribution of the

RSMA in the form of the 100 Club Bursary in my final year here at the Royal School of Mines. This award was not only vital for helping sustain myself as a student and young person during this difficult economic period, but also a great boost for my ability to give back to the RSM and Imperial as a whole through removing potential financial barriers, enabling me to contribute to an even greater range of events and activities.

Being active within the RSM community has been integral to my life at Imperial since the first week I joined. Despite the dampener of COVID on the student experience, the strength of the RSM community endured and shone through in the characters I met in my first year and the limited events which were possible at the time. It has, therefore, been of upmost importance to myself that I contribute as actively as possible to sustaining this sense of community and 'spirit of the RSM' within the School of Mines, as well as bringing my own personality and contributions to bear. This bursary prize has most definitely allowed me to bring this to fruition most effectively within my final year, bestowing the ability to attend the widest selection of events possible by easing financial restraints on myself. Not only has this been of particular importance due to the ongoing state of the economy, but also as a final year student, this has removed an added layer of financial stress on top of an already loaded calendar of MSci dissertation, job applications, career preparation, etc., which would otherwise threaten to compromise the ability of final year students to continue their contributions within the RSM community.

No community remains prosperous without utilising the strengths of its older members. This is why this bursary prize for final year students has been so beneficial to myself and others in my year, and why I feel so strongly that students must remain active within the RSM community throughout their degree and after, despite the academic pressure provided by Imperial, in order to enrich life for all members of the RSM, from fresher's week to graduation. In the modern world, soft skills gained are equally (or more) important than any degree earned, and the RSM is a fantastic community in which to socialise, 'network' and to grow as a young person. I continue to be grateful to the RSMA for their support of myself with the 100 Club Bursary, and to all student activities within the RSM, and I look forward to using the RSMA network to remain connected and contributing to student life in the future.



Photo: Imperial College, London

South Kensington's annual celebration of science and the arts, led by Imperial in partnership with cultural and research institutions along and around Exhibition Road, returns this summer on 15-16 June 2024!

Vicky Brightman, Director of Public Engagement at Imperial, and Festival Director said: "This year's Festival programme is full of uplifting events that will invite visitors of all ages to imagine a positive vision of the future where people, communities, and the planet flourish together. By creating engaging and accessible ways for the public to interact with Imperial's research through these events, the Festival connects hundreds of our staff and students to diverse audiences – encouraging conversations, sharing opinions, and inspiring the scientists of tomorrow!"

The Festival is presented across themed zones exploring different elements of Imperial science, including:

**Energy Zone** – explore the latest sustainable solutions to our planetary emergency, from interacting with a fully functioning model town powered by green energy to building your own decarbonised battery, before moving on our floor panels to generate energy and help power the Festival.

**Tech Zone** – from micro-bots to smarter AI and revolutionary MedTech, discover how magnificent machines are working to propel mankind into a flourishing future. Check out medical marvels in prosthetic, wearables keeping our health in check, and tiny robots used in our bodies to treat illnesses.

**Space Zone** – learn to code a model Mars rover, send interplanetary messages using microwave lasers or check out the tiny cosmic particles trapped inside our cloud chamber to understand the universe on a sub-atomic level.

Exciting elements from 2023 return this year, including the extremely popular **Future Food Zone**. Featuring

new content and a bigger and better demo kitchen – where visitors can learn how to make meals for both a healthy body and a healthy planet from top chefs and scientists.

Creativity and science will fuse again at **Paint Lab**, with ten new artists creating large-scale murals live during the Festival weekend.

The **NextGen Zone**, a space designed specifically for young people, is back but brimming with new activities! Including AI-gaming, electric racing and VR for mental health, as well as a relaxing area to grab a free snack and listen to a DJ. The Zone is programmed with the help of the Young Producers, a group of 18-24 year-olds from the surrounding boroughs who support the Festival team in creating content that speaks to younger generations.

We've created a brand-new place for visitors to engage with science in relaxed and creative ways: our **Science Cabaret Tent** on Dangoor plaza! Visitors can grab a drink from the nearby bar before settling into a game of mathematical bingo, watch performances from award-winning poet and ex-scientist Jack Cooper or create their own algorithmic art!

Some exciting new talks and workshops on this year's programme also include:

**Can Psychedelic Drugs Help You Flourish?** – explore the use of psychoactive compounds in mental health treatment, creative problem solving, and personal wellbeing with researchers from the Centre for Psychedelic Research.

**Seeds of Change** – sow the seeds of a greener tomorrow at a workshop with the Royal Society of Sculptors and students from Imperial's *Engineers without Borders* team.

**Will Humanity Thrive on Other Planets?** – join Britain's first astronaut, Dr Helen Sharman, for a panel discussion on the latest military and commercial technologies that may help us flourish beyond our home planet.

# Bottle Match 2024 Report

On the fine weekend of 23-25 February 2024, 174 RSM students made the journey down to Cornwall for the 122<sup>nd</sup> edition of Bottle Match, making it the biggest away Bottle, ever! Filled with the highest RSM spirits, all of us Royal Miners prepared for a fantastic weekend of sporting display and being the loudest cheerleaders of our sports teams. The Men's and Women's Hockey were scheduled for Friday evening. The rain was pouring down, there was some occasional hailing and lightning that made the playing conditions miserable, but that didn't stop both of our teams from putting on an incredible performance. Hairs were standing on end (literally) and the cold evening concluded with CSM Women's Hockey winning 7-1, while the RSM Men's Hockey team saw a stellar 7-3 win! Saturday the 24<sup>th</sup> of February brought slightly better weather and partly cloudy skies, and us RSM-ers were ready for another round of sports and fun. The RSM Netball team put on a phenomenal performance, limiting CSM's scoring while massively improving our score from single digits in the past years. The match ended with 53-30 win to CSM Netball. Badminton, Tennis, and Squash were played one after the other, although yielding losses for the RSM, our side showed improvements and impressive efforts from all our players. The lacrosse team was assembled only a couple of days before Bottle, and we were still able to field a full team, ending in a 20-0 loss. The football match was accompanied with some questionable decisions from the referees and excellent play from the RSM team, although CSM did get the better of us with a 4-0 win.

And finally, the biggest game of the weekend – the battle for the infamous Bottle itself – rugby! It kicked off with high anticipation from both ends. Within the first 20 minutes, the RSM team were off to a strong 7-3 advantage over CSM. The size of our supporting crowd was definitely smaller, but that didn't stop us from being much louder in our cheering and chanting – so much so that their players and referees turned around to laugh at our chants. It was a very long, nail-biting 80-90 minutes, especially when we were leading 12-3 towards the end. And that's it – the whistle was blown, the match concluded and as we knew it, the RSM WON BOTTLE, for the first time since 2019!!! The uproar of celebrations after this was unmatched, after all, we had beaten CSM on their home turf! The weekend ended with CSM hosting us for a great players' dinner,

awards ceremony and party, and we carried our after-party to Newquay's finest – Sailors – to dance the night away.

Overall, it was an excellent weekend of sports and fun. Through these games and traditions, we further strengthened our camaraderie with CSM, built bonds and created memories that will last forever (which is the end goal of such a rich weekend). This time round, we went to their grounds, shocked them to their core with our performances and support, won Bottle, and returned! Can it get any better?

We would like to express our heartfelt gratitude to the Royal School of Mines Association, the Faculty of Engineering and the departments of Earth Science and Materials for their gracious support – both financially and in spirit – that helped make this weekend possible. Of course, a huge thank you to all the players and spectators who made it to Cornwall, played and cheered, making the weekend what it was – extremely special.

In summary, the scores were as follows:

- Rugby: RSM 12-3 CSM
- Men's Hockey: RSM 7-3 CSM
- Women's Hockey: RSM 1-7 CSM
- Netball: RSM 30-53 CSM
- Football: RSM 0-4 CSM
- Lacrosse: RSM 0-20 CSM
- Squash: RSM 1-1 CSM
- Badminton: RSM 6-23 CSM
- Tennis: RSM 4-8 CSM



**The Men's Hockey team won the Sharpley Cup**



**The Men's Rugby team won the Bottle**



Photos courtesy of RSMU

# RSMA Sponsors Materials Students in the Summer 2023 UROP

As part of giving back to the RSM student community, the RSMA was pleased to support the following 3 students over the summer 2023 Undergraduate Research Opportunities Programme. The bursary contributed towards the living costs associated with undertaking the research experience (the UROP) within the Royal School of Mines during last summer.



**Aaron Edobor working in the lab**

## Aaron Edobor

Hi, my name is Aaron Edobor, a third-year Materials Science student and I did my 8-week UROP with the Mattevi Group.

The main area the Mattevi Group worked on was the “Direct ink writing of energy materials”, which has the benefit of reducing waste and increasing sustainability of conventional energy devices. We focused on producing batteries and catalytic systems using 3D extrusion printing of ink formulations. These formulations included electrochemically active materials that are mixed with additives and solvents to make a paste. The area I did research on was how effective an Ethyl Cellulose and Zinc formulation on a graphite film was, as a cathode paired with a Zinc anode and Zinc

## Sulphate electrolyte.

It was fun working with the Mattevi Group, and it gave me a lot of insight on a career in research along with the battery industry.

I am very grateful to the RSMA as UROP funding helped cover the travel costs that came with travelling from home to the lab; and some food to treat myself after a day of hard work.

## **Aaron Edobor, third-year Materials Science student**

## Felix Watson

I would like to extend my thanks to the RSMA and its members for giving me the opportunity to undertake a research placement through the 2023 UROP funding

program. Over that summer I had the amazing opportunity to work under Dr Emiliano Billoti and Chongyang Zeng. Unfortunately, I was made aware of the position after the closing of the Imperial UROP Bursary Scheme, so I was faced with rejecting the research placement. I managed to get myself some part-time work that fit around the hours of the placement such as working at music festivals across the weekends and doing outreach with the materials department, but the work was not consistent enough to sustain the expenditure associated with the placement.

The RSMA funding allowed me to travel to Imperial for a period of 3-weeks until I received my first payment for the other work. When the funding was not available, I had already prepared various samples and had planned tests in readiness. If the funding had not come through, I would have had to take a break from the placement. This would have resulted in losing a lot of momentum in the project, and ultimately, wasting the samples.

Within the project, I used techniques shown to me by the supervisors to construct carbon nanotube-based thermoelectric materials. I got hands-on experience with various characterisation methods and made loads of great contacts for potential supervisors of a PhD in the future. I did a short literature review around the topic followed by lab time for the rest of the project. Fundamentally, this taught me about the core skills of self-guided research such as lab planning, risk assessments, research collaboration and lab etiquette. All of these have helped me with my second-year labs and have given me a keen interest in doing further research in the future.

As well as this, the funding highlighted the importance of the RSMA and RSMU. Since then, I have been an ambassador within my cohort, always trying to get my colleagues to interact with RSM events such as dinners and Bottle and taking on positions within the department such as MatSoc Treasurer and Academic Rep to help build the sense of community that has been somewhat lost since COVID.

Once again, I would like to deeply thank the RSMA for giving me this opportunity.

## **Felix Watson, first-year BEng Material Science and Engineering student**

## Ayham Al-Saffar

Radiation damage in Steel structures is the reason nuclear power plants need to be retired. It makes these structures extremely brittle but is very difficult to measure. Perfectly good sources of green energy therefore get turned off too early, just in case. To fix this, we worked on finding better ways of detecting this damage in steel atom data. I was responsible for writing code to simulate this radiation damage, try different kinds of AI to detect it, and benchmark how well these AIs worked. We ended up creating a unique technique that worked consistently better than the traditional techniques. We recently published this work in the hopes of helping to extend the lifetime of existing fission power plants (and potentially future fusion power plants as well).

Studying in London is incredibly expensive and sadly student loans barely cover the cost of living here. Scholarships & bursaries like this one however go a long way in helping bridge that gap. It also doesn't hurt to have a little bit of extra spending money to make the academically challenging terms a bit more fun!

Last summer was a great way to learn more about the nuclear industry, develop my practical AI coding skills, and build the kind of career credentials that are so important in the current job market. I recently received an internship offer to do more AI-powered materials research for the branch of UK government developing nuclear fusion power. It will be an amazing opportunity to dive into the industry and I could not have managed it without getting research funding last summer. I am incredibly grateful to the RSMA bursary program for their support.

## **Ayham Al-Saffar, third year Meng Materials Science & Engineering student**

# DEVELOPMENTS AROUND THE ENGINEERING FACULTY

## Geology Society's Freshers' Fieldtrip 2023

The RSM Geology Society run an annual Freshers' fieldtrip to introduce the new RSM students to geology in a friendly, more relaxed and less academically pressured environment. Though the real aim is to help the new students to get to know each other and learn what the RSM is all about. This year we spent two nights in Forest Green at The Mill Residential Centre, which was absolutely perfect for achieving what we set out to do!

We arrived on the Friday, very excited after karaoke on the coach down. After eating our fish and chips we started up a campfire, made s'mores and played some intense

games of table tennis, table football and pool.

Saturday got off to an early start with a visit from Emeritus Prof. Richard Selley, who gave an entertaining educational short lecture on the geology of the area. Luckily, the weather had cleared so we headed up Leith Hill afterwards to get an overview of the concepts described by Richard. Lunch at the top was paired beautifully with the view over the surrounding area (Richard had suggested a glass of Denbies instead!) but we had to get going as our luck with the weather had worn off.

After returning, due to a slight

delay which had something to do with the sighting of a pub, committee got to cooking for everyone. The evening meal was held in usual RSM fashion – alternative drinking vessels utilised and several outrageous fancy dress costumes.

The Sunday mainly involved some sore heads – after all we'd learnt from our mistakes and taken Richard's advice this time! The coach home went smoothly and everyone had a great time!

We would like to extend our thanks to the RSMA for their generous donation which assisted making this accessible for all and for helping facilitate such an amazing trip!



## Vegan leather



Photo courtesy of Imperial College, London

In recent years, scientists and companies have started using microbes to grow sustainable textiles or to make dyes for industry – now Imperial researchers have, for the first time, genetically engineered bacteria to produce a material and its own pigment simultaneously.

Synthetic chemical dyeing is one of the most environmentally toxic processes in fashion, and black dyes – especially those used in colouring leather – are particularly harmful. The researchers at Imperial set out to use biology to solve this.

In tackling the problem, the researchers say their self-dyeing vegan, plastic-free leather, which has been fashioned into shoe and wallet prototypes, represents a step forward in the quest for more sustainable fashion.

Their new process, which has been published in the journal *Nature Biotechnology*, could also theoretically be adapted to have bacteria grow materials with various vibrant colours and patterns, and to make more sustainable alternatives to other textiles such as cotton and cashmere.

Lead author Professor Tom Ellis, from the Department of Bioengineering, said: "Inventing a new, faster way to produce sustainable, self-dyed leather alternatives is a major achievement for synthetic biology and sustainable fashion.

"Bacterial cellulose is inherently vegan, and its growth requires a tiny fraction of the carbon emissions, water, land use and time of farming cows for leather. Unlike plastic-based leather alternatives, bacterial cellulose can also be made without petrochemicals, and will biodegrade safely and non-toxically in the environment."

The researchers created the self-dyeing leather alternative by modifying the genes of a bacteria species that produces sheets of microbial cellulose – a strong, flexible and malleable material that is already commonly used in food, cosmetics and textiles. The genetic modifications 'instructed' the same microbes that were growing the material to also produce the dark black pigment, eumelanin.

<https://bit.ly/IE40-VeganLeather>

# DEVELOPMENTS AROUND THE ENGINEERING FACULTY

## New Year Honours

Imperial researchers have been recognised for their services to medicine, public health and climate innovation in the 2024 New Year Honours list.

**Professor Dame Molly Stevens** has received a DBE for services to medicine. She is Professor of Biomedical Materials and Regenerative Medicine in the Departments of Materials and Bioengineering, and the Research Director for Biomedical Material Sciences at the Institute of Biomedical Engineering, based at Imperial since 2004. In 2023 she was appointed the John Black Professor of Bionanoscience at the University of Oxford and she retains a part-time professorship at Imperial.

