

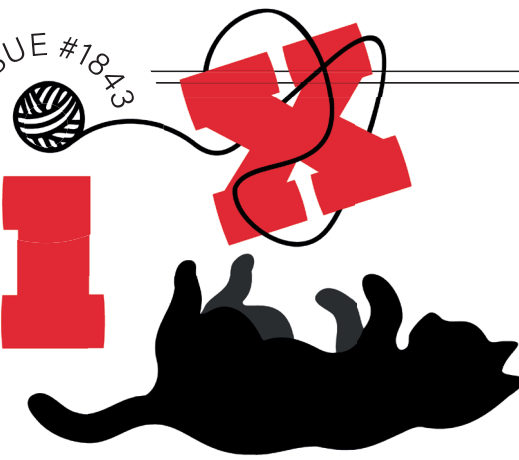
# 's new logo

→ Page 4: Petition calling on College to replace new logo exceeds 2,600 signatures.

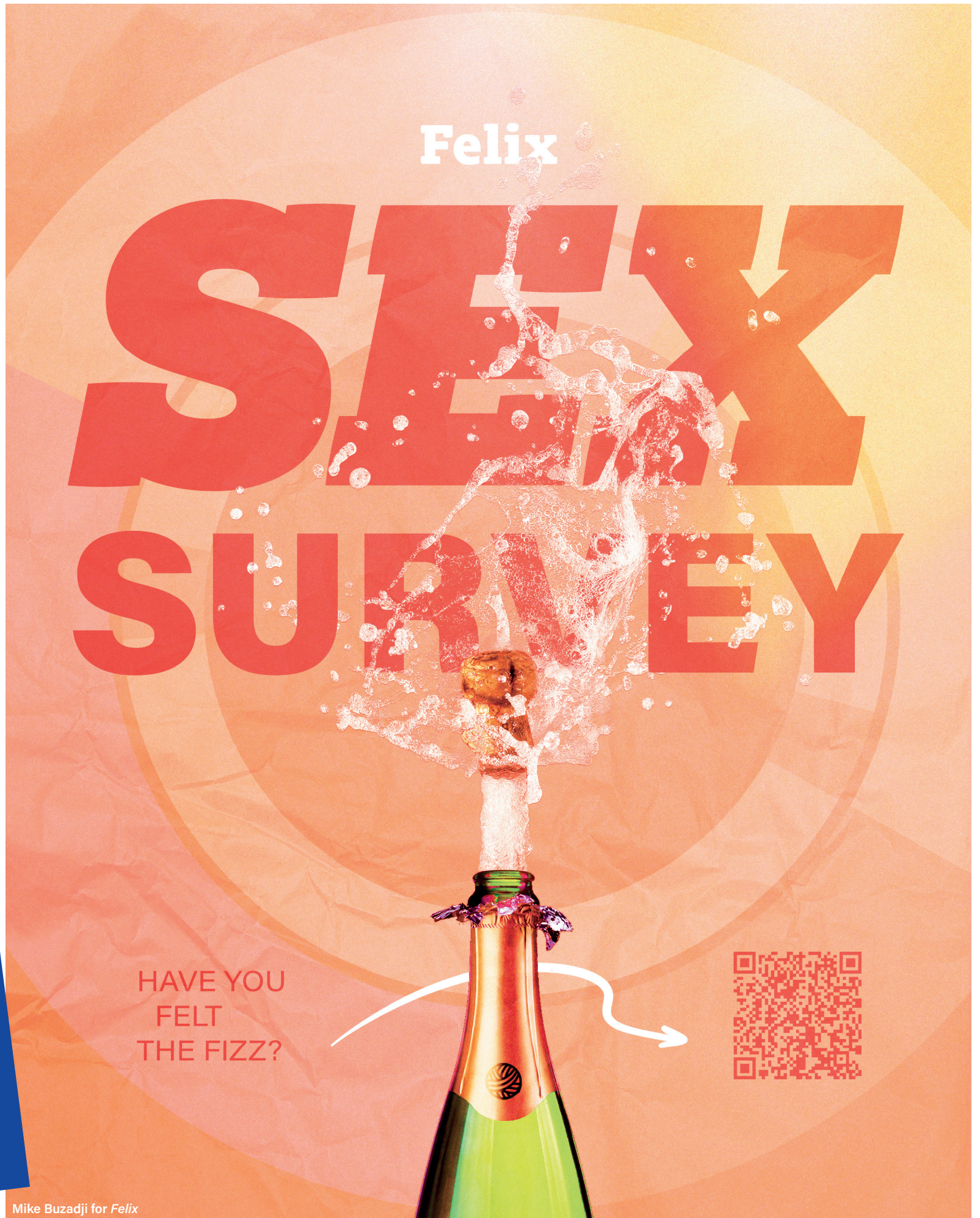
→ Page 5: President Hugh Brady on strengthening Imperial's brand.

# IMPERIAL

# Felix



First published in 1949, *Felix* is released weekly during term time and is distributed around Imperial's London campuses. All students, staff, and alumni are welcome to contribute to the paper.



Mike Buzadji for Felix

## DECLARATION

At *Felix*, we believe that it is always in the interest of the students to be in the know. Transparency in the workings of the College and the work of your student representatives is key. Therefore I, the *Felix* Editor, on behalf of the team promise that:

**We will, to the best of our ability, tell you the whole truth and nothing but the truth.**

**We will keep your confidence and will only publish something you say to us if you have explicitly said that we can.**

**We will work to expose unfairness and discrimination in all forms that it takes at the College.**

**We will treat fairly any article sent to us, regardless of point of view, and do our best to work with you to prepare it for publication.**

Signed by:  
**JAMIE JOHN**  
Editor-in-Chief

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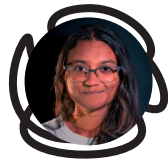
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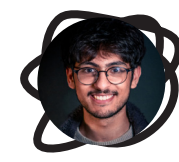
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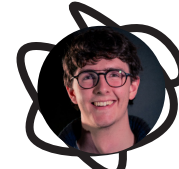
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Selina Ye

## EDITORIAL

# Sex, logos, and Sonic

The *Felix* Sex Survey is back for 2024, after a three-year hiatus. The newer College members among you might not recall, but the Sex Survey was a highlight of the academic year for many, and attracted an audience well beyond the usual *Felix* readership.

The questions are intrinsically personal, but lead to a wealth of fascinating insights on the sex lives of Imperial students. We do not store any identifying personal details beyond what you enter into the questionnaire, and will turn the data into charts and data graphics for you to pore over.

### The new logo: what Imperial can learn from *Sonic the Hedgehog*

The view from within the *Felix* office is much the same as the wider College when it comes to Imperial's new logo. The vast majority hate it, a few think it is not as bad as the uproar would suggest, and the remainder are ambivalent.

Nevertheless, it is hard to ignore a nagging sense of déjà vu in the way this debacle has unfolded. This is now the fourth time in just over two years that

does – want to gather student opinion, but it prioritised the wrong platforms to reach them.

Perhaps it speaks to a generational divide that email, newsletters, and a webpage were the main ways in which Imperial communicated the changes to students.

Imperial's Instagram page has 144,000 followers, and has recently undergone a transformation (shout-out to former *Felix* Editor Philippa Skett, who now manages the page!).

The Instagram page has garnered attention for its light-hearted approach to communications and the way in which it has captivated what, to be entirely fair, can be a very cynical student body.

Instagram is an inherently visual medium and would have been far better suited to promoting the brand project, and soliciting feedback.

Yes, there is a greater risk of backlash when something is posted to social media. But it is better to tease new ideas there at an earlier stage, when designs can be revised without substantial cost, than to leave it to students to post memes about once it's too late to change.

This is exactly what Sega did in 2020. It teased the Sonic character model for the eponymous *Sonic the Hedgehog* movie, and found that it was met with ridicule.

After revisions to the model, the movie became the highest-grossing video game movie of all time (it has since been surpassed).



pikawil100, Flickr, CC-BY-SA-2.0



the College has introduced a visual change to complaints of insufficient consultation.

Admittedly, this time, unlike the introduction of the ALERT statue – when student complaints made international news – or the two attempts to put a mural at the entrance to Calendar Road, it has actually consulted students about the logo changes.

But the bevy of memes that the logo has spawned, and the over 2,000 people who have signed a petition against it, suggest either that the level of consultation not sufficiently extensive, or that the wider College population was not made suitably aware of the opportunities they had to feed back on the design.

Talking to those involved in the College's brand project, it seems that the Imperial genuinely did – and still

The last survey, published in 2020, received just over 2,000 responses and led to the publication of a brilliant piece of data journalism. You can read the article by scanning the QR code below.

We'd like to build on the work of our predecessors this year, and want to start by matching or exceeding the number of responses received in 2020. We're currently at 1,600 responses for this year, but many departments are underrepresented – so please complete the survey (scan front-page QR code) and share it with your friends!

## NEWS

# Calls for new Imperial logo to be replaced as petition exceeds 2,600 signatures

Editor-in-Chief  
JAMIE JOHN

Imperial has found itself in the spotlight after more than 2,600 people signed a petition calling on the university to replace its new logo, unveiled around campus this week.

When asked whether it would acquiesce to the demands, a spokesperson for the Imperial brand project said: “The team will take any opportunity to hear what people think, to listen, and to answer questions.”

The petition, which was created on Sunday, says that ‘many (if not most) students dislike the new logo; the new colour and font look almost cartoonish and it is not a good representation of the College’.

Its creator set an initial goal of 350 signatures – to match the number of responses Imperial received in its own surveys on the new branding – but surpassed that target at noon on Monday.

Imperial was “absolutely determined to develop a brand identity that serves the whole community,” said the brand project spokesperson.

The College provided project updates in a video, on its website, and its monthly ‘Inside Imperial’ newsletter. In June 2023, it sent an email to all students inviting them to complete a survey and attend focus groups.

In addition, the Provost and the President referenced the project in their emails to students at the beginning and end of term.

Those who viewed the video, the



Students have taken issue with the new College logo and colour, calling the font ‘cartoonish’. Walt Gao for Felix

website, or attended focus groups had an opportunity to see the new branding, but none of the emails the College sent out contained images of the logo.

Many students took to social media to express their shock upon seeing new signage for the first time on campus this week.

Meme accounts on Instagram have revelled in the furore, producing satirical posts mocking the redesign and highlighting issues they feel are more worthy of funding, such as renovations to student accommodation.

