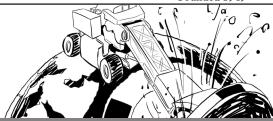
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DEEP SEA MINING: GOOD OR BAD? PAGE 8

Who Brady? - A deep dive on Imperial's next President, Hugh Brady



Imperial College named University of the

Year 2022

Sam Lovatt Editor in Chief

he Sunday Times Good University Guide has granted Imperial College the title of University of the Year 2022. The award comes following recordbreaking National Student Survey results for the College, where student satisfaction reached a new peak of 84%.

The award is all-encompassing for the university, taking into account the renowned work of the COVID-19 Response Team, adaptation and proliferation of staff and students under altered conditions, and widespread volunteerwork in the vaccine roll-out and other aspects of public health. The Times boasts "the definitive rankings for UK universities and the most comprehensive overview of higher education in Britain".

The College seems set apart from other UK universities through its rapid and fruitful transition to hybrid teaching. The editor the the Good University Guide said "no one did it better", citing the improved NSS satisfaction results during a year where at almost every other university's scores fell.

Further to this, the College emphasised its investment in upgrading

teaching spaces to facilitate new methods that fit better with the current climate. Spaces in the Chemistry building and at the Charring Cross campus have been upgraded since 2018, to allow more interactive, smallergroup learning that provides another way of learning outside of lectures. This year alone at least £7.32 million has been spent on improving teaching spaces, with expenditure since the College's 2018 "Vision" was announced reaching millions per year also.

The award is in notable contrast to the Guardian's recently published 2022 university guide, which placed Imperial College at a humble 7th.

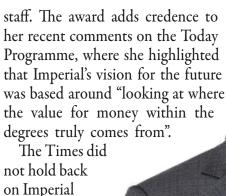
Alice Gast praised Imperial's network of "brilliant people" in light of the news. Provost Ian Wamsley said that the effort of students and staff during the pandemic was "innovative" and "pragmatic". He added "We delivered a transformative education and student experience, as well as impactful research that helped people - exactly when the world needed Imperial".

Vice-Provost Emma McCoy chimed in to thank the College's student-facing Sam Lovatt Editor in Chief

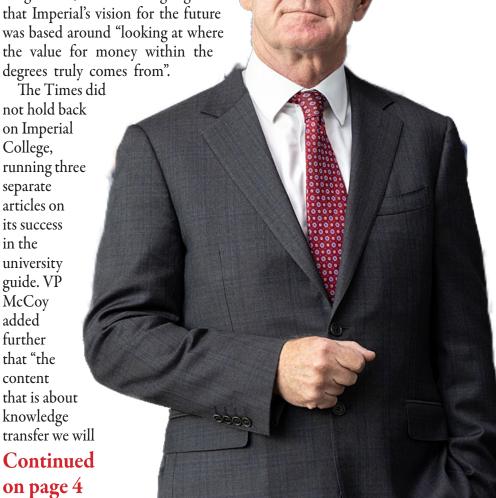
President-College's mperial designate has been announced as Hugh Brady, the current Vice-Chancellor of the University of Bristol (UoB). Professor Brady will take over from the current President, Alice Gast, on 1st August 2022.

Brady was Vice-Chancellor of University College Dublin (UCD), of which he is an alumnus, before undertaking the role of Vice-Chancellor and President at UoB. He has carried out impressive work at both

Continued on page 4







Credit: Imperial College Lon

EDITORIAL

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The Felix Editor on

Political Economics

membership stood at 2.8 million. At the same time Labour membership stood at around 1 million, with affiliated trade unions taking the active total up to around 5 million. Today Labour stands with around 485,000, but most strikingly Conservatives sit with just 100,000 members, 28 times

fewer than 70 years ago.