Professor Stevens leads an internationally recognised team, The Stevens Group, and has founded multiple spin-out companies. The highly interdisciplinary Group is pioneering state of the art research focused on tissue engineering, efficient drug delivery, and more sensitive screening for diseases. Her innovations are helping to democratise and personalise healthcare with ultrasensitive, cost-effective, user-friendly and mobile-connected diagnostic technologies, while solving key problems in regenerative medicine and advanced therapeutics.

She said: "I would like to thank my incredible team of researchers and staff who inspire me every day towards the mission of transforming healthcare through biomaterials technologies. All the advances that we have made into the design of new biosensing, therapeutics and regenerative medicine technologies are the result of strong teamwork both inside the lab and through to our external collaborators and key industrial partners. A key focus has been, and will continue to be, designing effective yet accessible technologies that can help in democratising access to healthcare."



Photo courtesy of Imperial College, London

**Professor Dame Molly Stevens**

Also honoured is Imperial alumna **Dame Marit Mohn** (MSc Chemical Engineering and Chemical Technology 1973), who receives a DBE for services to philanthropy. She is a supporter of education and community development in West London and a longstanding friend and donor to Imperial.

She donated £25 million to Imperial to create the Mohn Centre for Children's Health and Wellbeing, which is a hub for research, education and community engagement. The centre unites expertise from across Imperial, community partners, local authorities and health and care organisations to pursue research and education on the understanding and prevention of children's health issues. It is founded on the premise that all children deserve the best chances in life.

Through her foundation, the Mohn Westlake Foundation, Dame Marit and her trustees have also given £4m to help establish and support The Invention Rooms – the College's community innovation space in White City. She has also supported schools programmes at The Wohl Reach Out Lab, enabled refurbishment of the Central Library, provided laboratory equipment in the Department of Chemical Engineering, and created three Marit Mohn PhD Scholarships, endowed scholarships in Chemical Engineering.

In addition, Dame Marit has supported the Royal Opera House (ROH) since 2011, donating £6.7 million to ROH Learning and Participation, the education arm of its work. Her other philanthropy is extensive across education and the arts as well as culture, science, heritage and the advancement of health. To date, she has donated over £100 million.

Hundreds of thousands of children have directly benefited as a result of her educational philanthropy. Her philanthropy extends nationwide to BookTrust, Tutor Trust, Place2Be, Shout, Oak National Academy and the Royal Horticultural Society education programme.

Other honours went to **Professor Mala Rao** from the School of Public Health who received a CBE for services to public health, the NHS, and to equality and diversity; and to **Professor Richard Templar** from the Department of Chemistry and Imperial's Grantham Institute – Climate Change and the Environment, who received an OBE for services to climate innovation.

<https://bit.ly/IE40-Honours>

## Fellowships for Dr Jess Wade

Each year, staff, trustees, stakeholders and supporters of the British Science Association (BSA) are invited to nominate individuals for an Honorary Fellowship. The Fellowship recognises people who have made a significant contribution to advancing the vision of the BSA – a future where science is more relevant, representative and connected to society.

**Dr Jess Wade** was one of two recipients awarded at the end of 2023. She is a Research Fellow investigating spin selective charge transport through chiral systems, in Imperial's Department of Materials.

Her research considers new materials for optoelectronic devices, with a focus on chiral organic semiconductors. She currently works in SPIN-Lab at Imperial and previously worked as a postdoctoral researcher in the Fuchter and Campbell groups at Imperial.

Outside of the lab, Jess is involved with several science communication and outreach initiatives. She is committed to improving diversity in science, both online and offline and, since the start of 2018, has written the Wikipedia biographies of women and people of colour scientists every single day. She has contributed more than 2,000 entries to date.

Dr Wade said: "I'm absolutely delighted to accept this Fellowship. I have been a loyal supporter of the British Science Association since early in my career and this is a huge honour. I'm really looking forward to working with the BSA team to support forthcoming events such as British Science Week's 30th anniversary next March."

She receives her accolade alongside Professor Jason Arday, Professor of Sociology of Education at the University of Cambridge.

Hannah Russell, Chief Executive of the BSA, said: "We are so pleased that Jason and Jess have accepted Honorary Fellowships of the BSA. They have both done pioneering work to support and champion equality, diversity and inclusion in science and society. What they also have in common is that they have both made a significant impact while in their twenties and thirties."

"We believe that it is important to reward and acknowledge the contributions made by future leaders, as well as people who are long-established in their careers. Jason and Jess have both achieved so much in advancing conversations about structural racism and sexism in science and society, and we are looking forward to working with them both for many years into the



Photo courtesy of Imperial College, London

**Dr Jess Wade**

future, to advance our shared goal of creating a science community that represents all of society."

Further recognition came for Dr Wade at the start of 2024, when she was awarded a Royal Society University Research Fellowship. These Fellowships recognise outstanding scientists with the potential to become leaders in their fields. The long-term, flexible funding schemes provide researchers with the opportunity and freedom to build an independent research career in the UK or Republic of Ireland and pursue cutting-edge scientific research.

Dr Wade will hold the position of Royal Society University Research Fellow in the Department of Materials, alongside her new role as Lecturer in Functional Materials.

The new fellowship will allow Dr Wade to build a laboratory and appoint a team of materials scientists, physicists and chemists to explore and optimise chiral quantum phenomena. The team's research will tackle fundamental questions about the origins of spin selectivity in chiral molecules and translate these findings to new devices. The team will also engage with Imperial's newly formed Centre for Quantum Engineering, Science and Technology (QuEST), as well as the Materials for Quantum Network (M4QN).

Dr Wade commented: "I'm really excited about this fellowship as The Royal Society provide so much great support; to engage with policy, to get media training and to work with international partners. I am very lucky to be part of their latest URF cohort and would like to thank The Royal Society for their support."

<https://bit.ly/IE40-BSA>  
<https://bit.ly/IE40-URF>

# DEVELOPMENTS AROUND THE ENGINEERING FACULTY

## Imperial launches new Strategy: Science for Humanity – How we shape the future

In the foreword to the strategy document, Imperial President Prof Hugh Brady wrote:

*“Since our founding in 1907, Imperial has sought to be not only a world-leading university, but a world-changing one. We have combined our tremendous strength in science, engineering, medicine and business (STEMB) with scientific discovery, innovation and entrepreneurship, to create real-world impact.*

*Every day our students, staff and partners come together to interrogate the forces that shape our world. We do it so we can use that understanding to tackle the biggest challenges facing humanity and shape a better future. Sometimes, and this is one of those times, this means interrogating the forces that shape the future of our own university. That is why, one year ago, we came together to ask ourselves a question: “How do we maximise our potential as a force for good in the world?”*

*This document addresses that question; an actionable plan that unlocks more of the power of science to serve humanity. This is how we shape the future – for our students, our community, our planet and everyone who calls it home.*

*The strategy reflects the purpose and priorities of our staff, students and global Imperial community. It is the result of an engaging and inspiring consultation both within and outside Imperial.*

*We thank everyone who contributed their big ideas and bold ambition to this process.*

*I hope you will be as inspired as I am by what we have achieved so far and all we will achieve together.”*

The strategy, *Science for Humanity*, is unashamedly ambitious in seeking to maximise Imperial’s potential as a force for good in the world.

It builds on the university’s strong disciplinary foundations, highly collaborative and collegial culture, passion for innovation, proven convening power, extensive global partnerships, incredible network of alumni, friends and supporters and world top ten ranking.

*“Our strategy highlights a number of cross-institutional initiatives that will consolidate our position among the world’s leading institutions tackling global grand challenges.*

*The Imperial Class of 2030 is an ambitious multi-pronged programme to nurture the most talented, the most enterprising and the most diverse graduating class we have ever had the privilege to serve. This will be in part driven by new investments in our Imperial Inspires Scholarship Programme, our digital and virtual learning environment and our campuses, including the next phase of our White City Deep Tech Campus.*

*We will launch a major recruitment drive, the Imperial Future Leaders Campaign and we will invest in*

*leadership development and skills for our diverse community, including a new Imperial Future Leaders Academy for early-career staff.*

*We will introduce the new Imperial Institute of Extended Learning, which will help future-proof careers, businesses and communities by providing the advanced skills training and values-driven leadership needed to thrive in a tech-enabled world.*

*We will create four new cross-institutional Schools of Convergence Science to bring intense focus, interrogation and research impact to the emergent forces shaping our future at unprecedented scale: (1) climate, energy and sustainability; (2) human and artificial intelligence (AI); (3) health, medtech and robotics; (4) space, security science and telecommunications.*

*And through our new Imperial Global network we will achieve greater global collaboration to meet global grand challenges.*

*To further energise our vibrant enterprise ecosystem, we are creating a new venture fund, Science Capital Imperial. And we will deepen our partnerships with government, industry, our NHS partners, local communities and other stakeholders to establish the Imperial WestTech Corridor, to maximise our collective potential as a powerful engine for innovation, job creation and inclusive growth.*

*And underpinning everything that*

*we do will be Sustainable Imperial – our university-wide commitment to play a leading role in the global fight against climate change, biodiversity loss and pollution.*

*Our founding mission was ‘to be useful’; an understated precis of all that our exceptional teaching, research and innovation have made and continue to make possible.*

*But before we can usefully change the world, we must first seek to understand it. Our strategy engages with, and animates, this foundational idea: that Imperial’s shared purpose is one of inquiry and action. A scientific mindset that encourages imagination, celebrates precision, demands patience, insists on humility, rewards accidents, steels our backs and makes us brave.*

*In science, as in strategy, there is no easy prophecy and no shortcut to progress. An understanding – sharpened, deepened, or totally new – is the first and only precondition.*

*While much of our direction in this strategy document will feel new, our destination remains unchanged: to become a global home for everyone who believes in the power of science to discover, to create, to explain and to transform. To understand more of the universe and improve the lives of more people in it.*

*Imagine that.”*

<https://www.imperial.ac.uk/strategy>

## Imperial wins University Challenge for historic fifth time

The Imperial student team – comprising captain Suraiya Haddad (Medicine, 2017-2023), Sourajit Debnath (Earth Science and Engineering, 2022-2023), Adam Jones (Computing, 2020-present), Justin Lee (Chemistry, 2021-present), supported by reserve Mattia Elkouby (Chemistry, 2021-present) – defeated University College London by 165 points in a thrilling final on BBC Two.

Imperial is now the most successful team in University Challenge history, with the latest triumph following wins in 1996, 2001, 2020 and 2022.

The team’s success was marked with an event at Imperial’s South Kensington Campus with host Amol Rajan and acclaimed playwright Sir Tom Stoppard.

Imperial’s Provost, Professor Ian Walmsley, said: “Imperial’s diverse international community is used to finding the answers to really tough questions, whether that’s in the lab or on University Challenge. I’m really proud of our winning team.

Their breadth of knowledge well beyond science is truly impressive, and their disciplined approach to the quiz has made history for Imperial as University Challenge’s most successful team.”

In preparation for University Challenge, the team spent months revising their specialist subjects and practising quizzes as a close-knit group. Team Captain Suraiya Haddad said: “I’m thrilled to have captained Imperial to its fifth historic win, making us the institution with the most wins in the history of the programme. We have all worked incredibly hard and done Imperial proud. All of us were balancing our degrees with our exams, in my case my finals. We were up against fantastic opposition with UCL who played brilliantly throughout the series. The level of support we have received from the Imperial community and beyond has been amazing, thank you to everyone who has been cheering us on!”

Imperial’s team has excelled this year in rounds on a diverse range of



**The winning team with quiz host Amol Rajan**

topics, including classical sculpture, European history, Korean mythology and mathematics. To reach this year’s final, the team beat Trinity College, Cambridge in the semi-finals and overcame other teams including the University of Manchester and the University of Sheffield.

This year’s success is built in part on the expertise of previous teams, as representatives from past seasons take part in Imperial’s mentoring

programme for the competition. Contestants are selected by a University Challenge committee made up of previous contestants, who then coach the team on how to revise for different topics and maximise their ability to answer questions quickly.

<https://bit.ly/IE40-WinUC>  
<https://bit.ly/IE40-BuildUCteam>



# Product Lifetimes And The Environment (PLATE) 2023

Michela Puglia, a Design Engineering student, was given support by the OC Trust to attend the PLATE 2023 conference at Aalto University, Helsinki, Finland at the end of her 3<sup>rd</sup> year, to present a paper.

## Introduction

The PLATE 2023 conference was an enriching and enlightening experience which I had the privilege of attending. At the conference, I presented my paper titled “Policy Mapping for a Thriving Circular Fashion Industry: The Case of the European Union,” which I co-authored with fellow researchers. The paper summarised the research I conducted as part of the Undergraduate Research Opportunity Programme (UROP) that I undertook during the summer of 2022. The following report discusses my activities, key takeaways, and valuable insights from the conference.

## What did I do at the conference?

The conference was held at Aalto University in Helsinki, Finland from the 30<sup>th</sup> of May to the 2<sup>nd</sup> of June. Across the four days, a series of conference presentations, keynote speeches, workshops and campus tours took place.

The conference presentation sessions were split into seven tracks, and within each session, 3-6 papers relevant to the track were presented.

1. *Product Design and Manufacturing*
2. *Product Lifetimes in the Context of a Digital Circular Economy*
3. *Consumption*
4. *Repair and Maintenance*
5. *The Treatment of Product Lifetimes in Circularity Reporting and Disclosure Methodology*
6. *Rebound Effects*
7. *Policy and Economy*

I found that the way the conference organisers structured the sessions was particularly effective as it allowed for a focused and comprehensive exploration of various topics within the conference’s broader theme, facilitating meaningful discussions and knowledge exchange. It also meant that I was able to attend sessions which aligned with my interest in the fashion industry, such as “Sustainable Fashion Lifetimes and The Use Phase” and “The Loved and the Pre-Loved: Journey of Fashion Garments” in Track 3.

On the third day, I was both thrilled and nervous to present my paper in the session titled “Multi-level Policies for Longer Lifetimes” in Track 7.

Beyond the presentations, I took full advantage of the campus tours, visiting Aalto Soft Studios, the fashion and textiles studio, and Aalto Bioproduct Centre, the bio-based material innovation lab. Witnessing the cutting-edge facilities in these areas further ignited my passion for sustainable textile and bio-material innovation.

## What did I learn from the conference?

Attending the PLATE 2023 conference as

an undergraduate student provided me with invaluable insight into the world of research and academia. As a first-time conference attendee, I learnt about the structure and aims of a conference and how they help to build a community amongst researchers. Engaging with researchers and professionals broadened my horizons and allowed me to envision the possibilities of pursuing a PhD in the future.

Moreover, during the presentations, I had the opportunity to delve into a wide range of new and fascinating topics that were previously unfamiliar to me. I particularly enjoyed learning more about issues related to consumer behaviour and how consumption patterns can affect sustainability. For example, some of the questions which researchers aimed to answer that I found particularly thought-provoking were:

- How do we choose which products to repair and why?
- Why do we hold on to unused products and what is their reuse potential? Are we emotionally attached to them, unsure of where to dispose of them or convincing ourselves that we will one day use them?
- What implications does clothing size have on sustainability?
- Although emotional durability is considered a positive in the fashion industry as it slows down consumption rates, are there any negative effects to it too?

These intriguing questions and research findings left me with a deeper understanding of the complexities surrounding sustainability and circularity in industries like the fashion industry.

Finally, the keynote speeches delivered by industry leaders such as Nina Teufel, the Innovation Manager at Adidas, and Paula Sarsama, the Program Manager at Infinited Fiber Company, were particularly insightful. Listening to their perspectives and learning about their companies’ sustainability initiatives and circular economy efforts provided real-world context to the academic discussions at the conference.