“I wasn’t sure if it was real at first,” says Anaya Jaffer, the second-year Mechanical Engineering student who created the petition after seeing the new logo in Instagram memes.

“I was speaking to more and more people about it and realised that everyone shared this strong dislike. When I saw Imperial was already starting to put it up, I realised it’s actually happening – if we don’t want it to happen, we’d better do something now.

“On the website, it said they had 350 survey responses and over 1,600 video views, which really isn’t that much considering there are around 30,000 staff and students here.”

Some students have taken issue with the fact that the new logo only features the word ‘Imperial’, with the words ‘College London’ removed.

In 2020, amid increased scrutiny of its links to the British Empire, Imperial removed its motto (‘Scientific knowledge, the crowning glory and the safeguard of the empire’) from the College crest.

“Remember how in 2020 they were shitting bricks about ‘the history of imperialism’, so much so they dropped the motto?” said one former student. “But in a rebrand they’ve decided to drop all the words apart from ‘Imperial’.”

Others say the logo is too corporate for a university. “Who needs Imperial College London when you can have Imperial Logistics, Imperial Manufacturing and Imperial Gummy Bears?” joked a medical student.



Imperial students when new logo

Jaffer feels that Imperial “needs to go back to the drawing board.”

“There are some people who think rebranding is needed, and there are some who don’t. But I don’t think that’s the issue, it’s more the way in which they publicised it.

“They can redesign the logo, but they need to get a lot more feedback in the process.”



Construction workers were on campus this week to update College branding. Walt Gao for Felix

# Strengthening Imperial's brand

*Hugh Brady, President of Imperial College London*

**F**or over a century, Imperial students, staff, and alumni have been at the forefront of scientific discovery, pushing boundaries and delivering real-world impact. It's these individuals that made Imperial the education and research powerhouse, and beacon of innovation it is today.

The institutional Strategy we launch on 5<sup>th</sup> March will set out how we take this to the next level, to maximise our potential as a force for good in the world. Of direct relevance to our Strategy launch is how we tell Imperial's story and present our plans to the world.

During our highly engaging institutional conversation on our new Strategy, I was struck by how many of our community urged that we tell our Imperial story with more confidence. This was not a shallow appeal to inflate our worth to the world, but a heartfelt request to garner the recognition Imperial is due with the ultimate goal of inspiring others to join us, partner with us, back us and invest in us.

“

**In a noisy, competitive and changing world, we cannot assume that Imperial's brilliance will speak for itself.**

As a relative newcomer to Imperial, I had to agree! Imperial is a fantastic institution, but perhaps overly modest. These things matter. In a noisy, competitive and changing world, we cannot assume that Imperial's brilliance will speak for itself.

Our new Strategy sets out our future ambition, and our work to strengthen Imperial's brand – how we tell and represent our story – supports this effort. It should deliver multiple benefits, from helping to



Hugh Brady is the President of Imperial College London. He leads Imperial's strategy and its links to government, industry, philanthropists, and alumni. As Chief Executive of the College, the President is Imperial's principal academic and administrative officer. Thomas Angus for Imperial College London

attract the best talent, funding, and partnerships, to strengthening our global reputation and ranking. Ultimately, it should help us compete on a sustainable basis in the very top tier internationally.

But what do we mean by the Imperial brand?

It is best described as the sum total of everything people see, hear, and experience of Imperial. The experience people have when they visit our campuses, or our website, our choice of partners, the focus of our research, how we talk about it – all of these and more shape what our university means to people.

The Imperial brand is much more than a shade of

blue, a logo, or a tagline, though these elements are important. That is why we have developed a visual and verbal identity, rooted in our science heritage, that is modern, confident, and expressive. Both elements articulate Imperial's purpose and vision, our strengths and impact, all while seeking to differentiate us in a crowded and competitive landscape. Our official crest and institutional name remain unchanged, but other elements have evolved, as they do over time for most organisations no matter how modern or ancient.

A huge thank you to the thousands of students, staff, alumni and friends who shared their ideas and feedback at multiple stages throughout the development of this work – whether through survey responses and focus groups at the very start of the process last summer, or through feedback sessions and online responses to the initial creative in the autumn. The level of engagement is a testament to our community's ambition, creativity, diversity and commitment to Imperial's future.

I hope as many of you as possible can join us for our Strategy launch on 5<sup>th</sup> March.



The new logo, part of Imperial's brand project. Imperial College London

# Union to push for more part-time work opportunities for students

## Union reps will also lobby for an increase to PhD stipends.

**Editor-in-Chief**  
**JAMIE JOHN**

Imperial College Union (ICU) will lobby Imperial for more part-time work opportunities for students, and Union representatives will call on UK Research and Innovation to increase its London PhD stipends.

The decisions follow Tuesday's Union Council meeting, where student representatives approved two motions

aimed at addressing the impact of the cost-of-living crisis on Imperial students.

### Part-time work

ICU resolved to facilitate more employment opportunities for students, and where possible, will try to find flexible part-time jobs at the Union that account for the commitments students must make towards their degrees.

Council members debated the merits of setting internal limits on part-time work, noting that it was a necessity for many, but that it could harm their university work.

Imperial discourages part-time work during term time, but recommends that if 'unavoidable, [students] work no more than 10 to 15 hours per week'. International students cannot work more than 20 hours a week under UK law.

The Union will meet with students and the College for further discussions on the impact of part-time work.

### PhD stipends

The second motion addressed PhD stipends, which support doctoral students with their living costs. Stipend rates are outlined by UK Research and Innovation (UKRI), and generally matched by PhD funders across the country.

UKRI sets out two main rates that are updated each academic year: one for London, currently set at £20,622, and one for students outside London, set at £18,622. The £2,000 difference is a 'London allowance', to account for the additional costs of living in the capital.

At Tuesday's Council session, students called for an increase to the London allowance, which has been fixed at the

same level for the past 30 years.

They estimate that annual rents in London now exceed those in the next-most expensive region by over £6,000 and argued that the current allowance does not adequately account for this.

The paper faced opposition from Silwood Chair Jack Arthur, who said that focusing on London alone did a 'disservice' to other UK universities, where students are also facing cost-of-living pressures. He instead called for an increase to the base rate paid to doctoral students across the country.

The paper was passed unanimously without the changes suggested by Arthur, and ICU's student representatives will now attempt to form a working group with other London universities in order to lobby UKRI.

# Imperial first team to qualify for University Challenge semi-finals

## Lee, Jones, Haddad, and Debnath pulled away from Manchester after an early scare to reach the semi-finals of the competition.

**Editor-in-Chief**  
**JAMIE JOHN**

Last week Imperial became the first team this year to qualify for the semi-finals of University Challenge, after securing their second quarter-final victory. Lee, Jones, Haddad, and Debnath beat Manchester 205-120.

"Imperial, to get 205 at this stage of the competition against an incredible impressive team is phenomenal," said host Amol Rajan.

Teams must win two out of a maximum of three quarter-final games to qualify the next round.

Imperial trailed Manchester for most of the game, but pulled ahead 19 minutes into the half-hour broadcast, clinching a starter question on flags, before correctly answering three bonus questions on pragmatic sanctions in European history.

The team never looked back from there, putting in a sublime performance to win the game.



BBC

# REP OF THE MONTH

The Representation Team are back with their 'Rep of the Month' scheme for the 23/24 academic year.

This awards a student representative from Undergraduate and Postgraduate level a £10 Amazon voucher for their commitment and dedication to their role as a Rep!

For the month of **January**, we are pleased to announce that the following students have been awarded 'Rep of the Month':

## Undergraduate



### Anant Pratap Singh

#### Faculty of Medicine

Anant's nomination stated that Anant deserves to win Representative of the Month due to his unwavering dedication and consistent fulfillment of duties as the department representative over the past three years.

Despite being a second-year student, he seamlessly integrated into third-year meetings and committees without hesitation. His steadfast commitment to the role is admirable, despite its time-consuming nature. He takes a proactive approach in engaging with various staff members to advocate for more academic events and funding, demonstrating his passion for student well-being, academic excellence, and enriching student life within our department.

## Postgraduate



### Deniz Etit

#### Department of Chemical Engineering

Deniz's nomination stated that Deniz has so far accomplished everything he promised during his campaign as a departmental representative and is very passionate about his role.

Deniz deserves the Representative of the Month because he's actually pushing for change. In doing so he's been very proactive, always going above and beyond to get things done.

He is seen by other students as someone who they can go to and has been seen in the circles of people who have responsibility.

**Congratulations to both reps!**

# Rep Wins

## Postgraduate

The Rep Wins initiative will happen at the end of each term and will be sourced from the nominations we receive in our Rep of the Month scheme.

The Representation Team want to give a shout out to reps who have each gone above and beyond to make their fellow students' experiences better which is why we have introduced Rep Wins!

Rep Wins celebrates the work reps have been doing in their roles whether that be academic support, wellbeing initiatives or social and cultural activities that they have given to other students.

**A massive congratulations to our Term 1 Rep Winners...**

Postgraduate



## Lucie Legrandois

**Department of Design  
Engineering**

Lucie has done an amazing job supporting fellow reps and has led by example in how students should carry out the role as well as helping to resolve issues with the College.

Postgraduate



## Yucen Wu

**Department of Metabolism,  
Digestion and Reproduction**

Yucen has improved student wellbeing by organising several dinners and other successful events which have increased good working relationships between reps.

Postgraduate



## Alex Taylor

**Department of Life Sciences**

Alex has organised social events, attended all faculty and union meetings, and is tirelessly campaigning for extra student support. This has made a big impact to the department.

Postgraduate



## Kawtar Houbad

**Department of Chemical  
Engineering**

Kawtar played a key role in enhancing the existing buddying system, fostering connections between current students and alumni, thereby strengthening the supportive network beyond academic realms.



# Rep Wins

## Undergraduate

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**A massive congratulations to our Term 1 Rep Winners...**

**Undergraduate**



## Jay Haley

**Faculty of Engineering**

Jay has created many welfare events such as dog petting, gingerbread decorating, knitting, movie nights & LGBTQ+ inclusivity events that have all attracted large attendance.

**Undergraduate**



## Iolanthe Georghiou

**Department of Medicine**

Iolanthe has designed an infographic to advertise wellbeing support which was included in the Faculties welfare bulletin and shared in year group chats.

**Undergraduate**



## Emma Clarasão Batllori

**Department of Physics**

Emma has gone above and beyond in providing efficient communication between the department and the students during the aftermath of the strike.