You may have read, over the last few months, about the existence of something called the Advisory Board (which to me sounds far too much like His Dark Materials' Oblation Board for comfort), an elite tier of Tory membership spearheaded by the party's co-chair Ben Elliot. This "board" is enrobed in secrecy, entirely unmentioned on the Conservative Party website and with very few questions answered on it from Tory spokespeople. Membership of this group is rumoured to cost £250,000 per year, and through Elliot's substantial networking prowess seems to buy members direct access to the PM and Chancellor, as well as Royals and other influential businesspeople. It's hard not to draw a link between this paid access to ministers and the allegations of

After WWII, Conservative party cronyism so common that a new one embership stood at 2.8 million. At appears in the news almost weekly.

To ensure this piece doesn't appear

too one-sided, it's also worth noting that the Labour party secured £14 million in secret loans to finance their 2005 General Election campaign (the Tories did also do almost exactly the same thing).

It appears that the tectonic drop in party membership between the 50s and now

has left the party resorting to, let's face it, corruption and plutocracy, as a means to finance its activities. I don't think any right-minded individual without a vested interest could say that this is a step in the right direction, and the way back seems crystal clear: buy party membership. 1950s membership levels would reap a cool budget of £70 million for the Tory party at today's membership prices, dwarfing even the eye-watering fee of £250,000 to join the Advisory Board. The 100,000 members today generate just £2.5 million, meaning just 10 Advisory Board members doubles the party's budget, making propagation look incredibly enticing. So as a call to anyone UKbased who objects to money buying power I ask you this - please become a member of the party you vote for.

Statement of Intent

At Felix believe that it is always in the interest of the students to 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 it in our pages.

Signed by Sam Lovatt Editor-in Chief

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Felix provides an outlet for all students and staff to review, read about and report on whatever they want. Anything you feel passionate about can be transcribed, honed to perfection with the help of our Section Editors and published both in print and on the website

Writing on what you're passionate about is the best way to deepen your interest and expand your horizons (also, if we're honest about incentives, a lot of the sections get you free tickets and it looks good on the CV)

If you're interested in writing for us, get in touch with any of the section editors at their submissions inbox (e.g. if you want to write for Arts, email arts.felix@imperial.ac.uk), or the Editor in Chief at felix@imperial.ac.uk

We need writers, editors, copy-editors, illustrators, photographers and more!

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Since 1974, "Keep the cat free" has been Felix's motto and These ads will never dictate what is run in the paper. a central tenet of its operation. The phrase applies in three aspects: editorial independence, free to read and free to write. accountable to the law in terms of defamation. As part of

speech. Just because we can say something doesn't mean and support students. The paper will always seek to strike we should. Felix will always be an inclusive environment a balance between public interest and student welfare. for as many people as possible. This being said, Felix does not conflate offence with harm, and any content that is up and read and will remain this way indefinitely. not illegal or deeply immoral can be published at the Editor's discretion, with the following statements in mind. alumni can write freely. This statement applies exclusively to

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The paper will always be a place that students, staff and The paper will never hold a formal political theaforementioned groups, and guest posts, paid or otherwise, funding, despite the occasional inclusion of ads. financially reward any contributions from the above groups.

Continued from page 1

University of the Year

continue to do remotely", reaffirming the College's new hybrid model announced earlier this year.

Continued from page 1 Hugh-ge news

institutions, increasing the proportion of international students at UCD and increasing focus on mental health at UoB.

UoB claim that during his tenure Brady has transformed UoB into a "sector-leader in sustainability and civic initiatives". This may be welcome news to some of the community in light of recent concerns around sustainability highlighted by Felix. Let's hope Hugh's strengths stay with him - during Alice Gast's presidency of Lehigh University, she signed a Climate Commitment letter (see overleaf) which listed 8 actions specifically to improve the university's carbon footprint. A passion which seems to have since left the forefront of our Chevron-affiliated leader's mind.

Hugh's appointment comes as the result of a "global search" by the College Council, spearheaded by Council Chair John Allan. The student body was not involved in the selection process.