## What did I find valuable from my experience?

Presenting my research allowed me to step outside my comfort zone and increased my confidence in public speaking. Although I was nervous, I practised and had a successful presentation. Many researchers were impressed by the quality of the presentation I delivered as an undergraduate student. The audience questions and discussions also offered new angles to consider, strengthening the findings and implications of my research. These interactions not only will help to enhance the quality of my work for further development but also provide inspiration for future studies.

Beyond the academic aspects, the conference provided an exceptional networking



opportunity. Interacting with professionals passionate about sustainability and circularity allowed me to establish valuable connections for my future career. The exchange of ideas and experiences with individuals from diverse backgrounds enriched my perspective and fostered a sense of community within the field.

Additionally, as I am still in my third year and approaching my final year of studies in September, attending the conference was also invaluable for generating ideas for my Master’s project. The knowledge and inspiration gained from the presentations and discussions have opened up exciting possibilities and directions for my future research endeavours.

In addition to the valuable experience at the conference, I truly appreciated the chance to travel independently to a new country and immerse myself in a different culture. This combination of academic learning and personal growth made the entire experience incredibly rewarding and memorable.

## Conclusion

In conclusion, the PLATE 2023 conference at Aalto University in Helsinki was a transformative and enriching experience that surpassed all my expectations. As an undergraduate student, presenting my research paper and actively participating in the conference allowed me to step outside my comfort zone and gain invaluable insights into the world of research and academia.

The conference has not only deepened my understanding of sustainability and circularity but has also opened doors for potential collaborations and future research opportunities. The insights gained from industry leaders and researchers have ignited my passion for positively impacting this field, and the exposure to Aalto University’s facilities and research initiatives also left a lasting impression.

Overall, I am incredibly grateful for the chance to attend PLATE 2023, and I look forward to applying the knowledge and connections gained from this experience to contribute actively to the advancement of circularity and sustainability in the fashion industry.

# Juliana Trail Expedition Summer 2023

In August 2023, an all-female student team completed the Juliana Trail in Slovenia. They were supported by both the Old Centralians Trust and the RSMA Trust, as well as the Imperial College Exploration Board. The team produced an extensive report of their expedition, on which this article is based.

The Juliana Trail is a 270-kilometre hiking route that encircles Triglav National Park in the Slovenian Julian Alps, which we completed, with some adaptations (including summiting Triglav, Slovenia's highest mountain at 2,864m) over 17 days in August 2023. The alpine terrain made a suitable challenge for what was, for most of the team, our first long-distance hike, allowing us to appreciate the wealth of history, culture and landscapes of the region while allowing us to retain the security of never being too remote or isolated. We all developed our outdoor skills and learnt a lot, particularly from our few days in the mountains, where we enjoyed exposed and technical hiking and via ferrata that was at times closer to climbing, giving us a taste of what future more challenging expeditions could entail.

As an all-female team, we feel passionate about encouraging other women to undertake expeditions such as this. We feel it is important to highlight some of the things that are specific to being female on an expedition, such as increased vulnerability and managing menstruation, but that though they require consideration, these should not be things that hold us back from adventure/outdoor activities. Representation is invaluable to getting more women into outdoor spaces, by demonstrating that it is accessible. As a group we have been keen to promote the Exploration Board to similarly outdoor-minded women, and hope that this report will also be an agent in doing so.

We are also very conscious of minimising our environmental impact and this was an integral part of our expedition and ethos. We sought to have as minimal an environmental impact as was feasible, and while flying would ideally have been avoided altogether, those of us who had the time and ability travelled overland via bus. While on the trail we were very conscious of leaving no trace and respected the disallowment of wild camping within Triglav National Park.

## Aims

Outlined below are the main aims we had going into our expedition and what we hoped to gain from completing them.

- To safely hike the Juliana Trail.
  - Developing our skills and confidence in long-distance hiking, navigation and wild camping.
  - Have fun while doing so, and develop our resilience and teamwork.
- To document the realities of our journey, the area, trail, landscape, culture, people, history etc, through a documentary and our post-expedition report.
  - Encouraging further exploration and expeditions, and promoting the Exploration Board, especially to women.



3. To minimise environmental impact, in line with the intentions of the trail to promote sustainable tourism.

- In particular by travelling overland.
- Ensuring only footprints, and no litter is left behind.
- Encouraging others to do the same by documenting the natural beauty of the area and the possibility of travelling with minimum impact.

Our aims were achieved – we developed our outdoor skills, teamwork, and resilience, and all completed the entire trail with the exception of Alisha, who had the maturity to recognise that continuing while suffering with prior health conditions would, past a point, only end up being detrimental. This was something that we were all able to learn from. We all pushed ourselves but retained high morale and had a really enjoyable trip.

## The Area

The Balkan region of Eastern Europe is remarkably diverse – culturally, the native Illyrians having experienced Hellenistic, Roman and Ottoman influence at different times; in addition to geographically, biologically and historically. The recent history of the region has been tumultuous: from the Balkan Wars and WW1 in the early 20<sup>th</sup> Century to the dissolution of Yugoslavia from around 1990, at which point Slovenia declared independence. These are some of the youngest countries in the world, and shadows of the recent instability still persist, though less so in Slovenia than some of the other Balkan countries. Alisha, who travelled to the region last summer, was especially fascinated with the politics and social impact that succeeded such tensions and is eager to more deeply observe the dynamics and perspectives of those native to the region. Such rich history has resulted in a culture that is an amalgamation of differing influences, but a simultaneously strong sense of Slovenian national identity. There remain differences within the country, but in Slovenia the primary language is Slovenian and the primary religion Catholicism.

Geographically, the region is characterised by mountain ranges. The Juliana Trail circles

Triglav National Park, which encompasses the limestone Julian Alps including Mt Triglav, Slovenia's highest peak at 2,864m. It's the country's only national park, spanning around 840 square km and established in 1924 to preserve the region's unique natural and cultural heritage. Its diverse landscape of rugged mountains, glacial valleys, pristine lakes, and dense forests provides a sanctuary for a wide range of plant and animal species. Symbolically representing Slovenian national identity, Triglav National Park is not only a place of breathtaking beauty but also a testament to the country's unity and resilience.

## The Route

The 270km Juliana Trail is split into 16 sections, which we initially aimed to follow roughly day by day, starting at Lake Bled for its accessibility from Ljubljana, and hiking in the typical clockwise direction. However, as we planned in more detail, we decided to adapt the route to better suit what we wanted from our trip, and adding an extra dimension of challenge by cutting into the mountains for a few days, and summiting Triglav.

Our itinerary ultimately followed our plan, more or less. We used the stages of the trail as a starting point for our own structure, but adapted start/end points based on campsite/mountain hut locations. Wild camping is not allowed in Slovenia – therefore we stayed the majority of nights in campsites, a few in mountain huts, and 2 nights wild camping while we passed through Italy. We had the idea of asking the permission of farmers to camp on their land – but soon realised that this likely would not be reliable and so ended up planning our stages from campsite to campsite. We were able to walk into most campsites without having booked which afforded us an element of flexibility, though campsite density was not high enough to be really flexible – we did have to essentially cover the planned distance each day. This is where wild camping would have been advantageous.

## Trip Diary

9<sup>th</sup> August 2023

A last minute gear sort (read: a complete takeover of Sophia's living room by tents, stoves, bags, and food) made the expedition suddenly seem very real and got our excitement raring. It ended up being a tumultuous afternoon as we encountered some last-minute hiccups, but things were soon back in order (of sorts). Those of us taking the bus steeled ourselves at the prospect of the next 36 hours, suddenly questioning our environmental integrity. But with our 11pm departure from Victoria, we were off. The night was restless and full of interruptions – from border control to ferry crossings – but a little sleep was snatched.

10<sup>th</sup>

We awoke as the bus pulled into Paris the next morning, where we spent half the day in pack weight acclimatisation mode as we carted our backpacks through the city, probably knocking down a few tourists in our path. We grasped at the opportunity (rapidly dwindling) to be somewhat civilised and passed a couple of hours in a Parisian cafe, before wandering past the Notre Dame and back along the Seine in time for our next bus. The remainder of the day/night was spent reading, knitting, napping, and shifting uncomfortably in our seats.

11<sup>th</sup>

We made it to Ljubljana in the morning, where we had a much-needed shower before heading out to explore the city, equipped with an extensive list of recommendations from our Slovenian friends. A whistlestop tour of the main tourist sites later, we met Elen as she got in from the airport before a dinner of burek (the first of many) and cheap drinks in a student bar – our first (of many) Slovenian beer samplings.

12<sup>th</sup>

Ella joined us early the next morning straight off a bus from Croatia, and, finally all united, we spent the morning touring Ljubljana's outdoor shops for maps, gas, and a few other last-minute gear items, before taking the bus up to Bled; the journey offering us our first glimpse of the mountains. Once in Bled we did a colossal food shop (a combination of Sundays, public holidays, and the route meant that we would not pass an open shop for the next 5 days) and promptly began despairing as to how we could possibly carry it all. After wrestling with our bags we went to the lake for a swim (again, first of many), had a good carboload of a dinner, along with our last vegetables for a while, and headed to bed for an early night.

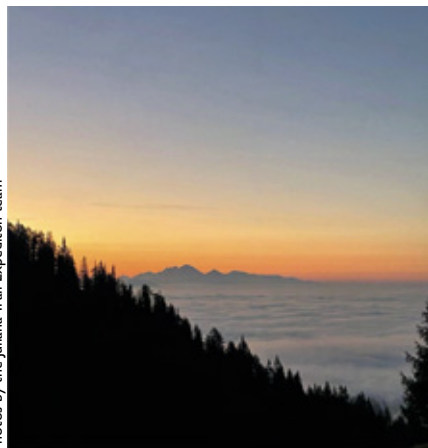
13<sup>th</sup> – Bled to Koca na Lipanci, 20.7km, 1207m elev

Awoken by a 5:30 alarm in an attempt (key word being attempt) to beat the heat, we soon set off after a questionable breakfast of bread, plum jam and noodles. We climbed steadily (and sweatily) up above the lake, through smaller and smaller villages, until we found ourselves finally on the trail proper – forested, therefore thankfully somewhat sheltered from the sun, and steep. With our heavy loads – 5 days worth of food – we were rapidly awakened to the blessing of the trekking pole.

The gradient of the slope increased exponentially until the final near-vertical couple of kilometres up to the mountain hut, which we were herded up by approaching thunder, getting caught on the receiving end of a downpour with a couple of hundred metres to go. This first evening on the trail was spent sharing card games; Cabo was quickly established as a fixture of the trip, and our first meal of lentils and couscous proved equally successful. More upsettingly, we learnt that camping outside mountain huts would not be a viable option and reluctantly paid the extortionate fee to stay inside.

14<sup>th</sup> – Koca na Lipanci to Ribčev Laz, 28.8km, 254m elev

Stumbling out of the mountain hut early and as quietly as we could in an attempt to minimise damages to the sleep of others, we



Photos by the Juliana Trail Expedition team

were confronted by a vast cloud-ocean rolling out below us, and sky alight with colour. Our first morning view of the trail rendered us pretty decidedly breathless. So did our porridge – but that was more to do with its reminiscence of slowly-setting concrete. The excitement of our sunrise cloud inversion meant we started the day in high spirits, and these somehow pervaded despite the steep, technical (slow) descent. It was damp and eerie as we descended through the cloud and dewy spiderwebs, and we passed many locals foraging beneath the trees for mushrooms and blueberries to load their baskets. We happily gorged ourselves on blueberries too (didn't dare risk the mushrooms). After a long morning, we were spat out of the welcome shelter of the trees and onto the road in the beating sun for the last stretch to Lake Bohinj. With minutes to spare, we managed to meet the (free!) bus that ran along the shore of the lake to the campsite, saving us 3km off-route. We were deposited at an oasis of a campsite, and swiftly threw ourselves into the coolness of the lake.

15<sup>th</sup> – Bohinj Bistrica to Ribčev Laz, 10.1km, 279m elev

Really enjoying the chaotic lakeside amalgam of tents and tree roots at this campsite, and having childhood excitement reawakened by its reminiscence of the Parent Trap, we decided to stay another night (note: the bar was definitely not a deciding factor). A conveniently-situated bus line meant that we were able to bus to the end of the stage and walk it backwards. Carrying only one pack between us, we were practically flying along this shorter stretch. With plenty of time, we decided to take a detour up to a waterfall – a route which took us along the banks of the icy river and meant we had basically no rational choice but to take 3 separate chunky dunks



## The expedition team



Alisha, Elen, Ella, Sophia and Hana

**Sophia Marr**, MSci Geophysics, 2<sup>nd</sup> year.

Age: 21. Extensive experience of climbing, multi-day hiking, wild camping, running and swimming weekly, cycling daily; member of ICMC, bouldering, top-rope and lead.

**Eleanor Parker (Ella)**, iBSc Biomedical Engineering at Imperial (Currently), MBBS Medicine at King's College London.

Age: 21. Extensive experience day hiking, running weekly, including marathon; bouldering weekly in ICMC.

**Elen Edwards**, BSc Biochemistry, 2<sup>nd</sup> year.

Age: 21. Extensive experience hiking, scrambling, navigating, running, training for half-marathon, competitive swimming at regional level; bouldering, top rope and leading in ICMC.

**Alisha Oner**, BSc Medical Biosciences, 2<sup>nd</sup> year.

Age: 20. Experience of hiking, climbing; bouldering, lead/top-rope in ICMC; lead navigator on Duke of Edinburgh expeditions.

**Hana Biblekaj**, International Relations (University of Edinburgh), 2<sup>nd</sup> year.

Age: 20. Hiking, camping, training and climbing 3-4 times a week; Member of Mountaineering Society at the University of Edinburgh.

**Lucia Necchi**, MEng Electrical and Information Engineering, 3<sup>rd</sup> year.

Age: 21. Experience of hiking, on snow and high altitude, ski touring; 15+ years in the Scouts, camping and building emergency shelters.

### Training

With regards to training, we all made an effort to develop and maintain our fitness for the expedition by exercising regularly, including climbing, running, swimming and cycling multiple times a week. Unfortunately we never found a time to do a training hike as a full group, but in preparation Alisha, Ella and Sophia did a 3-day hike on Dartmoor in June; Ella and Sophia fastpacked round the Isle of Wight (127km) in 72 hours, and Sophia completed the Welsh 3000s challenge in 48 hours. Elen and Hana managed to get out on regular day hikes.

We ensured every member of the team had a strong foundation in multi-day hiking/camping skills, including proficient navigation, familiarity with our equipment, using a GPS device and managing food and drink.

The significance of sufficient physical training became evident while in Slovenia when some members struggled slightly. This was perhaps something it would have been good to work on more as a team.

## FEATURES

(a dip approximately every 15 minutes meant that we probably spent as much time dressing and undressing as we did walking), which made for a very enjoyable day. Naturally, we ended the day with one last swim in the lake, but not before discovering that the sole of Ella's boot had almost fully detached...

**16<sup>th</sup> – Bohinj Bistrica to Camp Sorli, 24.3km, 1865m elev**  
Sad to finally leave Camp Bohinj, we started the day with a trip to a fortuitously situated outdoor shop for Ella to get some new trail runners. We then split up – Ella (wasting no time putting her new shoes to the test) and Sophia showed their masochistic side for the first time, deciding that it was a shame that the trail passed over the ridge without taking in the peak and that this would be an excellent chance to claim the first (if small) summit of the trip (Crna Prst, 1844m).

The others made the sage decision not to completely wear out their legs with a monster of a day, and opted to take the train through the mountain to Podbrdo and walk the latter half of the stage (17km or so). Their more leisurely day was spent making trail friends and then sitting in the campsite for multiple rounds of beer and Cabo.