## SCIENCE

# ICLR celebrate record-breaking hot-fire test of THANOS-R engine

Imperial College London Rocketry test marks one of the first collegiate firings worldwide of a 3D-printed aluminium alloy engine.

Science Editor

TAYLOR POMFRET

On 11<sup>th</sup> February, Imperial College London Rocketry team (ICLR) successfully tested their rocket engine on the Silwood Park campus testing facility. This was their most powerful test yet, with the rocket attaining a peak thrust of 3.8kN for two seconds.

The engine subject to the hot fire is called THANOS-R. This is an improved engine compared to its predecessor, THANOS, which ICLR hot-fired in September last year, achieving a peak thrust of 3.2kN.

THANOS-R is a 3D printed, regeneratively cooled liquid rocket engine, which makes it reusable without the need to replace any of its engine components. The test marked one of the first collegiate firings worldwide of an engine 3D printed using a lightweight aluminium alloy, AlSi10Mg.

The society hopes to achieve longer burns with their reusable engine in future tests. This is in anticipation of this year's European Rocketry Challenge (EuRoC) in Portugal, where ICLR will be launching their rocket, Nimbus.

I was fortunate to attend the test fire on the day, and caught up with propulsion engineers Elliott Brookes-Gayton and Martin England to discuss ICLR's engine test.

"It went very well – we got performance close to what we expected, in some areas it exceeded the performance



THANOS-R hot-fire test: patterns seen are called Mach Diamonds which occur as a result of shockwaves produced by the supersonic exhaust gas. The velocity of these exhaust gases is approximately 2000m/s. ICLR

of our worst case scenario. As a preliminary test it went well: now that we can prove the engine has ignited and that we can show it can reach a thermal steady state under our most conservative conditions, we're ready to go up to full duration burn and start increasing performance further."



**For us, it's about getting higher thrusts, longer burns, and the regen engine opens up that opportunity.**

ICLR is a student-led team composed of undergrad students across all disciplines at Imperial. Since their creation in 2018, the team has welcomed over 100 students to work on their rockets.

Members of ICLR are grouped into different sub-teams, each having an individual collective and goal. There are seven of these sub-teams: airframe and recovery (aim to avoid rapid unscheduled disassembly or descent), electronics (ensure telemetry, sensors, and video cameras are installed), propulsion (responsible for the engine), altitude record team (aim to break UK

altitude record for amateur rocketry), payload (responsible for making payload to send on rockets in competitions), flight dynamics (responsible for the dynamic modelling of flight), and business and marketing (specialising in outreach and merchandising).

Elliott and Martin are both Mechanical Engineering students. They've been working with ICLR for over two years. Starting off as propulsion engineers, Elliott is now the Propulsion Team Lead, while Martin is the Propulsion Technical Lead.

"If you treat our team in isolation, our aim is to develop propulsion systems. You can have higher thrust, you can have longer duration burns, and you can have more efficiency, realistically. For us, it's about getting higher thrusts, longer burns, and the regen opens up that opportunity to have much longer burns. In theory, you can burn non-stop provided the fuel tanks are big enough, but our focus is on having more efficiency and more burn duration."

THANOS-R is a liquid bipropellant rocket engine, which uses both a liquid fuel and an oxidiser. Together they mix and are burnt at high pressures in a combustion chamber – the exhaust gas generated is accelerated through a nozzle, which generates the thrust.

"In a rocket, you have a fuel and an oxidiser, the aim is to burn it and release the chemical energy from the pro-

pellant. Every time you burn something, you increase the heat, and if this is done in a confined space, that increase in heat is going to manifest as an increase in pressure. When you pass a pressurised fluid through a converging-diverging nozzle, contrary to intuition, this process actually accelerates the gas, converting all the thermal energy into kinetic energy of the exhaust gas. Multiply velocity with mass flow, you get thrust. And so, the main aim of the engine is to take the propellant, extract its chemical energy and convert it to thermal energy – then accelerate it, expelling momentum out of the rocket.”

“It’s all about throwing as much mass as fast as you can out of the rocket. The faster you can throw it, the more efficiency you have.”

THANOS-R demonstrated a new cooling system onboard their engine, called regenerative cooling, which will allow the engine to be fully reusable without replacing any components.

“With this engine, we use the fuel as a coolant first. Running a cool fluid about a hot chamber prevents the melting of the engine’s interior, making the engine regenerative with some additional efficiency perks.”

“With the engine implemented onto a rocket right now, our altitude targets are modest, but over time, they’re going to go up and up. Having an expendable platform, and technology that we can continue to develop, is quite nice.”

“Me and Martin spent more than a working week’s worth of work. In the week of the hotfire, we spent more time on the hotfire than our degree, by far. On the weekend, people that were there did more than a part time job just being there and working.”

“Martin and I are two mechanical engineers, though the society was originally started out of the Aeronautics department. As it’s gone along, the society is starting to see support coming in from Mech Eng. We’re actively expanding to Physics

and EEE, with the basis that anyone who wants to join is welcome to join. Anybody is welcome to join if you’re into this. Some people are here for the vibes too – I’m fine with



**It’s all about throwing as much mass as fast as you can out of the rocket. The faster you can throw it, the more efficiency you have.**

that, the vibes are good.”

This year, ICLR will be participating in two competitions. The first is the Race to Space competition, purely a propulsion competition, where teams have an opportunity to fire their engines.

“They call it a competition, but

## ICLR Sign-up



really it’s an opportunity for these teams to fire their engines.

“We’re the only team that has a test site ourselves, on the Silwood Park campus, everybody else needs to use another one.

“Part of the collaboration with that is that you cannot compete unless you publicise all your documents, we’re not about trying to hide everything, we’re about everyone trying to learn, improve and do the cool stuff.”

The main competition for the team is EuRoC 2024, which will be taking place in October.

“We’ve been there for the past three years in a row; and our track record has not been great. We get very close, do pretty well, but it’s the last little bit that stumps us.”

The team also have ambitious plans to launch the first rocket of their size, type and calibre, in the UK.

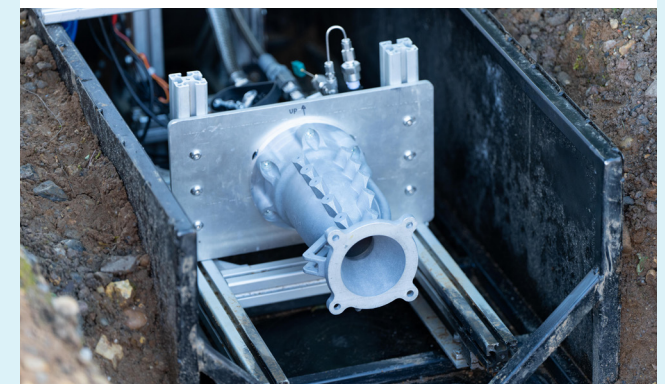
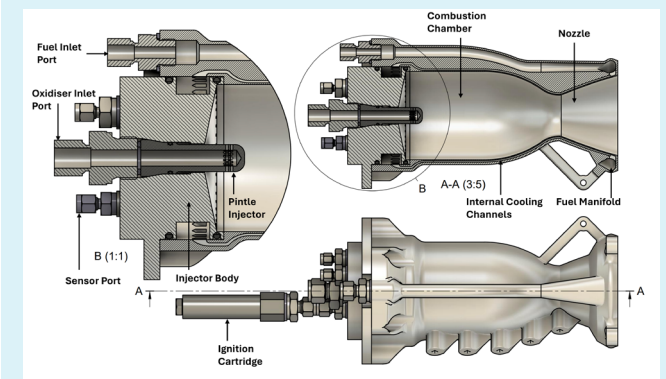
“You can do it in all sorts of places in Europe and North America, there’s just nothing in the UK right now to launch liquid bipropellant and hybrid rockets. Potential sites include RAF bases, where they have a lot more land. We have a lot of people that need to agree to a lot of scary things to ask.”

From talking to Elliott and Martin, and all of the ICLR team members on the day of the test, their scientific feat is a testament to the unwavering dedication and collaborative spirit of the group. The 3D-printed, regeneratively-cooled liquid rocket engine marks a paradigm shift in propulsion technology, emphasising sustainability and reusability. As they set their sights on upcoming competitions like the Race to Space and EuRoC, the team’s aspirations extend beyond accolades and competition, aiming to carve a niche for themselves in the UK’s rocket launch landscape. The ICLR team’s journey is not just about reaching new heights in rocketry, but also about fostering a community of students pushing the boundaries of scientific exploration.

If you’re into rocket science or just want to soak up the good vibes, consider joining ICLR and sign up using the QR code. The team are an incredibly friendly bunch and the science and engineering they do is fantastic. All of us from Felix wish the ICLR team the best for their future tests and upcoming competitions!

# THANOS-R: ICLR’s 3D printed engine

## Engine close-ups



Top: cross section of THANOS-R engine  
Bottom: THANOS-R engine pictured before hot fire. ICLR

A liquid bipropellant rocket engine uses a liquid mixture of fuel and oxidiser, which are burnt together at high pressure before being expanded and accelerated through a nozzle to generate thrust. In this engine, the oxidiser being used is nitrous oxide and the fuel is 75% methanol, with 25% water to improve cooling.

## Nimbus rocket



NIMBUS rocket prepared for launch at EuRoC 2023. ICLR

Bringing the engine and the airframe together is a challenge. Propulsion lead, Elliott, fittingly refers to it as “integration hell”, adding, “It’s easy to make things in isolation, integrating it as part of a whole flight system is challenging.” Being in a position to have a rocket on the launch pad is an incredible success for the team. ICLR are eagerly looking forward to their upcoming competitions, including the Race to Space propulsion competition in July, and EuRoC 2024 in October, where they have a chance to launch Nimbus with the new THANOS-R engine.

# Discovered 80 years ago: DNA carry genes, proteins do not

—  
Yasmine's new column explores the history of science, the field of microbiology, and the dated obsession with proteins.

Science Writer  
YASMINE MARENZI

The current protein obsession is not a new development in the field of microbiology. 80 years ago, scientists believed that proteins – not DNA – coded genes.

A publication in the February 1944 issue of the *Journal of Experimental Medicine* changed this assumption. After a decade of research, scientists Oswald Avery, Colin MacLeod, and Maclyn McCarty demonstrated that it was DNA, not proteins to contained a genetic element.

They did this by injecting mice with a mixture of a virulent strain of *Streptococcus pneumoniae* which had been denatured by heat, a non-virulent form of the bacteria.