When asked about the lack of student input, the Union responded "We are disappointed that students were not meaningfully engaged in the appointment of the new President. Such student engagement is common across the sector and represents good practice, giving the College's key stakeholders a voice in selecting its leader. If the College is serious about student partnership in decision-making, they will extend this to future key appointments"

Professor Brady has a considerable resumé, including notable work in diabetic kidney disease as a medic at Harvard. Here he climbed multiple ranks before entering the administrative side of higher education.



including an honorary doctorate for Queen's University Belfast. He also

sits on the board of Kerry Group plc and ICON plc, which are a public food and pharmaceutical **WE ARE** company respectively. **DISAPPOINTED**

Mental health at THAT concern during Brady's STUDENTS presidency due to an unusually high suicide WERE NOT rate in the years 2016-18 at the university.

MEANINGFULLY Brady speaks somberly **ENGAGED** about the issue on the IN THE Technical Healing podcast, and explains APPOINTMENT

Hugh holds multiple honorary titles, his top-down approach to mental health, highlighting it as one of the most important issues faced by higher

> education today and the importance of change beginning with the leadership. A UoB alumnus, wished who be named, to described Brady as "very corporate", highlighting Brady's expansion of the university during his tenure and the increased numbers to match it. A clash in this expansion occurred at

beginning of the 2019/20 academic year when the number of incoming students surpassed the number of available rooms in halls, leading to first years being offered residence in Newport - a city 31 miles from Bristol and in a different country.

Brady's expertise in philanthropy and networking have been highlighted both by the media and himself. The Irish Times described him as "known for his business mindset". He himself notes his success in improving the endowment of UCD during his tenure as Vice Chancellor. He also oversaw the establishment of the Beijing-Dublin International College in Beijing, in partnership with Beijing University of Technology. Just this month a new initiative called Bristol Illustrious Visiting Professorship was launched via UoB, which brings "eminent global research leaders to UoB to engage with the university's academic community and executive leadership".

College Imperial has fundamentally involved in the UK government's COVID-19 response, improving its global standing and recently was awarded The Sunday Times Good University Guide's prestigious award of University of the Year. Coming from a university over 30% smaller by revenue and with far less endowment, it seems that Brady has his work cut out for him. Regression toward the mean could see Hugh's work outshone by recent

student history, however only his tenure will tell.



Credit: Imperial College London





Climate Commitment

OVERALL STATEMENT

Lehigh University will create institutional policies and procedures to manage the development and implementation of a university-wide plan that affirms our commitment to protect and improve the environment through our teaching, research, faculty, student and staff service, and administrative operations.

Actions

- 1. Take actions to make environmental sustainability and climate change part of the curriculum and overall educational experience for all students. Seek ways and means to engage students as active participants in the planning and implementation of the university's environmental activities.
- 2. Complete a comprehensive inventory of campus greenhouse gas emissions and update the inventory every year thereafter.
- 3. Establish a policy that all new campus construction will be built at least to USGBC LEED silver standard or LEED certified.
- 4. Adopt an energy-efficient purchasing policy that will minimize or reduce greenhouse gases (GHGs) through the purchase of products that save energy in their operation, transportation, and/or production.
- 5. Improve and create incentives for the use of the campus bus system by faculty, students, staff, and visitors to the university.
- 6. Continuously improve the recycling program and reduce waste production at all campus facilities.
- 7. Enhance energy efficiency and limit demand by developing and implementing programs that advance environmental sustainability through conservation and efficient use of resources and reuse of materials.
- 8. Establish methods and quantitative metrics for identifying, monitoring, and regularly reporting how university practices and improvements affect energy use.