Meanwhile, Ella and Sophia spent all morning trudging up the mountain, gaining 1500m of elevation. Sophia realised halfway up that the reason her pack was so heavy was because she had unknowingly been carrying 5L of water, but after a quick calculation concluded that her sweat rate was such that even 5L would not be enough to fully rehydrate. Electrolytes were taken with alarming frequency, and both of us began to recognise glaring signs of a nascent addiction, which by the end of the trip was fully fledged.

It was a tough but rewarding ascent, mostly forested (though the whirring of chainsaws suggested efforts in the opposite direction), with banks of raspberries that restored our somewhat-curtailed foraging efforts after Ella, having recently discovered green-apple-tasting wood sorrel, erroneously ate a mouthful of clover. The last section to the summit was beautiful and scrambly, with a slightly dizzying series of tightly coiled switchbacks. We made it to the top just in time to enjoy our lunch in

the rain and, as the clouds drew in darker and thunder began rumbling, we thought it wise to get down the mountain relatively promptly. It soon transpired that with a steep, slippery gravelly path and several dodgy knees between us, there would be nothing quick about this descent. It was atmospheric though, with eerie lighting and thunder echoing through the valley. We eventually reached the bottom, and we rejoined the trail where the others had passed several hours ago. Now mid-afternoon, we shouldered the prospect of another 15km, and carried on. Along the trail on this side, which cut along the flank of a steep-sided ridge, there was clear damage to the trail as a result of the recent storms and flooding experienced by Slovenia. At points the trail had been practically washed away, and at others the buildup of debris made going equally difficult. The kilometres were slowly ticked off and we reached the campsite in darkness, to the relief of the others who had been waiting hungrily for us to arrive with half the food – which they then declined to use. While we set up camp, they 'cooked', with selective ingredients (i.e. nothing even remotely tasty) and we ended up with a near tear-inducing mass of stodge (that may have once been pasta?). This was by far the worst meal of the trip.

**17<sup>th</sup> – Camp Sorli to Camp Labrca, Tolmin, 24.6km, 1131m elev**

*'The rain damage to this book is today's doing.'*

– Ella's journal, 2023.

The day started rather uneventfully, a climb up and away from the river afforded more breathtaking views, followed by a baking section of road into Podmelec. Here we met a local who implored us to visit Slap Sopota, a waterfall outside her village that 'everyone in Slovenia needed to visit'. Whilst some in the group had previously been unsure if the extra climb was worth it on tired legs – it had been sealed – we dropped our bags at the bottom of the path and went up to the spectacular 62m high waterfall, where we had our first swim of the day and a lengthy game of fetch with an enthusiastic pup. We carried on for a steep road section through Ljubinj and up the hill, where we enjoyed a lunch stop with our new trail friends overlooking the electric blue of the lake below. We then descended to Most na Soči, practically running lakewards to escape the heat. Given what followed, the irony of this was not lost on us. As we swam, clouds gathered and we were peppered with rain – we departed, up and traversing the next hill. A steady drizzle followed us and we could hear the distant sound of a Reggae festival that was taking place in the valley. And then the heavens opened; water pressure higher than a shower, and suddenly we were on top of the festival and feeling its bass thumping through the mountain. Soaked through, in a daze of surrealism, we navigated the obstructions of fallen trees blocking the path, and huddled inside the first shelter we came to – it was only when we saw lightning flash a short distance away that we had the realisation that it was in fact built of corrugated iron – needless to say, we were back out in the rain pretty

rapidly. Beginning to get cold, with water streaming down every surface of our bodies, we hurried towards the campsite a couple of km away, which we got to to find it practically underwater. Huddling in the café, a few hours were spent trying frantically to find somewhere dry to stay, without success. Close to midnight, the ground had drained just enough to pitch a tent, and we passed a damp night.

**18<sup>th</sup> – Rest day (just couple km into Tolmin)**

We awarded ourselves a much-needed rest, spending the morning with the contents of all our bags splayed across the campsite, taking advantage of the sun to dry everything we owned. Sophia and Ella were very proud of their success in rustling up a meal from the free food left in the campsite kitchen, and enjoyed a sloppy lentil/couscous soup(?), while the others looked on with some dismay. We then headed into town to resupply and run a few errands before passing much of the day in the pub. A rare hostel night was cherished and we enjoyed the luxury of a real kitchen for a full-on feast.

**19<sup>th</sup> – Tolmin to Kobarid 16.2km, 162m elev**

The day began with scrambled eggs and slightly stale bread rolls that were forced down with plenty of water to counteract the 20:80 egg to bread ratio. We took a bus back into Tolmin where we rejoined the trail, marking the start of the next few days up the Soca valley. We began parallel to the river, but a few kilometres in we realised it would soon veer away, so naturally had to have a morning swim while we could. We found an alarmingly red and alarmingly large slug in the water – a rescue which definitely awarded the team some good karma points.

After this, the majority of the day consisted of long stretches of road walking – which meant very little shade and too much direct sunlight, and made the going quite miserable, saved only by frequent breaks in the shade and passing through some pretty villages. At least it was flat – though muscles were still sore and this day also marked the beginning of a collective tiger balm dependence.

We arrived at the campsite in Kobarid, greeted by a view of the river crowned by a beautiful high bridge. We quickly set up camp and went for the second shop of the day after realising that this would likely be the last opportunity to restock for a couple of days. We also saw the familiar face of German Tim, who had pitched at a nearby plot. The evening consisted of a much needed swim where our climbing withdrawals finally got the best of us, resulting in a somewhat sketchy climb to an otherwise inaccessible ledge over the water, and subsequent jumping.

**20<sup>th</sup> – Kobarid to Bovec 20.3km, 490m elev**

We set off around 6am to avoid the worst of the heat for as long as we could, and straight away we were treated to the view of the river snaking along, shrouded in early-morning mist. The trail loosely followed the river, and we had some pretty technical (scrambly, over boulders, tree roots and loose rock) but thoroughly enjoyable walking – a far cry from the tarmac horror of the previous day. Alisha began to find it difficult though, exacerbated



by some recurring health issues she'd been struggling with for the past few days. The others helped alleviate some of her pack weight by redistributing gear, and we were able to continue. We came across a concerning series of signs saying that the path ahead was closed, but with the only alternative being a significant detour on road and uphill, we carried on, and thankfully were soon reassured by walkers and mountain bikers coming the other way.

The last stretch of around 6km was along a road which we split by taking a lunch break by the river and having a swim – and a water-snake sighting, excitingly. The last few km of the day were challenging – we were hot, sore, exhausted and frankly fed up with all the tarmac. Nonetheless we made it to the campsite in Bovec and treated ourselves to some pizza at a restaurant next door. During the evening, though, Alisha began contemplating if she should continue the hike. A combination of factors and a steep decline in overall energy and mental state meant that we all began to wonder if continuing would be detrimental. The rest of the group were very attentive in reassuring her and provided her with much needed comfort, and the decision was made that she'd see how things felt in the morning. The stars were particularly pretty this evening.

**21<sup>st</sup> – Bovec to Lago del Predil 17.8km, 938m elev**

Another early start! Hana was experiencing some pretty bad foot pain, so our morning began with a quest to find a pharmacy for some athletic tape that took us on a tour of Bovec, a tourist hotspot of the Soca valley. Soon after leaving the town, Alisha recognised that continuing was not the right thing for her – a really difficult decision and one that the whole group was saddened by, while also acknowledging that it was probably the right one. We are all immensely proud of Alisha both for making it through what she did, despite her struggles, and also recognising when she was reaching her limit. After some sad goodbyes and redistribution of kit, she returned to Bovec before making her way home over the next couple of days.

The rest of us set off again, heading up towards the pass and over into Italy. It was an interesting walk that took us through war

tunnels and back towards the high mountains, before beginning the long, steep, beautiful climb up and over the ridge to the border, gaining close to 1000m while climbing over fallen trees, navigating rocky gullies and waterfalls, and trying to remember how to breathe. We explored an old war lookout/battery before descending towards Lago del Predil to find somewhere to camp. Now over the border in Italy, and outside Triglav National Park, this was our first opportunity to wild camp, and we found a loosely flat spot overlooking the lake, and passed the evening stargazing.

**22<sup>nd</sup> – Lago del Predil to Laghi di Fusine 14km, 345m elev**

The executive decision was made to take the bus into Tarvisio to avoid 10km on a busy road, and we passed the morning meandering from coffee and croissants to pizza and gelato, trying to fit a comprehensive Italian culinary experience into a couple of hours. (That assessment may be generous – I think our transition to hiker trash was finally complete at this point and all our senses just became honed on food). While Ella was tending to her blisters on the side of the street, a lovely shop owner, himself a Camino-walker, came out to impart some blister-draining wisdom upon our medic. We did our last food shop before our next few days cutting off the Juliana Trail and into the mountains, and set off for a relatively short afternoon of walking. Short, but painful. A few km of tarmac cycle path was borne before heading through the forest, where we were inundated by mosquitoes. This swiftly sent Sophia into sensory overload and she did not recover until we reached the lake and she dove into the water in desperation. Mosquitoes can't swim. She can. When she braved the land again every inch of skin was covered, from gloves to balaklava. Other than the tiny whining biting monsters, the Laghi di Fusine were serene and immensely beautiful, set against a sheer mountain backdrop. We excitedly welcomed Lu, who had made her way from Milan to join us for a few days, and found a wild camp spot on the saddle between the two lakes.

**23<sup>rd</sup> – Laghi di Fusine to Erjavčeva koča mountain hut (Elen, Hana, Lu) 14.6km, 1100m / Dom Tamar Mountain hut (Sophia, Ella) 9.7km, 950m elev**

After having briefly saluted the two masochist forwards of the group on the event of their 4am alarm (Sophia and Ella, off to the ambitious feat of basically opening a new free solo route up the Ponza di Mezzo peak), the remaining casual hikers snatched a couple more hours of sleep. Well rested Elen, Hana and Lu then ventured across the Italian-Slovenian border after some croissants masterfully defrosted by the local cafe owner and a quick ride on the bus from Fusine to (almost) Rateče. From here a leisurely walk led us through the Olympic ski jumping slopes of Kranjska Gora (fascinating! And certainly we are not the only ones to think that, given the astonishing amount of German-plated campers parked right at their feet). In correspondence of the Olympic park the path turned sharply right and started going up the valley between the Ponza peaks (the ones which our brave companions were trying to pass via ascent + descent, rather than

circumnavigation) and the Mojstrovka (the massif separating us from our destination). We continued our walk along the Tamar valley at a sustained pace, allowed by the tolerable steepness. After passing the Dom Tamar hut (the point at which the routes of the two groups converged) we started the ascent of Mala Mojstrovka. This began with some (very) steep climb of wet and slippery rocks and continued on less technical but still quite steep terrain. The views were absolutely amazing along the whole ascent (had we had some sort of spyglass we may even have been able to see Ella and Sophia rolling down Ponza di Mezzo on the other side of the valley!). Lu decided to quit smoking after feeling her heart almost self-combust on the way up.

We had a quick meal at the top of the pass and started our descent towards Erjavčeva koča mountain hut. There we discovered that Ella and Sophia were stuck at Dom Tamar as the descent had taken them longer than expected and a storm had curtailed their efforts to reach us that night. Some beer with ginger, very yummy, and some sort of cabbage stew, not so yummy, were savoured.

Sophia and Ella had a more eventful day. We had climbed halfway up, to Rifugio Luigi Zacchi, by an acceptable breakfast hour. Here we discovered that the path we had intended to take was unpassable, and were shown an alternative route that passed further down the ridge, over Ponza Piccola and, despite being well-signposted and the way of a major long-distance trail, was not marked on either of our maps. This led us to mistakenly keep following the signs that said Ponza Piccola (i.e. up to the peak), instead of bypassing it via the pass. We made it to the summit (1902m) following a very technical ascent up a scree gully, to realise our error and that there was no path down the other side. We were forced back down the way we came – toeing the line between hiking and climbing, something very uncomfortable to do with no protection and 15kg on our backs. Finally over the pass on the other side, safe but slightly shaken, we began our descent towards the Dom Tamar hut. This was endless scree slope traversing, to the utter despair of our knees, and it took us 3 hours to make it the 3km down. By the time we had descended into the valley, the others were far ahead and an approaching storm was threatening to unleash. We decided we'd made enough risky decisions for one day and resigned to stay at this hut, with a mountain separating us from the others (and most of our food). Plain rice (miserable) and an apple strudel (delightful) later, we retired to bed exhausted.

**24<sup>th</sup> – Erjavčeva koča/Dom Tamar mountain hut to Aljazeera Dom (hitched round via Mojstrana)**

Lu saw some dotted lines on the map (in Outdooractive language they mean sure death), chickened out and decided to take a three day detour to avoid them (and to see the 7 lakes valley which had been greatly recommended by some Belgian passer by. Spoiler: he was right. Stunning.)

Lu was also right. The map markings were decidedly ambiguous, and lacked a key, so



## FEATURES

Elen and Hana continued in the hope that it was passable without gear, as Ella and Sophia had the two via ferrata kits, several km behind. After a long climb, they ended up at the base of a sheer 400m wall. Phone calls were exchanged between the two groups, and Elen and Hana descended to meet Ella and Sophia at the road, as we decided that the only way to make it to the hut we'd booked for that night would be to get a lift round to the next valley. This was slightly disappointing, and the tribulations of these two days definitely highlighted the importance of everyone double and triple checking route details, and cross-checking maps, especially when off the main trail. However, we made it successfully to the Aljavez Dom hut.

### 25<sup>th</sup> – Rest Day at Aljavez Dom

This was a much-needed rest(/errand-running) day before undertaking the epic that was Triglav. We made preparations, stocking up with snacks, renting an extra two via ferrata kits and helmets, doing some washing, sorting packs, and eating a lot of burek.

### 26<sup>th</sup> – Triglav Ascent 13.4km, 2074m elev

Triglav is Slovenia's highest mountain at 2864m, but it feels much higher and more isolated. Much of our trip had been building towards our ascent, which is an exposed and technical hike with several sections of via ferrata.

We were moving by 5am, beginning in complete darkness. It got very steep very quickly, but as the valley became infused with light the view compensated for our burning calves. Before long we reached some aided via ferrata sections – very exposed and exhilarating. This hike/climb/scramble combination was sustained until we reached Triglavski Dom mountain hut, thankful for our helmets after we saw a group of ibex scampering across a sheer cliff, dislodging rocks which showered onto the heads of unsuspecting hikers below. After something to eat we continued across the lunar landscape, past the sad remnants of the Triglav glacier, and up towards the summit, which stood tantalisingly close. It was a good two hours though before we reached it – the exposed via ferrata along the ridge and queues of people (reminiscent of those photos you see of Everest) made going extremely slow, but eventually we stumbled onto the summit – just as crowded – where we bore witness to the strange tradition of screaming into the bizarre



rocket-like structure at the top. Despite the elevation not being huge (still sub 3000m), Triglav felt impressively high. Rocky peaks and scree slopes extended to every horizon below the glacially-scoured lunar highlands of the Triglav plateau, and far far below we could pick out the hut we had started at hours before.

The descent was even longer and more arduous than the ascent. The route down was precipitous – at one point we were downclimbing a 10m rock face, and the scree placed all eight of our knees firmly in the geriatric category. The hours on the mountain began to take their toll, and emotions ran high. Eventually though we made it back to the mountain hut we started at, just as darkness was falling – a 15-hour walking day. Shattered, we still had the challenge of getting to the campsite in Mojstrana, having missed the last bus. Splitting up, we worked our charms asking for a lift. Ella and Sophia, clearly the less charming/more feral duo, spent half an hour touring the car park before having any success, while Elen and Hana sped off. Elen was clearly so thrilled by this success that she 'decided' to gift her hiking boots to the kind Germans who gave them a ride.

At the campsite, Lu was awaiting the climberesses with food which she merrily prepared (having retained the ability to move her limbs after a day of hiking that didn't even remotely resemble that of the Triglav dominatrixes). After a much needed shower, we threw ourselves into the tents for some well deserved rest. Apparently Lu tried to hold Sophia's hand with her toes in her sleep, but this is to be blamed on the fact that the sleeping arrangement wasn't ideal, as it involved squeezing three people and their 60L bags in a two-man tent.