The researchers found that despite the virulent bacteria being neutralised, the mice were still dying. This led the scientists to conclude that some element of the dead virulent bacteria was modifying the live non-virulent bacteria and making it deadly.

After a series of experiments which used different enzymes to target and denature specific molecules

in the viral bacterium, the researchers found that only the enzymes which destroyed DNA prevented the mice from getting sick. This meant that DNA was the cause of the mice's illness.

Later experiments such as the 1952 Hershey-Chase

experiment, which used radioactive forms of DNA and proteins to show that viruses only transmitted DNA to the targeted cell, helped solidify the conclusion that DNA was responsible for modifying the genetic makeup of cells. However, it was a very controversial discovery, which took a long time to be accepted.

## Probing the role of DNA and proteins

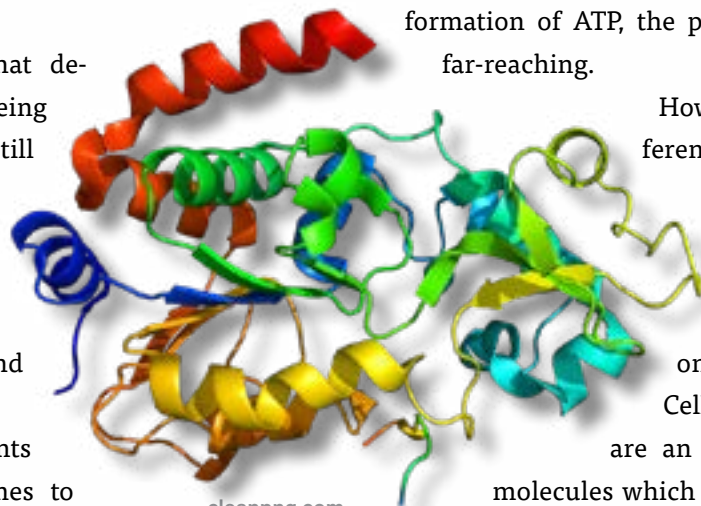
At the time, biologists believed that DNA had a much too simple a structure to execute such an important role. Proteins on the other hand were complex and misunderstood, which meant that they held a lot more potential for advanced functions.

Proteins are still excessively difficult to study. The fragile mesh of inter-molecular bonds are often disrupted by a cocktail of harsh chemical treatments before they can even be analysed. However, we have finally



**At the time, biologists believed that DNA had a much too simple a structure to execute such an important role.**

been able to identify some of the roles of proteins. From acting as a viral binding site on the membranes of cells, to forming complex globular enzymes to catalyse the formation of ATP, the purposes of proteins are far-reaching.



cleanpng.com

However, with so many different protein structures to study and analyse, perhaps we should look to our forefathers for inspiration and focus on more simple molecules. Cellular lipids, for instance, are an understudied group of molecules which could fulfil unanticipated functions.

Maybe the cytoplasm contains the key to understanding how viruses so successfully infect their victims. Maybe proteins aren't the only important molecules.



Pictured from top to bottom are geneticists Oswald Avery, Colin MacLeod, and Maclyn McCarty, who demonstrated that DNA contained a genetic element. First two: Public domain, last: Marjorie McCarty

## ENVIRONMENT

# 8 triumphs in Ecology

Environment Writer  
**BELLE PUGH**

**M**any amazing, positive things are happening to our planet every day. It just seems that most information that we hear and see day to day, can make us feel hopeless and demoralised. But the choices you make always matter. As Dr Jane Goodall says: “We must not give up hope. Every single day that we live, we make some impact on the planet. We have a choice as to what kind of impact that is.”

Here are eight pieces of recent happy news to fill your heart with ecology hope!

### Reshark

Did you know that sharks have been on earth for over 400 million years (longer than trees!), over 500 species of sharks exist worldwide, and some species living up to over 400 years long? They are vital for balancing aquatic ecosystems and many efforts towards repopulating endangered species are underway. For example, the organisation ReShark is working on restoring endangered zebra sharks in Indonesia. Zebra shark eggs are distributed to various aquariums globally where they are nursed and raised before being tagged and released into protected ocean areas. With over 500 sharks currently in care, we hope for successful results. Other shark species await the same programme.

### Speedy coral

A single coral reef is capable of harbouring thousands of different species. By acting as a natural filtration system, corals capture carbon dioxide, and protect coastal areas from harsh waves. The problem is, corals are highly sensitive to ocean acidification which bleaches corals when exposed to low pHs. Coral Vita has created a technique to grow corals up to 50 times faster than normal, whilst also building the corals' resilience against ocean warming and acidification. Pieces of coral are harvested and split before being planted a calculated distance away from each other in an aquarium. Previously attached pieces have memory of each other and

fight to be as close together again as possible, therefore growing at much quicker rates. The coral can then be planted into degraded reefs.

### Seagrass boom

Seagrasses are heroes for our planet. They trap microplastics, capture carbon and provide food, shelter and nursing grounds for baby fish. Despite only covering 0.1% of the seafloor, seagrass beds capture 10-18% of the total ocean carbon. In recent years, over 92% of seagrass beds around the UK have been lost due to industrial development, pollution, and disturbance of the ocean floor, for example via bottom trawling. A project to restore seagrasses in Kent started this January, with dwarf eelgrass seeds being planted across three sites. Learn more about it on [projectseagrass.org](http://projectseagrass.org).

### African elephants on the rise

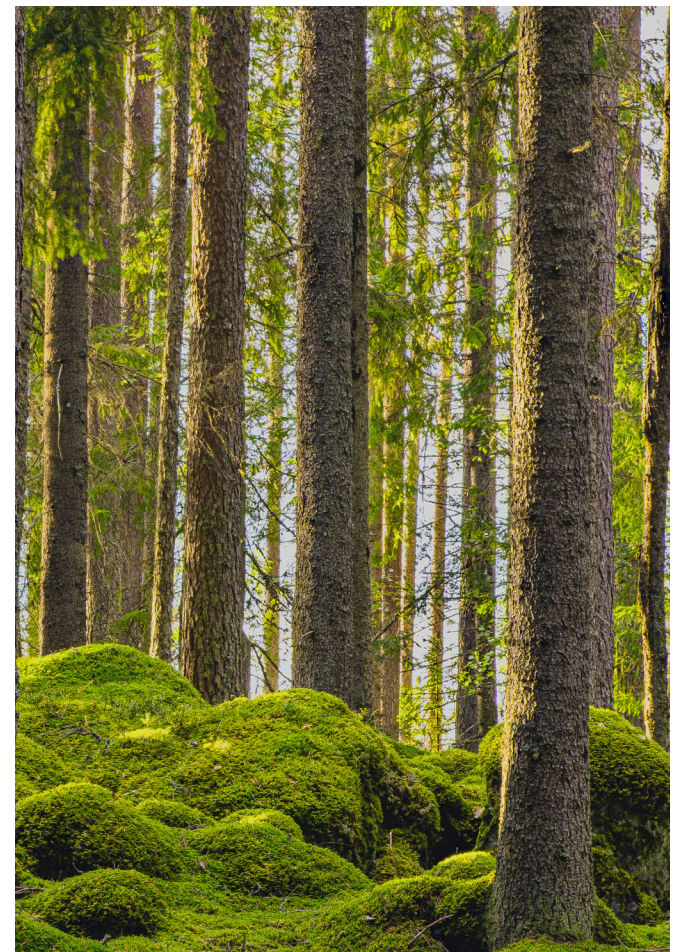
Populations of endangered African elephants have stabilised in South Africa. Their increase in survival is due to improved habitat connections and reduced poaching. A 25-year long study monitoring 290,000 savannah elephants pointed to a growth rate of 0.16% per year, accredited to conservation efforts across 70% of Africa.

### Activists win in Norway!

This is proof that what you do matters! Young Friends of the Earth and Greenpeace Norway won a court case in January, against the exploitation of three large oceanic oil and gas fields. Despite the projects being approved in 2021 and 2023, and production commencing in October, Norway's climate activists appealed to the European Court of Human Rights, under the circumstances that the projects were a breach of human rights during a climate crisis. The court ruled in favour of the activists, calling the exploitative activities illegal and halting all further development.

### Cigarette roads

Cigarette butts are the most abundant form of plastic pollution, with over 4.5 billion individual butts on Earth



Poland's forests are now protected by law Adobe stock images

right now. They also contain toxic substances, including arsenic and lead, which can easily seep into the ecosystem. Bratislava, the capital of Slovakia has become the first city in the world to use cigarette butts as a replacement for asphalt in road construction. Bins specific for cigarettes are abundant around the city and during the recent Christmas markets, special containers suitable for collecting vapes were also trialed. This not only removes the harmful environmental effects of cigarettes but also tackles the pollution caused by concrete manufacturing.

### Hap(bee) with solar farms

There has been growing concern about the effect of solar farms on biodiversity, especially the loss of native habitats. However, recent studies in the US found that by planting a carnival of native wildflowers amongst the solar panels, a three-fold increase in insects was observed and native bee numbers jumped by a factor of 20. This was also positive news for crops planted nearby as more pollinators were around to promote their growth.

### Poland's fabulous forests

Poland's beautiful forests are safe under new climate minister Paulina Hennig-Kloska, who has protected 20% of Europe's most ancient and biodiverse woodlands. In recent years high logging rates have been destroying habitats that are already under pressure, causing a disappearance in threatened species such as bison, brown bears, and grey wolves. The protection of these forests is also a good thing for the climate as forests perform important roles as carbon sinks.

# Insights from the Green Careers Fair

**Environment Writers**  
COLLEEN WIJAYA  
MILAN PACZAI

Sustainability is sustaining what matters in life for the generations to come and letting go of all the rest. It focuses on the long-term survival of individuals, communities, and social structures. With a changing world and an annual population growth rate of 1%, sustainability isn't just about population growth. It is about addressing the widening wealth gap and unequal consumption patterns. As demand for basic needs increases, we need to adapt. Sustainability is about meeting these needs within our planet's capacity, given we're currently using over 1.5 times the Earth's resources annually. Addressing this involves redistributing and managing resources, understanding consumption patterns, and innovating solutions.

This year's Green Careers Fair connected Imperial students to companies which are doing all of these. It

took place in the evening on 6th February in Queen's Tower Rooms. The fair was sponsored by Imperial Zero Pollution and organised by Imperial+, Environmental Society, Engineers Without Borders, Climate Entrepreneurs Club, and Chemical Engineering Society.