### 27<sup>th</sup> – Mojstrana to Lipce 14km, 5m elev

While Elen was busy completing the get-your-boots-back side-quest, which saw her going back to the Olympic ski jumping spot (the guys were German, so it was to be expected that they would go there, given our observations from a couple days prior), we held council and decided to keep the day chiller and walk to Jesenice along the river. This would cut some distance and most importantly basically zero the elevation gain for the day. Unfortunately the walk wasn't as pretty as we would've expected from the first 200m on the trail. We

soon had to abandon the riverside in favour of a highway-side (where there was a very mysterious queue in the direction of Kranjska Gora and the Italian border). Fortunately we quickly made it to Jesenice, which we had to fully cross to reach our campsite in Lipce. What an eerie experience. The town was surprisingly quiet and with quite an unsettling mood. This was probably enhanced by the disappointment of seeing the river (in which we were greatly hoping to be able to dive at the campsite) turn increasingly green (but not the good shade of green) due to the high number of unconventional tributaries: some chemical plants which were probably responsible for the entire GDP of the region given their size and number. Finally we made it to the campsite whose riversideness only meant we were going to have to deal with swarms of aggressive mosquitoes (Sophia wasn't pleased).

### 28<sup>th</sup> – Lipce to Camp Sobec 22km, 529m elev

We parted ways with Lu, who had to head back to work, and we all felt the heaviness of the last couple of days of the trip – it was now not far at all back to Bled. It was a rainy day too, pathetically reflecting our mood. It was not the most interesting walking, passing through a few villages with only one last section of proper trail; also our last real hill. As we neared our destination, the rain reached a crescendo, as did the urban-ness, and we trudged the last few kilometres on grey pavement, being pelted by rain, in a way that was strangely reminiscent of London. How ironic.

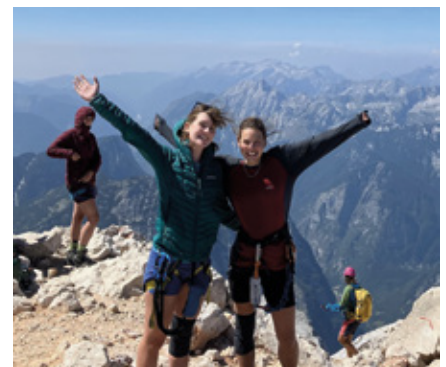
We pitched our tents (in the rain) and took shelter in the bar (out of the rain, just). It was incessant. We went (ran) to bed, eventually, in the early hours, in the rain.

### 29<sup>th</sup> – Camp Sobec to Bled (Finish!!) 4.2km, 91m elev

It was still raining when we woke up. In fact, Sophia and Ella realised that the bottom end of their tent was actually floating – the fact that they were still dry is a huge testament to the tent. It was a good couple of hours before we braved the outside. We packed up, still in the rain, and trekked the last couple of kilometres into Bled, in the rain. We arrived – in the rain! – somewhat anticlimactically. We had completed the Juliana Trail (more or less), and they didn't even have any t-shirts in stock. A celebratory dinner (more pizza) was had, and preparations were made for our various onward journeys.

### 30<sup>th</sup> – Parted ways...

A final celebration; a breakfast of 'eggy Bled' followed by a portion of the infamous Bled cake was had, before we parted ways. :(



## Considerations

### Environment

Something significant to consider for all of us is environmental impact. As always seems to be the case, there is a trade-off to be made between ease and cost, and sustainability. Therefore, with respect to transport, those of us with the time, travelled overland in order to minimise flights and thus carbon emissions. We will still offset the carbon emissions of our travel through Forest Carbon. (<https://www.forestcarbon.co.uk>).

While on the expedition we minimised our impact by following the seven 'leave no trace' principles:

- plan ahead and prepare,
- leave what you find,
- travel and camp on durable surfaces,
- minimise campfire impacts,
- dispose of waste properly,
- respect wildlife,
- be considerate of other visitors.

### Navigation, Communications, Logistics

There are GPS tracks of the official route as well as those uploaded by people hiking it – we adapted these to our route and uploaded them to a GPS device to follow. We also got a subscription to the navigation service/app Outdooractive. This is what we used to plan our route and found it to be, on the whole, very successful and comprehensive, with the exception of a couple of paths in the mountains.

We each carried a phone and small portable charger, and we had a larger solar-powered power bank for the group which was definitely worth having given that we were camping.

### Food, Water

Due to the long sustained hiking, likely in hot sun, maintaining calorie intake, nutrition and hydration were essential for successful and healthy completion of the expedition.

In terms of resupplying food, we passed through a town at least every day or two along our route to buy food and any other necessities. We aimed to consume around 3000 calories per day. We prioritised food that is calorific, space and weight-efficient, of decent nutritional value, easy to prepare and at least somewhat palatable. All vegetarian, we were conscious to ensure we got sufficient protein and vitamin B12 – lots of nuts and pulses.

Particularly considering the heat (we were expecting temperatures of 20-25°C in August, which proved to be broadly right – though several days definitely exceeded 30) and exertion, keeping well-hydrated was of the utmost importance. On the Juliana Trail we had no issues finding water – in addition to the plentiful natural sources (rivers, lakes), we frequently passed public taps. When we collected water from rivers/lakes we filtered it using a Sawyer filter, but generally this wasn't necessary. We each had the capacity to carry 4-5L of water (some days 5L was easily consumed), and generally carried 2-3 litres, and always tried to keep 1L minimum.

We also each had 2-3 (or more...) electrolyte tablets per day. We were sweating a lot, and so had a lot of salts that needed replenishing, and we quickly found electrolytes to make a huge

difference, reducing muscle cramping and any mild dehydration.

### Expedition Summary

Our Juliana Trail expedition, while not without its hiccups, was overall a real success. We hiked close to 300km, averaging over 800m of elevation gain per day, and summited Triglav, Slovenia's highest mountain (2,864m). We learnt immense amounts: about each other, about the landscape, and about the nature of these endurance adventures. We laughed and we cried; experienced all the highs and lows of a long-distance hike, and watching everyone else go through this and fall in love with the whole process was for me, having experienced it before, one of the most rewarding things about this trip. We formed a tight team, and though we welcomed and lost members along the way, we retained the same closeness and morale throughout. We supported each other when we struggled and allowed each other to fully be ourselves. We fully embraced gremlin mode, went a bit delirious most days, developed electrolyte addictions, played endless games of Cabo, had too many chunky dunks to count, and lost the function of our knees.

Beyond the team, we were privileged to explore Slovenia and the wealth of natural beauty it has to offer. Going there in the quite immediate aftermath of the severe flooding, the worst natural disaster in the country's history, although we were some way from the worst-hit areas, we really saw the sense of community too; people pulling together in hardship (which we too emulated – though our hardship was admittedly self-inflicted).

There is so much to be gained from doing things like this: the sense of appreciation of the natural world that you get isn't really comparable to anything else. Your days begin to mimic the rhythm of the sun and your feet create a rhythm with the earth. You come to know corners of people that don't show themselves in day-to-day life, and this usually includes very big corners of yourself. I think all of us would wholeheartedly recommend an expedition of this kind to anyone seriously considering it. Having said that, there are a few lessons we learnt that may be wise to bear in mind.

### Advice for future expeditions

Despite having quite a broad range of experience in day and thru-hiking across all the team, adventuring into unknown territories, maybe at different latitudes than usual and on different terrains left us with a feeling of having learned several valuable lessons. An example of this is having learned at our expense about the importance for every member of the team to thoroughly check each day's route. This is fundamental in spotting potential difficulties on the route and gives the group the possibility to collectively assess feasibility and risk, rather than leaving it to one (forgetful) person and having everyone simply assume that the route has been checked and deemed viable.

On the other hand, there were several things we took account of while planning and preparing for the route that revealed

themselves as fundamental. For example: taking electrolyte supplements (leccylytes <33) throughout the day was of great help in retaining strength, especially on very warm days, which for us was most of them. We sweated more than we thought possible, and so it follows that you need to compensate with more electrolytes than you think possible. This turns out to be quite a lot. Be wary: addiction may follow. Don't forget the water.

Another piece of gear whose importance very rapidly became blatant are hiking poles. We can't overstate the importance of carrying a pair with you if planning a long hike with even small elevation gains/drops. Had we not had our poles we probably would be all looking into reconstructive knee surgery right now.

### Acknowledgements

We would like to express immense gratitude to the Imperial College Exploration Board, the Old Centralians Trust, the Royal School of Mines Association, and the Lord Mayor's 800<sup>th</sup> Anniversary Awards Trust for their extremely generous financial support, without which the expedition would not have been possible. Enormous thanks again to the Exploration Board for the loan of gear and advice with planning the trip.

### A note from Alisha

Recognise your own limits. We all like to think that we are invincible but ultimately our body and mind are only one Slovenian hike from raging war against us. Pushing yourself is great and shows commitment but don't do it at the expense of your well-being. Speaking from the perspective of a 'less experienced' member (\*cough\* Alisha), it can be a real challenge to accept that you might not in fact be the human embodiment of physical fitness and mental fortitude that you thought yourself to be.

The physical and mental demands of a nearly 300km trek are not for everyone and that is perfectly fine! – there's no medal for self-inflicted suffering. Unfortunately, such revelations tend to follow a rollercoaster of emotions and despite preaching the importance of recognising how you feel, it is also important to note that those same feelings can be rather deceiving. One moment you feel amazing and the next you're questioning all the life decisions that led you to the one resulting in you sleeping in a flooded tent in torrential rain. Just give yourself some time to rationalise your feelings – write them down or the scariest of all – talk about them to your team. Everyone has your best interests in mind. As it turns out, sharing your feelings, regardless of if they are positive or negative, can be strangely comforting (who would've thought!)

On another note, it's very easy for me to sit here and blame my unpredictable emotions on my eventual decision to tap out whilst neglecting the fact that I most definitely did not train enough. Unfortunately, relying on good 'day-to-day fitness' does not eliminate the need to properly prepare for such insane adventures – so train. Go on those weekend hikes and go to the gym!

# Sanitary Pad Project

The OC Trust helps fund many projects, and in 2023 one of the most inspiring was undertaken by Aakeen Parikh, who has since been awarded her PhD, addressing the availability of affordable sanitary products in Rwanda. In 2021 Aakeen set up her company, Minazi Consulting, a design and engineering consultancy with a mission to eradicate poverty, reduce inequality and drive environmental, social and sustainable development. In February 2024 Dr Parikh was awarded a Natwest+Pioneers Post WISE100 award in the ‘Equality and Empowerment’ category as a woman who is leading the way in issues of equality and diversity, particularly (but not exclusively) in gender equality, equal participation and leadership.

## Minazi Consulting and Dufatanye Organisation Site Visit Report – August 2023

### Introduction

Access to sanitary products is difficult for women in the villages in Nyanza, Rwanda. Most pads in the market are expensive and this means that women are unable to purchase the sanitary products they require.

Additionally, women are unable to access reliable information on periods. This leads to some girls using unsuitable rags on their periods which stain their clothes and make girls feel uncomfortable, resulting in female students missing school.

### Background

#### Primary Research

In 2021, Minazi conducted detailed focus groups and interviews with 12 women in Nyanza on period pad usage and found a number of pain points.

This primary research showed that, in many cases, women were still using rags instead of sanitary pads. Although women knew about sanitary pads, they found the pads expensive. It was found that women from the low income backgrounds were most unable to access sanitary products, with those of school age often missing days from school when they did not have pads they could wear. When the rags ‘leaked’, they also felt a sense of shame.

Most women in the villages were unable to read and, even where they could read, the packaging was not clear or in a different language – this led to a key insight: that there is not enough information on sanitary practices either, which adds to the feeling of shame and discomfort around periods. This aligns with published findings around period poverty in Rwanda, with a number of organisations reporting girls missing school days as a result of periods<sup>1</sup>.

This project is based in Nyanza. Research conducted during the site visit in 2023 shows that the price of the pads in Nyanza is 1,000 RWF from available brands like Supa. A farmer in Nyanza from a poor area can have a limited take-home income. For reference, the minimum wage in Rwanda is around 100 RWF per day<sup>2</sup>. Comparatively, the Anker

living wage for rural Rwanda, which is the estimated wage required for a basic but decent standard of living is around 174,000 RWF per month<sup>3</sup>, the poorest farmers simply do not earn enough per month, and struggle to afford food or living essentials.

Additionally, with the rising inflation rates at Rwandan markets, such as the price of a kg of potatoes rising to 1,500 RWF overnight in September 2023, the decision can come down to the purchase of sanitary pads or food for a subsistence farmer.

With that in mind, most women will not purchase sanitary pads if there is no monthly budget to do so.

If a family does have the available disposable income for purchase of sanitary pads, another issue arises. Due to the remote village locations, and prevalence of farming communities and lifestyles, most homes are located on farming land. In these locations, waste disposal and collection facilities are limited, even if farmers live close to the roadside, as there are no waste bins.

Composting is the primary form of disposal in the region. This is a perfectly adequate, if not preferred, form of disposal for agricultural waste as it results in rich manure. However, plastics cannot be composted and as such, nappies, plastic packaging and sanitary pads remain, slowly polluting the nearby environment.

### Unlocking the potential of local resources

The sanitary pad project was designed to address the high cost of sanitary pads and increase the access to sanitary products in Nyanza in an environmentally friendly and sustainable manner. With sustainability at the core of the project, it was decided to utilise resources available in the region, which would



**Banana trees – with highly absorbent fibres in their trunks – are abundant in Rwanda**

Photos courtesy of Dr Aakeen Parikh





not only lead to creation of local industry but also increase the local capacity of the region.

One of the raw materials that is readily available in Rwanda is banana trees; bananas are a staple crop covering around 23% of all land in Rwanda<sup>4</sup>. The fibres of the banana tree trunk are highly absorbent and as such, they can be used to create the absorbent cores of sanitary pads. A benefit of this process is that it also makes use of waste banana trees. Banana trees have a single fruiting cycle. After bearing fruit, the banana tree begins to rot and die. This results in a large amount of agricultural waste.

The sanitary pad absorbent cores were designed to be made with banana fibre that is extracted and processed on the farm. This would utilise the agricultural waste from the 3,000 banana trees in the nearby banana plantation whilst addressing the key menstrual hygiene needs of the community.

## Project Details

### Aims

The sanitary pad project aims to build a local production facility and pilot the production of 10,000 biodegradable and environmentally sustainable sanitary pads from banana fibre, sourcing fibre from a local banana tree plantation in Nyanza.

The pads are to be distributed for free (or made available at a subsidised cost). The sanitary pad production is to be supplemented, with the creation and dissemination of information through awareness days and educational programs on safe, sanitary practices for menstrual health management.

### Goals

The sanitary pad project goal is to increase access to and awareness of sanitary practices for women in Nyanza through an environmentally friendly approach. The target group for this project is women from low-income families in Nyanza for whom sanitary pads are particularly expensive. This project falls under UN Sustainable Development Goals 3 (Good Health and Wellbeing) and 5 (Gender Equality).

### Progress Summary

This project has been under development for a couple of years. It was possible to begin the production facility of the sanitary pad project in August 2023. The site visit started on the 15<sup>th</sup> of August and completed on the 5<sup>th</sup> of September. A number of items and objectives were completed. Extraction of banana fibre using a banana fibre extractor machine has been started and the production of sanitary pads has also begun on the site.

The production site has also been improved with the addition of desks, electrical connections and storage facilities. Initial materials for trials have also been procured. The assembly line and assembly procedure has been developed, and procurement of relevant machinery has also been completed where possible.

Machine extraction of banana fibre has been particularly useful as it reduces the time to extract fibres from 1 week manually to around 30 mins. This proved that the purchase of the banana fibre extractor was a viable addition. Also, due to the quantity of fibres extracted, it was clear that the fibre could serve secondary purposes in addition to being a raw material for the sanitary pads. For example, Dufatanye Organisation have an arts-and-crafts initiative.



**Craftwomen of the Dufatanye Organisation weaving patterned baskets**

### Some beautiful examples of their work



This initiative helps provide a daily activity for widows, genocide and AIDs survivors, who have no other family in the community. They create artistic produce using bamboo which is purchased externally. However, due to the abundance of banana fibre, crafts such as banana fibre baskets and bags can also be produced here with the excess banana fibre that is extracted.

## Achieved Objectives

### Installation of equipment on site

A major objective of the project was to install equipment on the site and create assembly workstations.

To do this, new furniture was added such as tables for the assembly process. The room where sanitary pads were to be produced was cleaned thoroughly and electricity was installed for the processes. A carpenter was called in to install a storage shelf. Future work will include tiling and painting the walls, reinforcing the window for safety and other improvements.



**The carding machine developed at Imperial**

## FEATURES



Initial equipment such as a small steriliser has been purchased. A carding machine developed at Imperial College, London has been safely received and installed on the site. The carding machine will help with combing the fibres and softening them as intended.

### Partnering with Kosmotive, Rwanda

It is very important that the product is made in an environmentally sustainable way, however when it comes to waterproof fabrics, the material selection is limited. Waterproof fabrics are currently difficult to source locally. There is only one supplier who has been able to secure waterproof material in Rwanda for sanitary pad applications. Kosmotive, a women-led initiative in Rwanda, produces reusable sanitary pads in a small production site in Kigali. A thorough discussion with the CEO of Kosmotive, Blandine Umuziranenge,

has led to insight on the stigma and material requirements of reusable sanitary pads, which the team have taken on board.

Kosmotive have agreed to supply our project with waterproof backing material for the sanitary pad. As an organisation with a similar mission to end period poverty in Rwanda, they believe in this project and are also willing to explore the option of using the 'banana fibre cores' produced in Nyanza for their pads.

### Improved production of banana fibre for sanitary pad core

Whilst the team have been experimenting with banana fibre since this project first started in 2021, the process of producing soft, absorbent banana fibre was improved during the site visit in 2023. This was a huge achievement for the site team because the process of pulping banana waste to create banana fibre is commercially

sensitive, and therefore, the chemical process is not readily available online. Several attempts were made and the process was tweaked a few times until the produced fibre was soft, and therefore could form the core of the pad – initial testing of the previous design had found that there were some hard edges in the banana fibre core due to insufficient softening of the banana fibre. In addition to the carding machine which provided some mechanical softening of the fibre, the optimisation of the process was important as mechanical softening alone was insufficient to produce the core.

However, once the optimisation process was completed, the final product was similar in consistency and softness to cotton and wool. This matched the overall quality required for the product as it was found to be soft against the skin.

### Trial production of sanitary pads

Having sourced suppliers, installed important equipment at the site and optimised the process of creating banana fibre, sanitary pads are being produced with the new and improved designs. The designs of the sanitary pads will be described below. During the site visit, 10 pads of the new designs were trialled. These have been distributed to community members for feedback.

### Pad Designs

Pad designs have been developed to match the requirements of the community, driven by insights obtained during primary research. Two designs are being trialled; a fully reusable sanitary pad and a partially compostable sanitary 'napkin'. The partially compostable sanitary pad uses an absorbent banana fibre core enveloped in a muslin-like material which is made from 100% cotton<sup>3</sup> so that it can be composted in the farm. A waterproof panty liner is supplied with the partially compostable pads to ensure the pads remain leak-proof.

### Design 1: Reusable sanitary pads

The first design is creating reusable sanitary pads following a standard approach of sanitary pads: a top sheet which transfers the menstrual blood to the absorbent core, and a waterproof base which keeps the menstrual blood in



the pad to prevent leaks. This is a common reusable pad design. The pad is stitched together on a manual sewing machine.



### Design 2: Partially compostable sanitary pads

This design was born out of the specific need of requiring disposable sanitary pads on the farm. This design is based on creating a disposable design in the current climate with limited supply chain options, as well as the lack of clarity on environmental impacts of biodegradable plastics – as ‘plastic’ is the only current form of waterproofing. The design inspiration of this design is the tampon, which is a common menstrual product that is made from compressed cotton. Tampons have to be inserted into the vagina to soak the menstrual blood however, due to lack of clean water for cleansing the hands prior to insertion, there are risks of infection with tampons use in this region.

The idea of the compostable pocket, napkin or cushion is that it is effectively an expanded tampon that is worn over the vagina as opposed



to being inserted. The leak-proof protection comes from a waterproof panty liner.

The partially compostable design is being trialled for two reasons:

1. School students may not like to carry their used reusable pads with them at school and back. This can be unhygienic and difficult. If they want to change the pads at school, they can simply replace the ‘disposable’ section.
2. The market preference is currently unclear and there is not enough evidence to support the choice of either design. Trialling of the two designs will lead to greater insight.

### Summary

The highlights from the site visit can be summarised in terms of material production, successful banana fibre process and

optimisation, purchase of equipment for sanitary pad production, and identification of material suppliers for key aspects of the pad.

The site visit has been successful and provided many insights – it has also meant that trial production of pads can be started. The progress made in three weeks sets the foundation for the remainder of the project.

After the current stage, the next part of the project is to scale production, so that the overall project goal of producing 10,000 sanitary pads can be achieved.

1. <https://bit.ly/IE40-RwandaMore>
2. <https://bit.ly/IE40-RwandaWage>
3. <https://bit.ly/IE40-RwandaLiving>
4. <https://bit.ly/IE40-RwandaBananas>
5. An anticipated future stage of the project is to create banana fibre fabric so that the pads can be produced almost entirely out of locally sourced banana fibre



**Matthias, Jolie, Aakeen and Floride**

# And now for something completely ... ordinary!

We received this article from Tim Smith (Aero Eng 1968-71), attached to an email from Tim that said: *'My interest was piqued by Ian Mackenzie's long article in the last issue of Imperial ENGINEER about his career, as I was a near contemporary of Ian (graduating from the Aeronautics Dept in 1971 when he was doing his MSc). There was also an appeal for articles by or about Alumni. You often have articles about or written by the "high flyers" of Academia or Industry but for each one of these there must be hundreds of ordinary alumni who achieve a measure of success in their chosen career and enjoy a fulfilling life. I feel that I am one of those ordinary guys and know of several more who could provide inspiration to others who may not want to dedicate their life to being one of the "high flyers". So I attach a brief article describing my career of twists and turns around the UK which may be of interest.'*

When I assured Tim that we were interested in his article, I asked for a photo of him, and any others that could accompany the story of his career. His inevitable response was: *'Unfortunately no photos of my working life – all much too ordinary! People like me just get on with it, we don't have photos to prove we were there.'*

It seems incredible now but in the early 1970's most graduates expected to have a "job-for-life", maybe not in the same place or department but probably within the same company. My contemporaries and I soon learned that times were a'changin (as Bob Dylan sang) and we would need to be adaptable. My story is that of an ambitious engineer, never wanting to "shoot the lights out" but I think typical of most Imperial College Alumni.

## Research at the sharp end

I graduated from Imperial College with a degree in Aeronautics and Light Structures in 1971 – the same year that Rolls Royce went bankrupt and a disastrous one for the Aero industry. Lots of graduates were looking for jobs, including some who had been sponsored at Imperial by industry with the expectation that a job would be waiting for them when they finished. By chance I had seen a small notice on the Aeronautics Dept noticeboard advertising a research post with the Ministry of Defence. This had been placed by an Imperial alumnus, Roger Fancett, who had done a PhD with John Stollery and was now looking for an assistant. I applied and after a lengthy vetting process got an interview with Roger and his boss, Frank Smith (which caused some confusion later). It seemed that they were satisfied with my abilities and I negotiated a post as a Scientific Officer, despite only getting a 2:2, on the basis that a 2:2 from Imperial was equivalent to a 2:1 elsewhere! So, I finally started work in November 1971 at the age of 20.

The job was in the Ballistics Branch of the Royal Armament Research and Development Establishment (RARDE) based at Fort Halstead near Sevenoaks (it is still there, hidden amongst some trees). This was the Research department of the Royal Arsenal at Woolwich which was moved out of London during the Second World War. Much of the work was secret but Roger and I did publish a paper on the Measurement of Transonic Drag for artillery shells. After a couple of years, I was getting disillusioned with Defence – all



decisions had a big political dimension and the pay was frozen as part of the government response to inflation (this was the time of the 3 day week if you remember that). I looked at alternatives and the Gas industry which was just starting a big expansion with Natural Gas seemed a good bet.

## It's a Gas World

In January 1974, I managed to get a new job with British Gas at the Watson House research station in Fulham, West London working on the design of commercial flues. Again, maybe it helped that my immediate boss was also an Imperial alumnus who had done a PhD in Chemical Engineering! At that time, there was very little guidance on how to design flues and chimneys for large gas boilers – most designs were based on either burning coal or oil (which were seen as too restrictive for the new clean burning gas) or US practices. Using a full scale test rig in the laboratory supported by some computer simulations, my work was able to correct the US design guidance for modular boilers and this was included in an industry publication, *IM/11 – Flues for Commercial and Industrial Gas Fired Boilers and Air Heaters*, which is still referenced in commercial documents. After another couple of years, I didn't feel at home in the "ivory towers" of research and wanted

to leave London as my wife and I had started a family. I kept an eye on the British Gas vacancy notices and managed to pivot away from research in 1977 into gas marketing as an Assistant Industrial Gas Engineer in the East Midlands Gas region in Leicester.

The Industrial Marketing department used the technical knowledge of the staff to persuade industrial energy users to either switch fuel to gas or use gas in their new premises. Of course, I knew nothing about the industrial market but was keen to learn, both from my colleagues and from the many courses run by British Gas at the School of Fuel Management in Solihull. In 1980, I transferred to the East Midlands Industrial Development section and spent the next few years implementing new technology and large projects beyond the capability of local engineers, often in the food industry. I was then offered promotion to Industrial Engineer but the job was based in Grimsby on Humberside. So off to Grimsby I went with my wife and two children who were just starting school. This was a very different customer base: ranging from the Scunthorpe steelworks to large chemical plants on the Humber Bank and I was also negotiating gas supply contracts for the first time. After a few more years I was ready to move up to the next stage, as a Team Manager, and persuaded my manager to sponsor me on an Open University Diploma of Management course. However, management positions were hard to come by as British Gas had now been privatised (and known as BG) and was looking to become more efficient. Eventually, in July 1987 I was offered a position in the Bournemouth office (actually located in Poole!) as a Senior Industrial and Commercial Sales Officer – not the Manager job I was hoping for, but close enough! I was responsible for a team of 4 engineers and also a number of large gas customers who had annual gas supply contracts. Then came the bombshell – the government introduced gas competition and the industry started to break up. I decided to jump before I was pushed and joined one of the new independent gas marketing companies in 1992.

### The independent market

The company I joined, Alliance Gas, was a joint venture between BP, Statoil and Norsk Hydro and my new position was Commercial Manager for the South West selling gas to non-domestic customers. At last I had Manager in my title! I was based at home in Poole and the definition of the South West was a territory SW of a line drawn from Brighton to Aberystwyth. The company was very small (I was employee number 35 and the first with gas marketing experience) and we had 5 Commercial Managers to cover the UK. The great secret was that although we were a subsidiary of the two biggest gas suppliers to the UK we had hardly any gas to sell as it was all contracted to BG. This gradually eased, partly through government action and partly through new gas fields, and the company went from strength to strength – until it all came to a sticky end! The competition for customers had gradually increased until, in 1996, companies were selling at a loss to retain or gain market share (sound familiar?) and Statoil decided it could no longer support a JV where BP (as the main supplier) was making a profit but Statoil was making losses from the retail business. The JV was dissolved with customers allocated to either BP or Statoil. Statoil set up its own supply business under the Alliance Gas brand and I was retained by Statoil as the Commercial Manager for the SW but with fewer customers and a remit to rebuild the business with smaller customers. Then another bombshell – I was asked by the new MD to become the Customer Services Manager based in the head office in London and responsible for a team of 20. After some discussions with my wife, I agreed, packed up my sailing dinghy and moved from Poole to near Basingstoke so that I had a reasonable commute and joined a sailing club in Theale. Our children had both started at University so that was one less issue to worry about.

At this time the gas industry was in a complete mess – the break up of BG into various separate companies had led to many new gas meters not being registered and also many empty properties being erroneously billed for gas usage. After the JV split, Alliance Gas had a nominal £2million owing for gas which had not been billed to customers. This was one of the main issues for me to resolve and over the next year this was reduced to less than £200k, mostly through disconnecting unused meters and identifying the correct consumption – much to the dismay of the Finance Director! Once the company billing was stable, I made another pivot and became Quality & Improvement Manager to identify better ways of working and improve the profitability. However, the result of a big technology review was that there was no way for a small company to compete with the larger incumbent utilities and Statoil decided to close down Alliance Gas. I was made redundant in 2001, leaving in the August after my 50<sup>th</sup> birthday. I had by then been offered a post as Team Manager for gas billing of Major Accounts in TXU Energi (a successor

to Eastern Electricity) based in Essex. So another move, this time to Maldon on the coast and I sold my dinghy and used my Statoil redundancy payoff to buy a small yacht (clouds sometimes do have silver linings!).

### An electric future?

TXU Energi was a subsidiary of the large US Texas Utility company and was being supported by them to compete in the challenging UK electricity market. They operated an “asset-light” model and had sold most of their power generation assets in return for market price supplies for customers, on the assumption that competition would keep prices low – which proved to be incorrect. Unfortunately, that meant some large long-term supply contracts were now running at a loss and the profitable domestic customer base was melting away due to competition from other suppliers. Then the US company was caught up in the fallout from Enron’s fraudulent activity in the US and could no longer support TXU Energi which went into administration in 2004 and was bought by another utility company, E.ON. After E.ON transferred the Major customers to their billing operation in Coventry I was made redundant again in 2005. This was not as hard as it might have been as the E.ON redundancy package enabled me to take my company pension immediately, including the 20 years with BG which was transferred into the E.ON scheme. Also, as most of the senior managers in TXU Energi were made redundant at the same time, an ad-hoc consultancy group, Sohn Associates, was formed to market their expertise. I was one of the few managers with knowledge of the gas market and was central to their marketing plans. I had also persuaded my previous boss at TXU, who was taken on by E.ON, to pay for me to become qualified as an EPC Assessor as these were now a legal requirement in property sales and rentals.

### The Consultancy years

2005 became another pivotal year and, in addition to some consultancy work with Sohn, I started to get a decent amount of work from other consultancies for energy audits and EPCs, mainly on non-domestic properties where I had more knowledge from my previous jobs, and other audit work. I also formed my own consultancy company, Energyfactor Ltd, to simplify the billing of my earnings.

Coincidentally, in 2005 the EU introduced the Emissions Trading Scheme which was designed to squeeze the carbon emissions from large users. The mandatory scheme required companies to pay for a licence and an annual independent audit of their emissions to ensure that they met the scheme requirements. I was introduced to one of the main Audit companies by an ex-TXU manager and started to carry out these audits for a range of companies across the UK. These audits had to be carried out over the winter as the companies had to report their previous year’s audited emissions by the end of March, which freed up the summer months for sailing. This

continued for many years, although with a reducing number of audits, until I finally retired in 2017.

The number of people working for Sohn Associates gradually fell away as time went by and at the end of 2010, there were only four consultants regularly working and I was appointed a Director. Most of my work was then channelled through Sohn in order to maximise the order book and add credibility for any potential clients. During this period, we carried out a major investigation into the electricity losses of the UK Distribution Network in collaboration with the Electrical Engineering department of Imperial College who could carry out computer modelling of the networks. This found that, compared with other EU countries, the UK was losing at least 1% more of the generated electricity, equivalent to the output from a new nuclear power station. This study was the subject of an article published in *Energy World*. The energy regulator, Ofgem, has now made the reduction of losses one of the distribution companies’ objectives in their annual performance reviews.