There was a total of 25 companies attending the 2024 Green Careers Fair. Some were Naked Energy - a company focused on revolutionising solar technology, Vertical Future - a vertical farming technology and data company, Mission Zero - a direct air capture company, and other notable sustainability-focused companies. (Note: All companies who attended GCF can be found in the GCF e-brochure via [www.tinyurl.com/GCFcompanies](http://www.tinyurl.com/GCFcompanies) or by scanning the QR code)

During the planning of the 2024 Green Careers Fair, there were two main aims/purposes we wanted to achieve: Firstly to raise more awareness about sustainability and climate change. Secondly to give opportunities for people to pursue their interest in sustainability and make their



A poster for the green careers fair Lina Rhmari Tlemcani

own unique impact.

People can know why sustainability is important, but it is only through interactions and conversations with passionate people working in the field, that we can envision the impact we can have on the planet.

This year, the Green Careers Fair had a unique reflection space to reinforce this human aspect of one's career journey. It allowed every participant to take a step back, observe their situation, and assess their progress in their abilities to successfully pursue a green career. This links closely to the second aim - holding the space for everyone to embrace their unique selves and identify opportunities for unlocking their full potential.

As the topic of sustainability is incredibly broad, consequent of its integral participation in our social and natural environment, it can be confusing and overwhelming to take in. Sustainability is a massive exploration site, and Imperial offers a variety of sustainability-focused societies to develop the necessary skills and knowledge required for a green career. Furthermore, Imperial+ is a newly launched value-based community of Imperial students and staff accelerating Imperial's sustainability transformation. Imperial+ is cultivating a vibrant, collaborative Imperial ecosystem geared towards a resolute alignment with sustainability objectives and the realisation of the College's Strategic Aims.

Come and be a part of the change you want to see.

To be involved in organising the Green Careers Fair next year, feel free to contact Milan Paczai or Colleen Handriani Wijaya.



Participants and company representatives at the green careers fair Lina Rhmari Tlemcani

# All risk, no reward

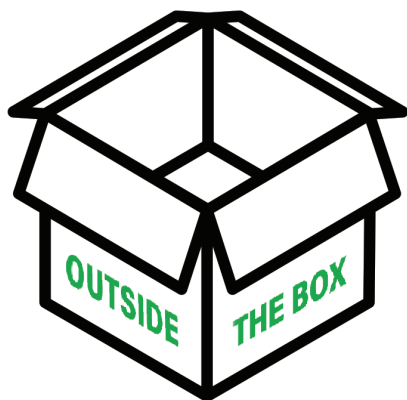
Through the environmental and climate-change sector runs a narrative of crisis and disaster, that the current trajectory we're on is unsustainable and unliveable. For some, this can be a call to action, an opportunity to contribute to saving the planet – whether this comes from optimism that something can be done, or frustration that more isn't being done already. To others, this narrative can be paralysing, making them doubt that anything they do for the cause will matter.

Considering this, it is also important to recognise how many people are still oblivious to climate change and environmental issues, or don't understand the true scale of them. Students at Imperial, and particularly those on environment-oriented courses, exist in a bubble with a skewed demographic, where it is easy to assume that our knowledge and supposed rationality is commonplace, when in fact this is far from the reality.

It is equally easy to think that the general public is wilfully ignorant of these issues, or remains apathetic despite having awareness of them, choosing to continue as normal. An article in the *Financial Times* highlighted that, though climate policies appear to garner public backlash, in reality, government popularity often increases in response to such measures. The article reported that, from a sample of 130,000 people in the Global Climate Change Survey by the Institute of Labour Economics, 69% are 'willing to give 1% of their household income a month to fight global warming'. However, those same respondents estimated this figure would be, on average, 43%, suggesting that most people feel they are in the minority in their willingness to take individual climate action; this kind of distrust is not conducive to progress.

This idea can be extended both to how firms interact with each other, and to the disconnect between scientists, policymakers, and the general public.

Contrary to popular belief, most large corporations now have definitive net-zero targets that they are working to meet in the next few decades. However, the ambition of these targets depends on whether executives feel as though other firms are carrying out similar practices. If corporate managers sense they are making costly changes to their operations while others aren't, this can disincentivise investment into practices such as improving energy efficiency or carbon capture to reduce net greenhouse gas (GHG) emissions. Corporations are also held accountable



WITH ZANNA BUCKLAND

by stakeholders and investors, in which case perceived risk can work in reverse, and encourage firms to carry out carbon-reduction practices, because this signals to stakeholders that they are capable of making profits while staying in line with climate policies and regulations.

The Network for Greening the Financial System (NGFS) is a group of banks and supervisors that aims to provide advice on climate-risk

management for businesses, and encourage financing of green practices and climate-change mitigation methods. Understanding potential future scenarios and levels of climate risk is particularly important for asset management and investment in sectors such as real estate, because the future value of assets is likely to be heavily influenced by the effects of local climate change.

Climate-scenario modelling – predicting the level of risk that companies are vulnerable to from climate-change impacts – is still a relatively novel branch of climate science. In a similar way to how economic models must make assumptions and tend to ignore many extraneous variables, so must most climate models.

The accuracy of these models is also inhibited by the disconnect between physical risk (the physical impacts of climate change on humans) and transition risk (the potential costs of moving towards a climate change-adapted society). Physical-risk models tend to make more long-term, higher-level predictions – on the timescale of 10 or more years – than transition-risk

models do, which are most accurate on timescales of under five years. The outcomes that climate models predict often turn out to misalign with reality. To improve model accuracy, it might be useful for climate scientists to focus on narrower timescales that more closely align physical and transition risk.

Policymakers often work with scientists and policy researchers, who use data from these climate risk models, among other sources, to make recommendations on the feasibility and social implications of policy proposals. However, too often, these recommendations are discarded by policymakers, which could be attributed to distrust or misunderstanding of scientific data. This can also cause scepticism of climate policies among citizens, particularly when science and policy don't appear to align with each other, or when there is ineffective communication of the reasoning behind policies. Despite this, seeing governments establish definitive targets and goals can improve public trust in their initiatives.

That being said, these targets almost lose their meaning when they frequently aren't met, which can have the opposite effect and cause people to lose faith in political action. The same goes for corporate net-zero commitments, and though it might not always seem like it, consumers play a huge role in holding businesses accountable to these goals. While having strong long-term goals is important for ensuring that different countries are on the same page and working towards a similar future scenario, there is an argument to be made for focusing more acutely on setting, promoting, and achieving shorter-term climate change targets.

The EU has recently updated its target of net-zero GHG emissions to a reduction of 90% by 2040 (relative to 1990 levels). Although this has been shown to almost certainly be an achievable goal, does this long-term target factor well into the commitments of individual corporations and governments? Most market outlooks predict up to five years in the future, and so defining goals closer to this timescale could encourage more ambitious corporate action and a more orderly transition – meaning a consistent rate of adaptation over time, rather than making lots of changes right before a target's deadline. This might also align better with political terms, which in European countries tend to be between three and seven years.

Media coverage and analysis of climate research and policies is constantly toeing the line between optimism and doomism, and both extremes can be detrimental to making real progress. As such, it is vital for politicians and journalists alike to effectively communicate these ideas to their audiences, with awareness of potential differences between them in their understandings and perceptions of both climate change matters, and the impact this has on people's and firms' willingness to



youngthousands, CC-BY 2.0

## FOOD&TRAVEL

# Detective, my flat was robbed, but all they took was a letter from my deceased husband

## Earl's Court prohibition speakeasy 'Evans & Peel Detective Agency' solves the crime of sobriety

Food & Travel Editor

CHARLOTTE PROBSTEL

My flat was broken in last night, and all they took was a letter," I cried into the microphone outside of the door that read 'Evans & Peel Detective Agency', and the door buzzed, letting us in. As we carefully walked down the flight of stairs and passed through the heavy satin curtain into a small office, we met the detective – a well dressed man with a notebook and pen, ready to listen to us.

"So, what was stolen?" he first asks.

"The letter that my ex-husband left me," I replied.

"What was in the letter?"

"A series of threes and sevens that were the code to a safe."

"Well, why don't you ask your ex-husband?"

"He passed away two years ago, and all I got was this letter, his collection of vintage mugs, and the yacht."

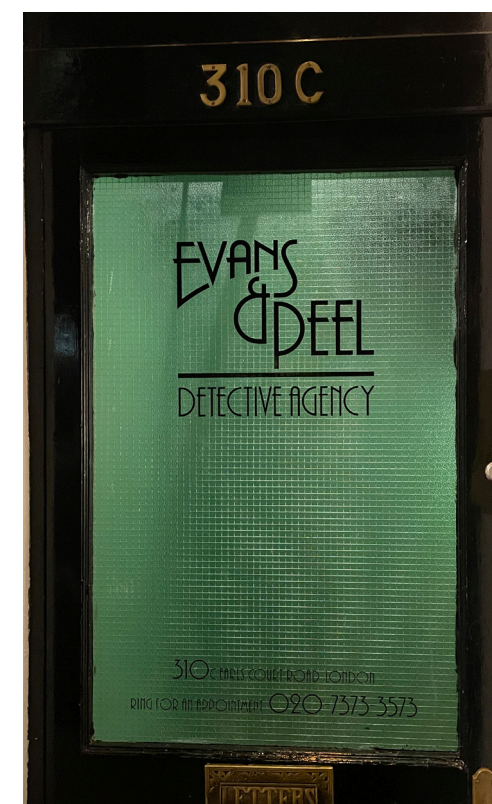
As he searched for a quick response, I could tell the detective was startled. He decides to take the case and leads us through the hidden door concealed in the bookshelf behind him. As the guardian of the speakeasy, it was apparent that this actor took his job very seriously.

Once we were inside, we admired the sparse golden light setting the scene of this underground bar. The waiting staff and the mixologist were all dressed in 1920s clothing – classy yet functional.

As we sat down in the red leather seats surrounding old wooden tables, we could not help but giggle at the setting we had just entered.

The cocktails were themed after famous criminals, fictional and real – Al Capone and Tommy Shelby as examples. The menu, designed to mimic a notebook of suspects, was fun to explore. As the prices ranged from £10-15, we sipped on our drinks to save not only our sober states but our bank accounts. A small collection of snacks were also available.

At 9pm, the band came out to play the most enjoyable live jazz that I have heard in a while, and we were reluctant to leave. However, our reservation ended at 9:15, which the waiting staff upheld strictly due to the packed reservation schedule.