### Retirement beckons

Having moved back to Poole with my yacht in 2009 (the first time I paid for my own removals!), from 2012 I gradually reduced my working days to spend more time with family and my boat. I resigned my Sohn directorship in 2016 and my final piece of work was completed in 2017, although it took until 2018 to get the invoice paid, transfer the remaining cash to our personal accounts then wind up the Energyfactor company.

So what do I do with my time now? Well, I was a Trustee for the local Citizens Advice Bureau for several years, including during the Covid lockdowns, but have recently resigned as they are now in a strong financial and operational position. My wife and I go for local walks, visit gardens and sometimes look after our grandchildren at holiday times, although she has recently had some significant health problems. I have also been doing Race Officer duties for the Poole Yacht Club weekend races and I sail my boat at least once a week in the summer but I don’t play golf!

### The moral of the story

- Whatever career you follow, make sure that you enjoy it.
- You don’t need to be the boss to have an impact and become respected.
- Maintain a flexible attitude toward subject, company and place.
- Never stop learning, an enquiring mind is a happy one.
- Take advantage of opportunities when they appear, do your own SWOT analysis.
- Everyone has transferable skills, it is just a matter of identifying where they fit.

**If you want to share your life experiences, career ups and downs, or hard-learned lessons that may help other alumni – please get in touch with the Editor. See page 2 for contact details.**

## Alumni Awards 2024

Now in its fifth year, the Alumni Awards programme recognises and celebrates outstanding achievements of Imperial graduates and their contributions to science, engineering, medicine, business and society across three award categories.

**Distinguished Alumni Award**

Honours alumni who have demonstrated sustained excellence in their personal and professional achievements, are leaders in their field, or have made a substantial impact on society.

**Professor David Larbalestier** (Metallurgy 1965, PhD 1970) is one of the world leaders in superconducting materials and their translation into magnets. More than 90% of all magnets, including those for MRI medical scanners and huge particle accelerators, were made with conductors optimised according to processes developed by him and his team.

“Of course, I would like to be remembered for having a positive impact as a scientist. But I’ve had the privilege to work with lots of young students who had the ambition to be at the forefront of the field. The impact that so many of them have made ultimately is really most important to me.”

**Professor Monique Frize** (MPhil Electrical Engineering 1970) is an engineer, a visionary, and a pioneer. For over five decades she has pushed the boundaries of the seemingly impossible. She has opened doors for others where they were firmly shut before. Her impact on the world of clinical engineering continues to reverberate around the world today.

“In one way, I was a builder. I was tough and wouldn’t accept anything less than the best for my hospitals. That drove me. There were a lot of battles.”

**Alumni Entrepreneur Award**

Recognises innovative & creative founders who can demonstrate commercial success, growth & impact.

**Ron Atzmon** (MBA 2002) is an entrepreneur who doesn’t take the middle path and fiercely challenges the status quo. From humble beginnings in tech and finance, Ron founded AUI0TIX, an identity verification technology solution that is used by companies such as Google, Paypal and Uber, with a value of over \$300 million as of 2019.

“You need to be a dreamer. Optimistic. You get hammered to the floor, but you have to think ‘tomorrow’s another day’ – get up and fight back.”

Courageous. Innovative. Collaborative. **Dr Jean Marc Feghali** (MEng Civil Engineering 2018, PhD 2022) and **Gökhan Meriçliler** (MSc Business Analytics 2022) embody these three principles fully. They are the creators of *WeWalk*, the smart cane manufacturer for visually impaired people, successfully showing how technological innovation can be harnessed to transform people’s lives for the better.

“WeWalk is more than a product; it’s a shared vision for a more inclusive world. By blending rigorous research with real-world needs, we have developed a smart cane that helps visually impaired people actively participate in society. Thousands of *WeWalk* users already express how our smart cane has enabled them to live fuller lives.”

**Emerging Alumni Leader Award**

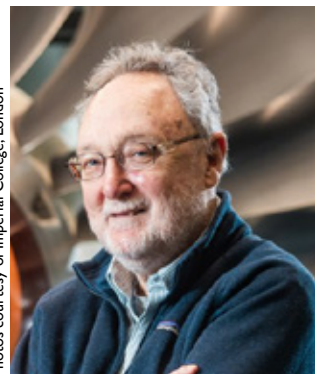
Six alumni have been recognised with this award which celebrates graduates from the last 15 years who are inspiring role models, mentors or champions for equality and are making an impact on society.

**Alex Tourre** (MSc Computing 2009) is on a mission to light up the homes and businesses of Western Africa. By listening closely to communities and offering an affordable, sustainable commercial proposition, *Easy Solar* is providing power to 200k homes across Sierra Leone to transform the lives of millions – and, already, it’s diversifying and expanding into neighbouring countries.

**Dr Giuliana Di Martino** (PhD Physics 2014) is a renowned expert in low-power, sustainable electronic devices. She has won awards, been recognised with fellowships, received prestigious grants, and become the head of a research group at a remarkably young age. All while balancing her academic responsibilities with raising her two young children.

**Lola Aworanti-Ekugo** (MBA 2019) is a digital and innovation expert with over 17 years of experience. Her focus is on steering organisations towards an innovative and sustainable future using technology within the private and public sector. Through advocacy and mentorship, Lola is also determined to boost diversity within technology and support upcoming female leaders.

**Miroslav Gasperek** (MEng Biomedical Engineering 2019) is excited by the potential of synthetic biology and bioengineering to create treatments that can help millions of people. It’s been



Professor David Larbalestier



Ron Atzmon



Alex Tourre



Lola Aworanti-Ekugo



Professor Phebe Vyanos

a driving factor in establishing *Sensible Biotechnologies*, a company developing novel mRNA production technology with the potential to bring mRNA medicines to tackle a whole palette of ailments – from rare diseases to chronic illnesses.

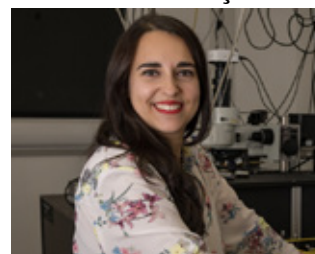
**Professor Phebe Vyanos** (MEng Electrical & Electronic Engineering 2007, PhD Computing 2012) is motivated by a strong desire to positively impact society by helping marginalised communities and by training the next generation of professionals and researchers. An expert in optimisation, she uses her skills to design trustworthy AI



Professor Monique Frize



Dr Jean Marc Feghali &amp; Gökhan Meriçliler



Dr Giuliana Di Martino



Miroslav Gasperek



Dr Wareed Alenaini

suitable to deploy in high-stakes settings and to help public service organisations make more effective and equitable decisions.

Over 50% of us will develop a chronic disease by the age of 45. **Dr Wareed Alenaini** (MRes Chemistry 2014) is on a mission to change this statistic with AI biotechnology that detects chronic conditions related to ageing and frailty such as diseases of fatty deposits affecting vital organs, to prolong the duration of healthy performance for these vital organs as long as humanly possible.

<https://bit.ly/IE40-AlumAwards>

# Imperial College is more than a place to study...

Rob and I were both living at Southwell house on Evelyn Gardens (SW7) in our first year at Imperial. We even lived across the corridor from each other, yet we didn't meet until we both sat opposite each other at the Christmas Party hosted by our Warden. I said to him, "Oh, your room is opposite to mine". He said, "Yes, I've only ever seen you running up to your room and closing the door really loudly!" I still remember this hilarious first conversation all these years later.

After graduation, Rob was working as a management trainee with Draeger in Lubeck, Germany, while I was undertaking a graduate engineering training scheme with Atkins in Warrington, UK. We maintained a long-distance relationship for 3 years!

We married in August 1994, in Poole, Dorset, in front of our families and a number of Alumni from IC.

Not long after, an opportunity came for Rob to work in Pennsylvania USA with North America Draeger. We packed up our two-bedroom flat and embarked on a life-changing journey together. We had three children, two girls and a boy, who were born in America. Then another assignment for Rob in the UK, so, with my son being only three months old, we packed our bags again to relocate to Shillington, in Hertfordshire, UK. I thought that would be the end of our traveling! To our surprise, six years later, opportunity knocked again; Rob was asked to head up Draeger Canada. I applied my project management skills and managed to move the family across the pond again, settling in Oakville, Ontario.

This year will be our 30<sup>th</sup> Wedding Anniversary, and I'd love to thank Imperial College for bringing us together. While still living in Hong Kong as a secondary school student, it was my dream to study at IC because of its prestige. Meeting an Englishman (and marrying one!) and moving around the world was never my plan, but is testament to the fact that life can never fully be project-managed.

I am confident of, and looking forward to, more exciting journeys ahead for us.



**Mary Clark (nee Kwok) MSc & BEng Civil Engineering (1986-1990) and Robert Clark MEng Electrical & Electronic Engineering (1986-1990)**



## In 2007, Colleen Shilstone Richardson (Elec Eng, 1945-46) shared the story of her family's connection with Imperial for almost a Century

“ 1911 – 1955 encompasses my family's attendance at this College as students. Writing these flashbacks of memories, I realise that with all my family involvement, we have almost spanned the centenary years, one way or another, of Imperial College.

My father, Frank and his brother, Arthur Bernard (Barney) were both at Imperial College and studied engineering at the Guilds. My father (1892 – 1955) was at the City and Guilds in 1911, in his second year, when Sir John Wolfe Barry became President of the Old Centralians in 1912. Sir John was the first Chairman of a Delegacy representing Imperial College, the City and Guilds Institute and the Goldsmiths' Company.

Barney took his degree in the Guilds after the Great War, as he joined up as a pilot in the Royal Flying Corp directly he was old enough.

I entered the City and Guilds College in 1945. My father took me to see the Dean, Professor Fortescue, during the summer and, providing I passed the entrance examination, I was to be accepted.

I became friendly with many of the Civil Engineering students, although I was in the Electrical Engineering Department. Several of them were ex-servicemen from the air force and the army. One was Alan Cotton Meigh (Civil Engineering 1946-49, MSc 1950). He did research under Professor Pippard in Foundation Engineering and ended up working for Ove Arup and Partners. There was also someone called 'Rusty'. I think his name was Walter Redlich (Civil engineering 1945-47, DIC 1949). He was a great social asset to the Guilds. In my year also was Eric Ash (Electrical Engineering 1945-48, PhD 1952), who later became Rector of Imperial College in 1985 until 1993.

Someone who was very kind to me was Professor Hyman Levy (1889-1975), a really human mathematician. In those days we had to go across Exhibition Road for his lectures, which he delivered with patience and great clarity. I know, though, that he did not have any great faith in the mathematical ability of either the RSM or the City and Guilds College students.

One of the highlights was the Imperial College Ball held in the Albert Hall in October 1945. George VI and Queen Elizabeth were the chief guests and although one of the reasons was to raise funds for the development of Imperial College, it was also the



Centenary year for the Royal College of Science. The Guilds, too, were involved in the celebrations as it was sixty years since its first full-time courses, in February 1885, were started in Exhibition Road. I remember the Ball very well, as not only was it great fun, but my partner and I were able to dance very near to the King and Queen.

The President of the City & Guilds at that time was a very energetic Colin Harris (Civil Engineering 1942-45). I think we met at the Dramatic Society where we put on *The Alchemist*.

The following year, Boanerges (Sons of Thunder - the surname of James and John the sons of Zebedee) was brought back into action. It had been the motorised mascot and the pride and joy of the City and Guilds students since 1934. It was a 1902 James and Browne car and took part regularly in the London to Brighton run. During the war it had been kept safely in Hertfordshire at the home of Joe Pidgeon (Mechanical Engineering 1934-40, 46-47) who was Bo's first driver.

Earlier that year I had splashed out and bought a 1927 Armstrong Siddeley Tourer 15 HP for £25 from a farmer in Reigate. I was thrilled to have a car of my own, and was happy to be challenged in that it had a gate change gearbox, which I managed very well. One day I drove

this enormous machine to South Kensington and parked it in Imperial College Road, hoping to astonish all my student buddies. Imagine my chagrin to see an excited crowd round the C&G mascot, BO, that was making its first appearance after six long years.

Nobody even looked at MY car.

My husband, Harry Richardson (Physics 1944-46, DIC Aeronautics 1947), was also at Imperial College. One of his very close friends was a Spaniard called Rafael Armenteros (Physics 1943-46), who sadly died in 2004. We thought him very glamorous as he had fought in the Spanish war but he also went on to become well-known for some of CERN's most famous experiments – the bubble chamber experiments. Another of his friends was Harry Stopes-Roe (Physics 1941-44). His mother was the awesome pioneer of birth control – Marie Stopes. Susie Korn (Physics 1944-49) was also in the Physics department at that time. She was lucky enough to have a room in the residence at Beit Quad adjacent to the Union and she gave marvellous parties.

Harry and I were already married by the time I entered Imperial College and for the year we overlapped, we decided to say we were cousins. We did not want people to think us 'odd' to be married students. Harry went on to become a lecturer

at University College (UCL) and was one of Professor Sir Harrie Massey's research team in the Department of Mathematics. He became friendly there with Robert Boyd (Electrical Engineering 1941-43) also from Imperial College. R.L.F. Boyd was to become director of Mullard Space Science Laboratory that opened on 3 May 1967. Harry went on to join the Atomic Energy Authority where he was in the forefront of nuclear power station design.

My brother, Bruce Shilstone (Electrical Engineering 1954-55), was also at the Guilds in 1954. He was in the Department of Electrical Engineering along with Bruce Sayers (Electrical Engineering 1957), John Sheldon (Electrical Engineering 1954-57, DIC 1959) and Brian Dean (Electrical Engineering 1954-57, DIC 1958).

For my part, having forgotten all about this illustrious temple of learning, I was tempted back in 1993 by various interesting leaflets and a chance meeting with a Royal School of Mines Association member, Frank Cassidy (Mining Engineering 1928-31, Mining Geology 1932). I joined the City and Guilds College Association and, a couple of years later, the towering Rod Rhys Jones (Civil Engineering 1961-64) threw his black cloak over me and persuaded me to become editor of the CGCA journal – Imperial College Engineer.

This was previously known as The Central and came into being in November 1903 when the engineers and science students were still sited at Finsbury Technical College. This was where the London Livery Companies first set up the Central Institution, whilst negotiations were going on at South Kensington to found Imperial College.

I enjoyed editing the journal and in so doing I was privileged to meet a great number of clever and dedicated people. During those eight years I was helped enormously by the sterling efforts of Adrian Winchester.

When the three original colleges were broken up into faculties, I approached John Bramley (Mineral Technology 1953-56, PhD 1959). He was the Hon. Secretary of the RSMA and also ran their four-page newsletter. "Shall we combine our publications?" I asked him. He was very interested and we set up a meeting with officers of the two Associations. The deed was done. We decided to call the new magazine Imperial Engineer and its first issue was in the Autumn of 2004. ” ”

*Of Colleen's death just eight days short of her 100th birthday, her daughter, Catherine, commented: "She was late for every other appointment in life but somehow managed to depart early for her final journey!"*



## A delightful optimist who welcomed adventures



COLLEEN DOROTHY SHILSTONE RICHARDSON (Elec Eng 1945-46)

Colleen Richardson, who came to City & Guilds College to study Electrical Engineering in 1945, and who died recently at the advanced age of 99, had been a much valued member of CGCA over the past twenty years, particularly as she edited the 'Imperial College Engineer' for twelve issues between 1997 and 2004. Colleen was in the same 1945 class as Eric Ash (Elec Eng 1945-48, PhD 1952), who went on to become Rector of Imperial College from 1985 until 1993, and she counted him as a life-long friend.