The front door of the establishment.  
Charlotte Probstel / Editor

I am glad the owners found success in their business. I hope to return soon, and claim that my deceased husband resurfaced with a vintage collection of vases.

# The Thames Path - worth the jog?

## From Chelsea to Putney Bridge, a path reveals a different London.

Food & Travel Editor

CHARLOTTE PROBSTEL

On my usual Saturday jog, I decided to head west, instead of east towards Westminster, to explore the Thames around Fulham and towards Richmond Park. While I initially enjoyed the lack of traffic, the noise of which typically surrounds the music in my headphones, I



The pier hosts a collection of rowing clubs and boat houses, among them Imperial's own Boat Club. In the distance is central London. Charlotte Probstel / Editor

slowly found myself in something of a ghost town.

Perhaps it was the cloudy sky, or perhaps it was the suburban structure of the neighborhood. Nonetheless, the emptiness was only filled by the faint unified chants of the nearby football stadium, and the occasional Saturday jogger. The path along the white arrows marked 'Thames Path' was easy to follow and maybe on a sunnier day, it would be more enjoyable.



## BUSINESS

# Imperial ignites London's startup spark

The latest student-powered fair blazes a trail of innovation.

**Business Writer**  
**RICHIE KIM**

Last month, Imperial hosted the London startup scene with the 2024 London Startup Fair, a dynamic event pulsating with creative energy. Touted as one of the largest student-driven entrepreneurship events in the UK, the fair drew over 500 enthusiasts to the South Kensington campus, eager to witness the latest in innovation and collaboration.

### A crucible of creativity

With more than 20 diverse startups showcasing their fledgling ventures, the atmosphere buzzed with anticipation and potential. Among the standout ventures were SAAS companies streamlining student housing searches and biotech platforms revolutionising food preparation. One entrepreneur in the housing space remarked, "Finding housing as a student, especially alone, in a new city is always a challenge, so we wanted to create a platform that makes it easier for students to find housing, and also find the right roommates."

### Imperial: breeding ground for innovation

At the heart of this dynamic eco-system lies Imperial College London. The Lon-

don Startup Fair showcased the institution's commitment to nurturing an entrepreneurial spirit among its students. It served as a testament to the wealth of talent and originality incubating within Imperial's revered halls.

The fair provided a platform for budding entrepreneurs from Imperial, LSE, UCL, and KCL to showcase their projects and connect with peers, mentors, and potential investors. Among the remarkable startups were:

- **Redwood Rent:** A pioneering platform simplifying the process of finding accommodation and compatible roommates for students, addressing a common pain point in student life.
- **Genoa Entrepreneur School:** a pioneering entrepreneurial school cultivating impactful young innovators through unconventional education and transformative thinking.
- **LocalMeal:** born at UCL, it is a platform revealing local eateries to experience personalised and convenient dining.

### London's startup eco-system

Beyond the immediate connections, the London Startup Fair serves as a potent symbol of London's unwavering commitment to nurturing its startup eco-system. The city's thriving tech scene,



The fair provided a platform for budding entrepreneurs from Imperial, LSE, UCL, and KCL to showcase their projects. *Richie Kim*

coupled with its world-class universities and access to funding, create the perfect storm for ambitious ideas to take flight.

As the day drew to a close with a Dragon's Den-style pitching competition, the essence of the London Startup Fair lingered, igniting inspiration and fostering a sense of possibility. The event symbolised more than a mere gathering; it embodied London's commitment to nurturing its startup eco-system and empowering the next generation of innovators.

In the words of one Imperial master's student, "The London Startup Fair exemplifies the incredible energy and drive of London's student entrepreneurs. It pro-

vides a crucial platform for students to connect with peers, mentors, and potential investors, igniting the next wave of entrepreneurial success."

The impact of the fair was by no means contained by its duration, sending ripples through the wider London tech community and beyond, and contributing to the vibrant tapestry of innovation that defines the city's entrepreneurial landscape.



The day drew to a close with a Dragon's Den-style pitching competition. *Richie Kim*

# Leadership Elections'24



Nominations open:

**Monday 12 February, 12:00**

Nominations close:

**Friday 1 March, 12:00**

Candidates revealed:

**Wednesday 6 March, 14:00**

Voting open:

**Monday 11 March, 09:00**

Voting close:

**Thursday 14 March, 14:00**

Results announced:

**Friday 15 March, 18:00**

For more info visit:

[imperialcollegeunion.org/le24](https://imperialcollegeunion.org/le24)



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## SOCIETIES

# Prescribing confidence, one dance at a time

Behind the scenes with Lilia Evans, one of ICSM's choreographers orchestrating the dances for the anticipated fashion show next week.

### Societies Editor

#### CHARLOTTE PROBSTEL

As a fourth-year medical student hailing from Surrey with Welsh and French-Algerian roots, Lilia has been an integral part of Imperial College School of Medicine (ICSM) since her freshman year. Her involvement spans across various realms, from active participation in the ICSM Students' Union, to engaging in clubs such as Light Opera, where she not only graces the stage but also contributes as a choreographer. With aspirations ranging from plastic surgery, to public health and involvement in governing bodies, Lilia embodies the multifaceted nature of today's medical students.

### Choreographer

Lilia's role as a choreographer for the fashion show goes beyond dance. Tasked with conceptualising the creative vision for the walk, she draws inspiration from diverse sources. Last year, the 'Maniac' song motivated an 1980s athletic-themed walk, complete with exercise-heavy choreography, and classic 80s dance moves. Her responsibilities extend to the opening lingerie section with a modern twist, as well as the Boys in Heels tradition, a longstanding favorite involving fun, vogue-inspired performances.

The process involves significant pre-planning. Lilia collaborates with others to create tracks, designs dance moves in advance, and draws inspiration from

sources like YouTube. Teaching sessions occur twice a week, focusing on perfecting moves through lyric-centric instruction rather than traditional counts. Lilia even slows down songs to 75% speed, to ensure everyone masters the fast-paced dance moves.

The number of participants varies across different walks, with 30 to 40 in Athleisure, 8 to 9 in Boys Heels, and 12 in the opening lingerie section. Coordinating with other choreographers, Lilia ensures that their visions align, contributing to a cohesive and visually stunning show. Themes span decades, including the 80s for Boys in Heels and the 20s and 60s for the opening.

For Lilia, the most rewarding aspect of being a choreographer lies in witnessing the transformation of participants' confidence levels. Despite initial apprehensions, she helps individuals overcome their fear of dancing, fostering a supportive environment where students return year after year. Some participants even express a desire to take on choreography roles in the future.

### Her Journey

Lilia's journey from Stagecoach model to choreographer was a natural progression within ICSM. Recognizing her teaching skills during her involvement in the opera society, she gradually found herself choreographing large shows. Her compatibility with choreography within the medical school setting showcases the diverse talents medical students possess

beyond academics.

Despite the enthusiasm and passion, the fashion show choreography comes with its own set of challenges. The short timeline of eight weeks, the fatigue from dancing for five hours, twice a week, the occasional writer's block, and the need to think on the spot all contribute to the hardships. However, she does not give up. If the choreography does not flow well one week, she aims to perfect it by the next week, with enough time for her students to learn well.

### Boys in Heels

Boys in Heels is not the strongest cohort of dancers, but hearing that they practise at home a lot surprised and pleased Lilia very much. She mentioned that one individual in the group, who never considered himself a dancer, asked her if he could choreograph the team next year. "They tell you how proud they are and how much they love working with you," she gleamed with pride.

### The Event

Reflecting on the previous year, Lilia expresses satisfaction with the improved timeline and increased attendance at rehearsals. Auditions held before Christmas ensured that participants were aware of the commitment involved, ensuring that everyone is on the same page. The event itself, spanning 2.5 hours, demonstrates the meticulous organisation of the fashion show, with carefully planned

intervals for audience convenience.

As she navigates her final year of medical school, Lilia contemplates the future, balancing her passion for dance with the demanding schedule of a medical professional. While she may not continue choreographing as a doctor, Imperial College's accessible and flexible environment has allowed her to explore her artistic side while pursuing her degree.

Lilia's journey as a choreographer at Imperial College's fashion show highlights the intricate balance between academic pursuits and artistic passions. Her dedication, creativity, and ability to imbue her peers with confidence make her a shining example of the many talents within the medical student community. I look forward to seeing her work on 29th February, and cheer for all the students that will strut the floor with shine and shimmer.

Until next time,  
Charlotte

Check out the ICSM's Charity Fashion Show on their Instagram at @icsmufashionshow

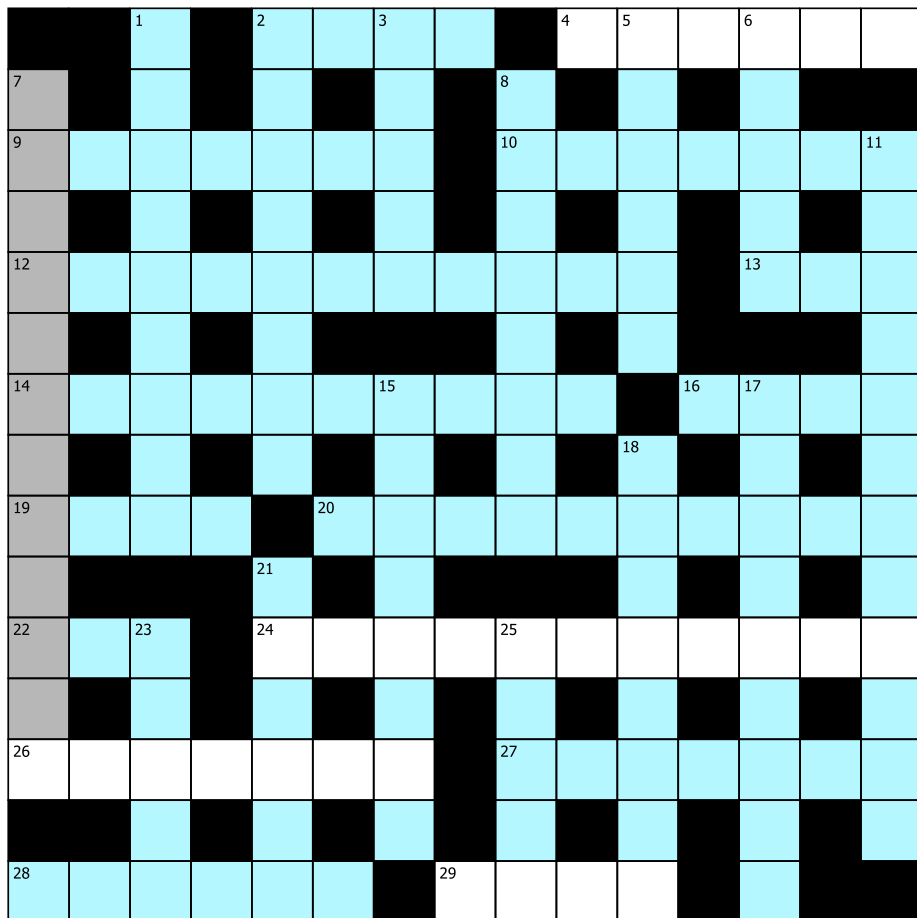


# PUZZLES

Puzzles Editor  
STANLEY SCOTT

## CROSSWORD

*Rainmakers* (3 pts.)



### Across

2. Former Comedy Central show \_\_\_\_o about viral videos. [4]
4. **High, wispy and white.** [6]
9. Faster, in music. [2-5]
10. "I hate" follower. [7]
12. Garments worn with similar ones over them. [11]
13. Word preceding lift or mask. [3]
14. Where executive orders are signed. [4 6]
16. Dreadful. [4]
19. Negative copula, abbr. [4]
20. Achieved with great struggle. [10]
22. o, e.g. [3]
24. **Middle-height and patchy.** [11]
26. **Low, flat and dull.** [7]
27. V-shaped symbol. [7]
28. Description of this puzzle! [6]
29. **Carpeting, spooky and ethereal.** [4]

### Down

1. Insular. [9]
2. The procrastinator's time to be productive. [8]
3. Rattled. [5]
5. Strip of electrons, e.g. [6]
6. Of paper, much. [5]
7. **Towering, dark and thunderous.** [12]
8. Held. [8]
11. Denouncing. [12]
15. Lizzo or James Galway, e.g. [8]
17. At repeated intervals. [9]
18. Most spacious. [8]
21. Taunted, provoked. [6]
23. It contains a chest. [5]
25. Prickly plants. [5]

### Cryptic across

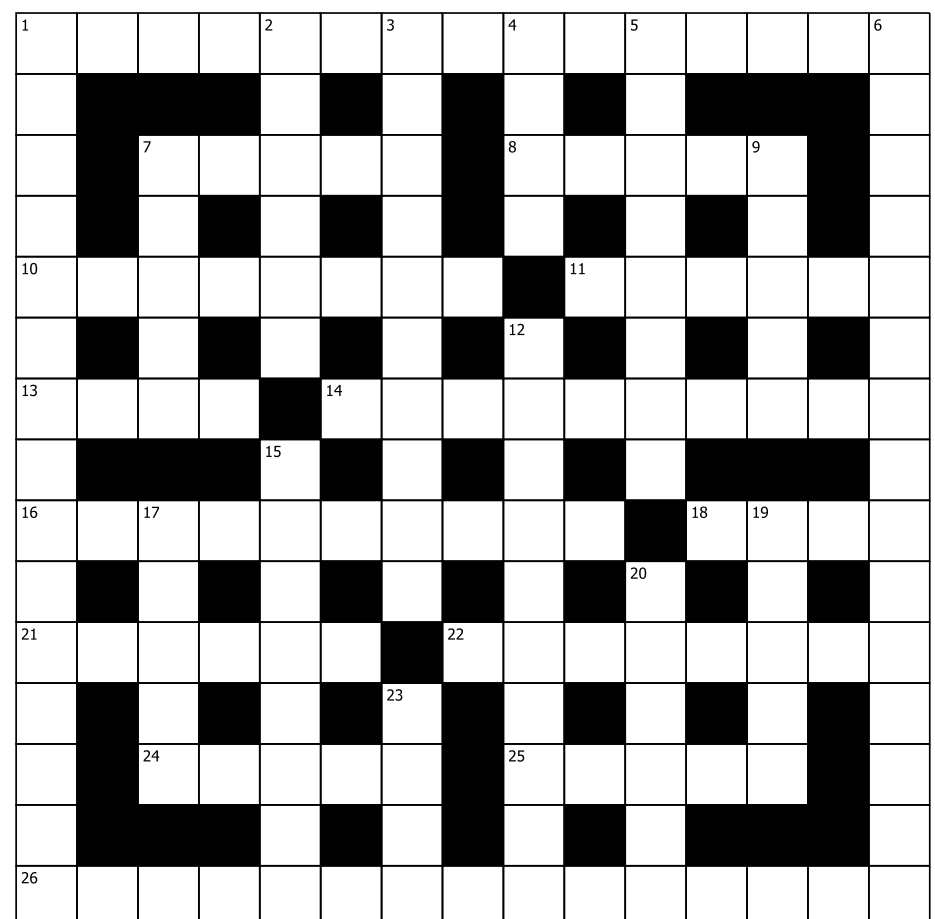
1. Kin protects very badly deprived people. [7-8]
7. Carelessly throw around a term of endearment. [5]
8. First whole in 500th dimension. [5]
10. Hound vicar to cut back excess. [8]
11. Nation in the north-east I rub the wrong way at first. [6]
13. Modern guy? [4]
14. Room at South Kensington Campus for electrical engineers mostly facing hospital in Barking! [10]
16. Audibly, I punch its face parts. [3-7]
18. Make one pay for the ride. [4]
21. Mule becomes the boss after singing like this? [3-3]
22. Fine salty concoction is a quack's remedy. [5 3]
24. Sprite of pseudonym "phantom". [5]
25. The Greek alphabet begins and ends around the globe. [5]
26. Once, grandpa's ego was wounded in a childhood competition. [3-3-5 4]

### Cryptic down

1. Parsnip chopped for the meal is normal. [3 3 3 6]
2. Make like a rodent and sign the treaty! [6]
3. Shout in pain next to exploding cracked core of uranium. [10]
4. Won't be a city? [4]
5. In control, but meandering. [8]
6. I got tangent confused with convex surface inside the central circle intercept! [7 4 4]
7. Fold in soil (about a pound). [5]
9. Dynasty has new moon in the capital. [5]
12. The attraction of a most beautiful, mysterious weeping. [7 3]
15. Night terrors of a golfer? [8]
17. The end in Spain is delicate and charming. [5]
19. Fringe of anonymous group points out Rome's smell. [5]
20. Hide drag queen in the alpine setting. [6]
23. "23. [4]". [4]

## CRYPTIC CROSSWORD

(5 pts.)



# SUDOKU

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
|   | 5 | 1 | 6 |   | 2 |   |   | 8 |
| 4 | 6 |   |   | 7 |   | 5 | 3 |   |
|   |   | 8 | 5 | 3 |   |   | 4 | 2 |
|   |   |   |   | 9 | 7 |   |   | 4 |
| 1 | 2 |   | 3 |   | 5 |   | 9 |   |
| 9 | 8 | 7 | 2 |   |   |   | 6 |   |
| 8 | 7 |   |   | 2 | 3 | 4 |   |   |
|   |   | 6 | 7 | 8 | 9 | 1 |   | 3 |
|   | 1 | 3 |   | 5 |   | 7 |   | 9 |

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
|   |   | 5 |   |   | 7 | 2 |   | 4 |
|   |   |   | 1 |   | 3 |   | 9 | 7 |
| 7 | 8 | 9 |   |   | 4 |   |   | 3 |
|   |   |   | 4 | 2 |   |   | 8 | 9 |
| 1 | 4 | 2 |   |   | 9 |   | 3 |   |
| 9 |   |   | 5 | 3 |   | 4 | 2 |   |
|   | 6 | 4 |   |   | 2 | 9 | 7 | 8 |
| 8 |   |   |   | 4 |   | 3 |   |   |
| 2 |   | 1 | 9 | 7 |   |   |   | 5 |

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 7 |   |   |   |   |   |   |   | 3 |
|   |   |   | 3 | 1 |   | 9 |   | 7 |
|   | 5 | 1 | 7 |   |   |   | 2 | 4 |
|   |   |   | 5 | 6 |   |   | 3 |   |
| 5 | 4 |   | 2 | 3 | 1 |   |   |   |
|   | 1 | 3 |   |   |   |   | 6 |   |
|   |   |   |   |   | 2 | 8 | 7 | 9 |
| 1 |   | 4 |   | 7 | 8 |   |   |   |
|   | 8 | 7 | 6 |   | 3 | 2 |   |   |

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
| 1 |   |   |   | 9 | 8 |   | 5 |   |
|   | 5 |   |   | 3 |   | 9 | 8 | 7 |
|   | 8 |   | 4 | 6 | 5 |   |   |   |
| 6 | 4 | 2 |   | 1 |   |   | 7 | 9 |
| 9 |   |   |   | 4 | 1 |   | 5 |   |
| 5 | 3 |   |   | 7 | 2 | 4 | 6 |   |
| 3 |   |   | 2 |   | 1 | 7 |   |   |
|   | 9 | 7 | 3 | 5 |   |   |   | 2 |
|   |   | 4 | 8 |   |   | 5 | 6 | 3 |

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
|   |   |   | 2 | 4 | 1 |   |   |   |
| 1 |   | 2 |   |   | 9 |   |   | 5 |
|   | 7 | 8 |   |   |   | 2 | 1 | 4 |
| 4 |   |   | 5 |   | 3 | 9 | 7 |   |
|   | 1 | 5 |   | 8 | 7 |   | 4 |   |
| 7 |   | 9 |   |   | 4 | 5 |   | 1 |
|   | 3 | 1 | 7 |   |   |   | 5 |   |
|   | 6 |   |   | 3 |   | 7 |   | 9 |
| 8 |   |   | 4 | 6 |   |   |   | 3 |

|   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|
|   |   | 5 |   |   | 4 | 9 | 8 |   |
|   |   |   |   | 9 |   |   | 1 | 3 |
| 7 | 8 |   |   |   |   | 6 | 2 |   |
|   |   |   | 4 |   |   |   |   | 6 |
| 6 |   | 3 | 7 |   |   | 2 |   |   |
| 1 | 4 | 2 |   |   |   |   |   |   |
|   | 6 |   |   | 7 |   | 1 |   |   |
|   |   | 7 | 3 |   | 2 |   |   | 5 |
| 2 |   | 1 |   |   | 5 |   | 9 | 8 |

Medium (1 pt. each)

Hard (2 pts. each)

Extra hard (3 pts. each)

# GROUPING GRIDS

|        |         |         |           |
|--------|---------|---------|-----------|
| settle | red     | herring | rest      |
| stars  | snapper | sit     | the light |
| dolor  | gurnard | lorem   | sense     |
| salmon | ipsum   | perch   | collapse  |

### How-to:

For fans of *Only Connect*! The sixteen clues in each of these puzzles can be placed into four groups of four, each with a connecting feature. To solve the puzzle, write these groups and their connections below! An example can be seen in last week's solutions.

|           |         |         |          |
|-----------|---------|---------|----------|
| beta      | bit     | delta   | scrap    |
| mouth     | source  | morsel  | function |
| gamma     | lambda  | iota    | object   |
| tributary | neutron | pointer | alpha    |

Medium (3 pts.)