But Colleen had enjoyed a much longer connection with the college, as her father, uncle and brother had all studied engineering at City & Guilds College. Her father, Frank Walter Shilstone, studied Civil Engineering from 1911 to 1914, after which he served in the First World War, becoming an officer in the Royal Artillery, and being 'Mentioned in Dispatches' in 1917, but also being seriously injured and losing one eye. After the war he joined Kennedy and Donkin Consulting Engineers,



based in Victoria Street, and was responsible for many schemes including designing and building a power station for Michael Nairn's linoleum factory in Kirkcaldy. Later he had the job of linking together all the power stations in the South West of the country for the nascent 'National Grid'.

Meanwhile her uncle Barney – Arthur Bernard Shilstone – commenced studies in Civil Engineering at 'Guilds' in 1914, but then – once he was old enough – enrolled as a pilot in the Royal Flying Corps for the remainder of WW1, returning in 1919 and graduating in 1922. And – some nine years after Colleen came to the college in 1945 – her brother, Bruce Miles Shilstone, followed her in 1954, also to study Electrical Engineering.

Before arriving at South Kensington, aged 21, Colleen had become married to another Imperial student, Harry Richardson (Physics 1944-46; Aeronautics DIC, 1946-47), and she revealed in 2007 that they decided to tell fellow-students that they were cousins – in order to avoid being thought 'odd' to be married students! Harry went on to be a lecturer at UCL, before moving into the Atomic Energy Authority in Dorset, and subsequently working for Shell International.

Whilst at college, Colleen took a very active role in sport and in student activities – something that is clear from the wide range of fellow students she would often reminisce about. She was in the Hockey Club, where she met others who either were or later became members of the 'Old Centralians', including Peter Justesen (Chem Eng 1943-46, and Honorary Secretary of CGCA from 1993-2003), John Le Sueur (Civil Eng 1945-47), John Holloway (Chem Eng 1944-47), Alan Isaacs (Chem Eng 1942-50), and Anthony Harman (Chem Eng 1943-49). Colleen also related that she was in the Dramatic Society, where "We put on The

Alchemist to a supportive audience of friends and relatives. I think I was the Dol Common character".

It seems likely that her enthusiastic involvement in 'extra-curricular' activities had a negative effect on studying, as Colleen found herself needing to consider a resit of her first year's exams, and at that time one was required to 'come back in two years' time' – not least as there were many keen men waiting to fill places after returning from WW2!

But by the time her two years were up, Colleen had changed direction, and had become a student at Regent Street Polytechnic, receiving a City & Guilds Diploma in Photography. Looking back in 2013 she said, "They had every camera you could want and the diploma was very good!"

With financial help from her father "I rented a studio and lockup shop in Streatham. I only had a bicycle, so when I did weddings I would cycle there, and then cycle back to the wedding with the proofs". Later on, Colleen became a rep for Robinsons of Chesterfield, who made bandages and supplied pharmacists all over the country. Colleen used to travel over a huge area, living in Beckenham in Kent. She decided to join the Bromley Commercial Travellers Association, and was the only woman member. When asked about this, Colleen observed that women were not usually employed in this field but "when it came to women's personal hygiene products, they had little choice".

After her husband Harry secured a job with the United Kingdom Atomic Energy Authority, Colleen found herself living in Dorchester and at something of a loose end. She joined the local amateur dramatic society where she met other amateur actors. Together with three of these new friends, she decided to set up a 'theatre-in-the-round' in the town. Before long they had decided to find a suitable building, and open it as a restaurant and nightclub. Colleen found funding contributions from local farmers, a building was found,

and, after modifications and engaging a manager, kitchen staff and cabaret girls, this was opened to the public. Colleen was responsible for booking cabaret acts, and for obtaining regular changes of outfit for the girls, which entailed fortnightly trips to London's West End. All went well for two years, until the manager was found to have had his 'hand in the till'. The business was closed and wound up over the ensuing year, but scandal was avoided and the building was then converted into a successful 'hangout' for young people.

In later life, Colleen moved to Hemel Hempstead in Hertfordshire, and a chance meeting in 1993 with RSMA member Frank Cassidy (Mining Eng. 1928-31, Mining Geol. 1932) made her decide to join CGCA and become re-connected. Within a few years, she was invited to become editor of CGCA's member magazine 'Imperial College Engineer', and threw herself into the task, ably assisted by Adrian Winchester of the then-styled 'Office of Alumni & Development', and acted in that role for seven years – and twelve issues – until 2004. It was in fact Colleen who opened discussions with John Bramley (Mineral Technology 1953-56, PhD 1959), Honorary Secretary of RSMA and editor of its newsletter, with a view to combining the two publications, these talks ultimately resulting in the birth of 'Imperial ENGINEER' in Autumn 2004. When the new magazine was in production, Colleen remained on the Editorial Board for another eleven years until finally standing down in 2015.

Towards the end of 2016 Colleen was having problems with memory, and at the end of that year she was helped by her family to move to a care home nearby. Whilst she was very happy there, and was closely supported by her daughter Catherine and son Tim, she continued to decline, and died on the 9th February 2024, just eight days short of her 100th birthday.

Colleen Dorothy Shilstone Richardson, born 17 February 1924, died 9th February 2024.

Chris Lumb and Alice Spain



## A long association with both Imperial and CGLI



Dr DAVID WILBRAHAM, FCGI (Chem Eng 1957-60, '60-63) A Life Member of CGCA, David was born on 29 January 1939, in Stockton-on-Tees, the eldest of three children. He did well at school whilst enjoying a family life-style that included holidays at seaside towns on the North Yorkshire coast. He came to City & Guilds College in 1957, graduating in 1960 with First Class Honours in Chemical

Engineering. He opted to continue his studies for a further three years, gaining his PhD in 1963. David played a full part in sporting and student affairs - he ran, played rugby and tennis, and served as a deputy president of Imperial College Union. Whilst at college, he met Peta, a teacher. They married at a ceremony in the Chapel of the Royal Hospital, Chelsea, before he had completed his studies.

David took up work with the General Chemicals (later Mond) Division of Imperial Chemical Industries (ICI) at Runcorn in Cheshire, where for seven years he held jobs in plant design, R & D, and marketing, before moving into general management. During this time, David and Peta brought their three children – Emma, Jonathan and Simon – into the world.

In 1970, a work opportunity came up in ICI's American business, and the family relocated to Connecticut, sailing across the Atlantic and arriving in the Hudson River at the same time as the 'Twin Towers' were being completed. After two interesting years in America it was back to ICI in Cheshire but, during the 1980s, when the children were heading for university, David again took up an opportunity to work in America, culminating in his becoming Vice President of ICI Specialty Chemicals and MD of Chemical Products there.

In the early 1990s David left ICI and moved to Harpenden in Hertfordshire, spending the remainder of his career firstly as Chief Operating Officer with Laporte, until 1996, and then as Chairman of Hickson International until retiring in 1999. After giving up full-time work, he nevertheless managed to keep busy by taking up

non-executive directorships at a number of companies, including St Ives, Akers, Intelligent Engineering, Hydro Venturi and Delta Dot.

David always maintained a strong interest in education and training, which he was able to pursue in retirement, forming a long association with both Imperial College and with the City & Guilds of London Institute (CGLI). He was a Governor and Audit Committee member at Imperial from 2001-07, and in addition to this he became a Trustee of CGLI, serving as their Treasurer from 2006-2015.

In retirement, David also indulged in his great love of opera and classical music, attending performances in Covent Garden and the Barbican. He also enjoyed hearing talks at the Athenaeum Club, as well as spending time in his garden.

An overriding source of enjoyment for David and Peta in retirement lay in taking their grandchildren to London whenever they could.

In 2021 David became unwell, suffering several strokes, and was cared for at home by the family, but in November 2022 he suffered another major stroke which led to his death. Happily, Peta and his children were with him at the end.

David died on 20 November 2022, aged 83.

## An enduring interest in the railways

GEOFFREY NIGEL KING (Civil Eng 1958-61)

Nigel was born on 1 February, 1940 in the Norfolk village of Shotesham All Saints.

Entering Norwich School in 1948 he excelled academically. However, in 1954 to 1955, he had to miss schooling after contracting Tuberculosis, and was unable to sit his GCE O-Level examinations. Despite this, he was allowed, on his return, to go straight on to A-Level studies in Maths, Physics and Chemistry, achieving good results and being awarded a scholarship to take up a place at City & Guilds College to study Civil Engineering.

On graduation in 1961, with a good honours degree, he joined British Railways at Paddington as a graduate trainee but, within a few years, he realized that the imminent 'Beeching Report' on British Rail's overall operations might have an unwelcome impact on his career, so in 1964 he left British Railways and joined the Greater London Council (GLC) as a Traffic Engineer, having first completed a post graduate course at Newcastle University.

Nigel had met Sandra, his wife to

be, in 1963 when she was working at British Railways Civil Engineers' offices at Paddington. They were married in 1966 and set up home in Walton-on-Thames.

The GLC was disbanded by the Local Government Act of 1985 so, in 1986, Nigel moved on to the London Borough of Hillingdon and was involved with major improvements to the A40 trunk road in West London. During this time, Nigel and Sandra moved to the small village of Cadmore End in Buckinghamshire.

By 1990, Nigel had moved again, to the Royal Borough of Kensington & Chelsea as Assistant Director for Traffic Management, and from there he progressed into Transport for London (TfL) where, as Head of Bus Priority & Traffic, he became associated with Bus Priority schemes such as the 'Red Routes', and the introduction of articulated buses. Nigel concluded his career by working as a consultant with Faber Maunsell in traffic management.

His professional association with the rail industry was short lived, but Nigel had been a keen member of Imperial College Railway Society, serving as its Chairman in 1960-

61, and he kept up this interest throughout his life, including being an honorary member of the College Society. In later years, he spent many happy hours working with students who were spending long weekends helping to lay track for the Welsh Highland Railway in North Wales. Nigel was also a Life Member of CGCA.

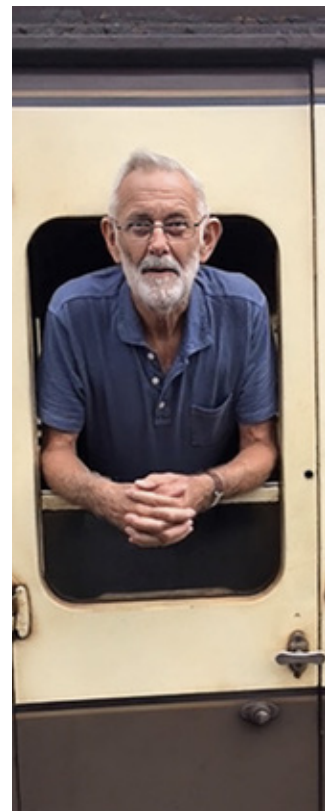
After living in Cadmore End for 37 years, Nigel and Sandra moved several times after Nigel's retirement, eventually settling in Lane End.

Sadly, Nigel was diagnosed with a particularly harsh variety of Parkinson's Disease at around the time of the Covid pandemic, such that his last few years were increasingly difficult.

Nigel died on 15 December, 2023, aged 83, after spending a short time in hospital and in a care home.

Nigel and Sandra had been together for 58 years, and their two daughters, Charlotte and Susannah, with sons-in-law Simon and Jon, and grandchildren Will, Imogen, Esme and Isadora, have supported Sandra in mourning his death.

*With thanks to  
John F Sharp, ACGI,  
(Mech Eng 1958-61)*



**Nigel in a BR Mark 1 railway coach which is sporting the now rare, but correct for the 1960s, BR Western Region colour scheme then used for selected express trains.**

## Engineer, inventor, chief executive and life-long learner



RENE LUDWIG GUERSTER  
(Mech Eng 1957-60)

It is with great sadness and reflection that his family announces the passing of Rene L. Guerster, aged 84, on March 9, 2023, in Winter Park, FL.

While it's no surprise his preference was that no memorial service be held, we know his family and friends will each take their own time to reflect on his positive impact on their lives.

The immediate family is planning a walk on the Ocean City, NJ boardwalk this summer and will overindulge in fudge and saltwater taffy in his honour.

A loving and supportive husband, father, grandfather and great-grandfather, Rene was always the cheerleader for everyone's success. Whether it was a FaceTime, email, text or impromptu phone call, he made sure to stay connected with the whole family's activities and provide encouraging, bold and

entertaining commentary in any situation.

Born in Basel, Switzerland on October 1, 1938, Rene came at a young age as an immigrant to the United States with his parents, escaping Nazi occupied Europe.

His family moved frequently, his father teaching at various US universities and his mother continuing her opera career with occasional performances. While attending a dozen different primary and secondary schools, Rene was forever the new kid in his early school years. It was finally in 9<sup>th</sup> grade that he found his home at The Westtown School, a Quaker boarding school in Pennsylvania, where he graduated high school and later became an avid supporter, funding faculty sabbaticals, naming his first dorm and establishing an endowment for immigrant students with similar situations to his own.

Post Westtown, Rene returned

to Europe to pursue a mechanical engineering degree at Imperial College in London. It was here that he met his lifelong partner, Miriam. He graduated in 1960 and they married and moved to Vineland, NJ, starting their family and Rene's career at Armstrong Cork in Millville, NJ.

After their daughter Cathy and son Jon came along, Rene and Miriam moved to the Philadelphia suburbs.

Rene entered the world of space technology, first joining General Electric's Space Systems division and later moving to the Ametek Corporation, another space systems supplier.

He completed his Master's in Engineering, specializing in celestial mechanics, from the University of Pennsylvania and was granted the first of eleven patents he would receive through his career.

In 1970, Rene joined the West Company, a publicly traded pharmaceutical packaging company, as Director of Engineering. Over the next fifteen years, he moved up through senior management and was named CEO in 1985.

During his time with West, Rene also completed his third degree, an MBA from Temple University.

A life-long learner, in his seventies Rene decided to pursue a Masters in Cognitive Science at the University of Central Florida (UCF), graduating at 75 years old.

At UCF, he engineered a safer car steering system design, presenting his research at the annual human factors conference in 2013, with his final patent being issued in 2016.

A fan of jazz music, Rene also fell in love with UCF's jazz program, taking additional classes in music and regularly attending their on-campus jazz concerts.

As a husband and parent, he found hobbies and sports that everyone could enjoy. He captained annual family charter sail and power boat trips in the Chesapeake Bay and the Virgin Islands for many years. Invariably there would be some moments of excitement on those trips, as something would go wrong, but with Rene at the helm it would always work out.

As a car enthusiast, Rene first restored older Porsches, then a 1918 Model T, and finally a 1944 Willys Jeep.

He also loved driving the 1984 Porsche that he and Miriam picked up in Germany and brought back to the US. He did have issues with speeding, and made court appearances, visited police stations or had his driver's license revoked in several states.

In later years, Rene took up woodworking, making exquisitely crafted and engraved jewellery boxes for each family member, and a rocking horse for his great-granddaughter.

At his passing, Rene is survived by Miriam Guerster, 87, his wife of sixty-two years.

His daughter Cathy and son-in-law Sims live in Maitland, FL, their older son Colin, wife Mary Catherine and great-granddaughter Mary Sims live in Homewood, AL and their younger son Chris and wife Kadie live in Atlanta, GA. His son Jon and wife Kim live in Beverly, MA, with college-aged son Bey and daughters Mason and Brooke.

In addition to Cath and Jon's families, Rene is survived by his sister-in-law Margaret Harthen, of Chingford, London.

For those who wish to honour Rene's memory, donations in his name can be made to The Westtown School's annual fund.

For the scotch drinkers, we suggest a toast to his memory with a single malt and just a few rocks, Macallan being a particularly appropriate choice.



### IN BRIEF

GREGORY ANDREW LILLEKAR  
(Mech Eng 1962-65)

Born on 4 April, 1944, Gregory was a Life Member of CGCA.

Gregory died last year, at the age of 79.