Hard (4 pts.)

|    |  |  |  |  |             |
|----|--|--|--|--|-------------|
| 1. |  |  |  |  | Connections |
| 2. |  |  |  |  |             |
| 3. |  |  |  |  |             |
| 4. |  |  |  |  |             |

|    |  |  |  |  |             |
|----|--|--|--|--|-------------|
| 1. |  |  |  |  | Connections |
| 2. |  |  |  |  |             |
| 3. |  |  |  |  |             |
| 4. |  |  |  |  |             |

# CRYPTOGRAM

Clue: 1-0-3

### How-to:

Puzzle by Ivin Jose

A cryptogram is solved by cracking the cypher in which an encoded phrase is written. The first few letter correspondences are given to you, and your job is to use your linguistic and logical skills, as well as your quotes knowledge, to work out the secret message. Bonus point for giving where the quote comes from!

|   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| A | B | C | D | E | F | G | H | I | J | K | L | M | N | O | P | Q | R | S | T | U | V | W | X | Y | Z |
|   |   |   |   |   | K |   |   |   |   |   |   |   |   |   |   |   | S |   |   |   |   |   |   |   |   |

|   |   |   |   |   |  |  |   |   |   |  |  |   |   |  |  |   |   |  |  |  |  |  |  |  |  |
|---|---|---|---|---|--|--|---|---|---|--|--|---|---|--|--|---|---|--|--|--|--|--|--|--|--|
|   |   | R |   |   |  |  | R |   | , |  |  |   |   |  |  |   |   |  |  |  |  |  |  |  |  |
| A | H | S | Q | R |  |  | P | S | Y |  |  | N | B |  |  | U | Z |  |  |  |  |  |  |  |  |

|   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |   |   |   |   |   |   |   |  |  |  |  |   |
|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|---|---|---|---|---|---|---|--|--|--|--|---|
|   |   |   | - |   |   | - |   |   |   |   |   |   |  |  |   |   |   |   |   |   |   |  |  |  |  | , |
| B | H | O |   | R | H |   | J | T | U | I | C | Y |  |  | H | M | N | B | N | H | B |  |  |  |  |   |

|   |   |   |  |   |   |   |   |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |
|---|---|---|--|---|---|---|---|--|--|---|---|---|---|---|---|---|---|---|---|---|---|---|--|--|--|
|   |   | R |  |   |   |   |   |  |  |   |   |   |   |   |   |   |   |   |   |   |   |   |  |  |  |
| H | T | S |  | U | H | R | O |  |  | N | B | Y | W | J | P | T | R | O | N | I | C | Y |  |  |  |

|   |   |   |   |   |   |  |  |  |  |   |   |  |  |   |   |   |   |   |  |  |  |  |  |  |   |
|---|---|---|---|---|---|--|--|--|--|---|---|--|--|---|---|---|---|---|--|--|--|--|--|--|---|
|   |   |   | R |   |   |  |  |  |  | F |   |  |  |   |   |   |   |   |  |  |  |  |  |  | . |
| R | H | T | S | L | Y |  |  |  |  | H | K |  |  | U | P | F | N | L |  |  |  |  |  |  |   |

|   |   |   |   |   |   |   |  |  |  |   |   |  |  |   |   |   |   |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|--|--|--|---|---|--|--|---|---|---|---|--|--|--|--|--|--|--|--|
|   |   |   |   |   |   |   |  |  |  |   |   |  |  |   | F |   |   |  |  |  |  |  |  |  |  |
| L | P | M | P | I | C | Y |  |  |  | H | K |  |  | I | H | O | J |  |  |  |  |  |  |  |  |

|   |   |   |   |   |   |   |   |   |   |  |  |   |   |   |   |   |   |  |   |   |   |   |  |  |  |
|---|---|---|---|---|---|---|---|---|---|--|--|---|---|---|---|---|---|--|---|---|---|---|--|--|--|
|   |   | F |   |   |   |   |   |   |   |  |  |   |   |   |   |   | R |  | , |   |   |   |  |  |  |
| N | B | K | C | N | L | O | N | B | F |  |  | N | B | E | T | S | Z |  |   | P | B | Q |  |  |  |

|   |   |   |   |   |   |   |   |   |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  |   |
|---|---|---|---|---|---|---|---|---|--|--|---|---|--|--|--|--|--|--|--|--|--|--|--|--|---|
| R |   |   |   |   |   |   |   |   |  |  |   |   |  |  |  |  |  |  |  |  |  |  |  |  | . |
| S | Y | U | Y | Q | Z | N | B | F |  |  | N | O |  |  |  |  |  |  |  |  |  |  |  |  |   |

(3 pts.)

Quote from: \_\_\_\_\_ (1 pt.)

Ad by Selina Ye

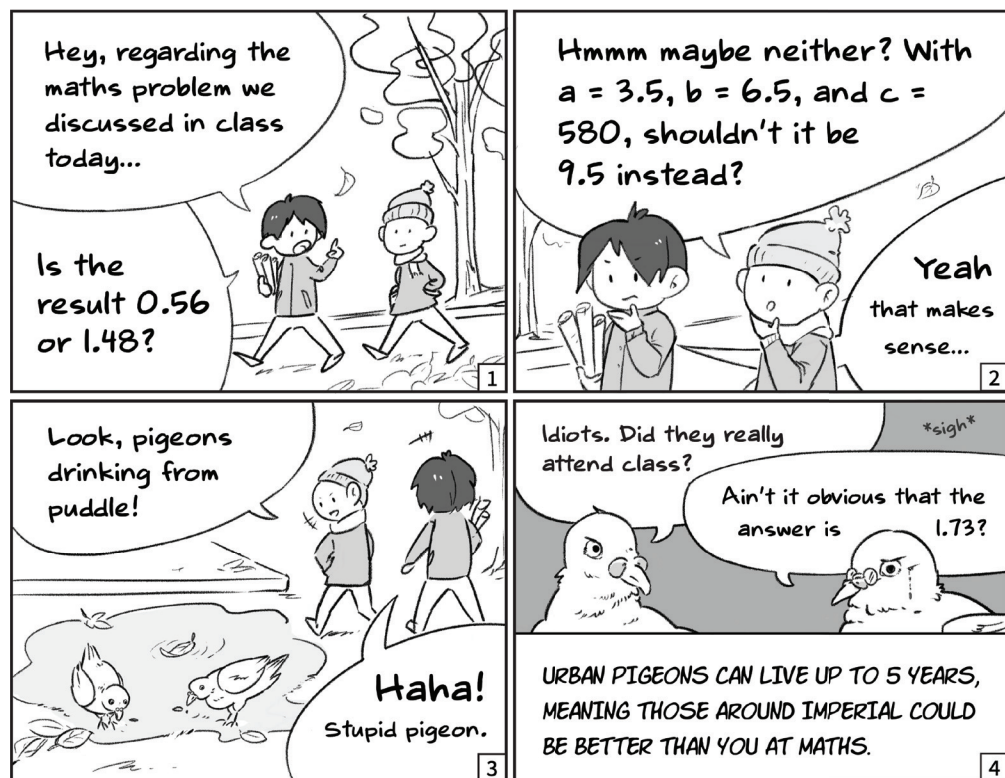
**Felix is looking for a new  
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# COMIC

## Winged Professors



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### Puzzle Editor's Note

Dearest puzzlers,

This week I write to you from across the Atlantic in New Orleans, so I do hope my being occupied here does not propagate into the quality of the puzzles. We've got a great number of riddles for you this week, including another fantastic cryptogram from Ivin Jose.

A hearty congratulations to our first puzzler on the leaderboard, Xuangyong Tay! So far running unopposed, but we know many of you will be able to provide some stiff competition - so send in your answers! Remember, you don't have to complete every puzzle, and if you submit later than Tuesday, we'll still count the points, just in a later issue.

We're also very excited to herald the return of the comics section! Thank you very much to Sitong Guo for providing this week's fantastic strip.

Finally, there is a correction to be made from the last issue: the answers to the regular crossword were of an old version, so I have included the actual answers in this issue. I wish you all a wonderful week of crossing, connecting, completing, comic-consuming and decrypting!

- Stanley

# LEADERBOARD

| Pos. | Puzzlers      | Pts. |
|------|---------------|------|
| 1.   | Xuangyong Tay | 16   |
| 2.   | _____         |      |
| 3.   | _____         |      |

Send a picture of your solved puzzles to [puzzles.felix@ic.ac.uk](mailto:puzzles.felix@ic.ac.uk) by Tuesday to get yourself or your team on the leaderboard!

### Last week's solutions



Repetitive Refrains



Cryptic



Regular (issue 1841, corrected)

Y Z A B C D E F G H I J K L M N O P Q R S T U V W X  
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z

ONCE AN IDEA HAS TAKEN  
M L A C Y L G B C Y F Y Q R Y I C L

HOLD OF THE BRAIN, IT'S  
F M J B M D R F C Z P Y G L G R Q

ALMOST IMPOSSIBLE TO  
Y J K M Q R G K N M Q Q G Z J C R M

ERADICATE.  
C P Y B G A Y R C

Cryptogram (a dream where the top's still spinning)

|         |         |         |        |                |
|---------|---------|---------|--------|----------------|
| post    | squeeze | lunch   | snuff  | ___ box        |
| Crimean | thumb   | flame   | proxy  | wars           |
| nail    | palm    | knuckle | finger | hand parts     |
| IP      | domain  | server  | user   | internet words |

Easy grouping grid

|      |        |      |          |                                       |
|------|--------|------|----------|---------------------------------------|
| snow | hair   | fire | slime    | ___ ball                              |
| foot | idiom  | dole | twix     | stupid people with wrong last letters |
| hand | donate | give | bequeath | give synonyms                         |
| arm  | wee    | toga | balm     | anagrams of animals                   |

Hard grouping grid