Alice P. Gast, President

ha P. Hast

April 15, 2009

ARTS

A PSYCHEDELIC PERFORMANCE... By Gurdip Uppal ...No Shrooms required

Edited by: Vaidhiswaran Ramesh Alex jackson

Opera

The magic flute entrances, but does not enchant

Magic Flute

Where? Royal Opera House
When? Until 7th October, 2021
How much? From £25

Reviewed by Felix Swift Roberts Arts Writer

Watching opera is itself an act of theatre. In the trivial sense, we audience have our costume and our lines, our exits and our entrances, but - for those as jejune as I am - the stage upon which this second performance must be played is nine-tenths internal. Observation is regularly self-reflexive, but the cultural esteem in which opera is held raises this to the level of a pathology; one questions one's own experiencing of the show in the midst of experiencing it - "am I watching correctly?", "am I listening correctly?" and, above all, "am I understanding this?"

For the most part, these are the wrong questions: the Royal Opera House's production of the Magic Flute is entirely immediate. The plot, where it exists, is simple: the prince Tamino (Daniel Behle) must rescue the Queen of Night's daughter from her kidnapping by the rationalist high-priest Sarastro (James Plott, providing a dirge-like bass), but both find his ideals of sufficient calibre that they choose to bear the trials that will lead to membership in his community and, by extension, their marriage. The bird-catcher Papageno (a tremendously physical Peter Kellner), the rustic id of the opera, accompanies their ordeals and steals all the best lines. This is the 10th revival of McVicar's production, and its status as an inveterate crowd-pleaser appears unlikely to change; as a warning to the Covid cautious, I



failed to spot a single vacant seat.

It's not hard to figure out why. The music is uniformly excellent, with Aleksandra Olczyk's Queen of Night singling herself out for praise. The sets are of a sufficient scale to impress, albeit rarely sublime (the colour-scape of the night sky is a noticeable miss, though the morning sun, bleeding out in poppy yellow, appears to great effect in the closing scenes - think a defrocked Olafur Eliasson). On the whole, the production is fundamentally light, which aptly suits a libretto so concerned with illumination.

And yet, if light will provide the defining moral - and, thereby, aesthetic - triumph of the singspiel, it will also inevitably cast some uneasy shadows through an audience in darkness. Of course the inevitable sexism

is obliquely defanged through the staging, and the production - as is customary - elides any issues Sarastro's black slaves might bring by simply making them white; it's the central enlightenment victory instead that sits so awkwardly. The fundamental symbolic regime is of order taming chaos - reason prevailing upon ignorance, music taming wild beasts - but the same world that inevitably drove people into watching this production inevitably comes in too; with an eye on it, the faith in rationalism that characterises the opera appears less optimistic than simply naïve - perhaps more seriously, it fatally neuters the drama of the final trials. But this is all beside the point; you don't go to the Magic Flute as an intellectual exercise. You can exult reason all you want, but sometimes it's better to just not think.

Theatre

Romance in a Real-Life Nazi Summer Camp

Camp Siegfried



Where? Old Vic
When? Until 30th October, 2021
How much? From £10

Reviewed by Shivani Gangadia Arts Writer

In more blunt terms, this is a camp where young people are taught to embrace fascist Nazi ideology, and is based on the real-life former Camp Sieg-

fried. Writer Bess Wohl was intrigued by its origin after spending time nearby during the pandemic, and learning of a place where children lived on Hitler Street. Flower beds were planted like swastikas, and teenagers were encouraged to 'socialise' to create pure German offspring. It sets the scene for an interesting dialogue on how light-hearted summer fun and romance hides a dangerous programme of indoctrination. So subtle is the messaging that, as an audience member, it is easy to mistake the, in hindsight, obvious signs. Both characters are susceptible to extremist ideology in different ways. Awkward and bookish, Her (Patsy Ferran) just wants to be accepted, whilst Him (Luke Thallon) wants

to be a part of something bigger — both impulses that ultimately make them vulnerable to radicalisation.

The historical context creates the potential for a powerful story but, whilst there were many captivating moments and the subject matter was interesting, there were times where Wohl's plot left something to be desired. Towards the end of the play the narrative flatlined. In an apparent effort to make serious points about the parallels between modern politics and current times, it loses itself as a drama; sometimes becoming too overt and on-the-nose with unnecessary references to Trump's 'Make America Great Again' slogan.

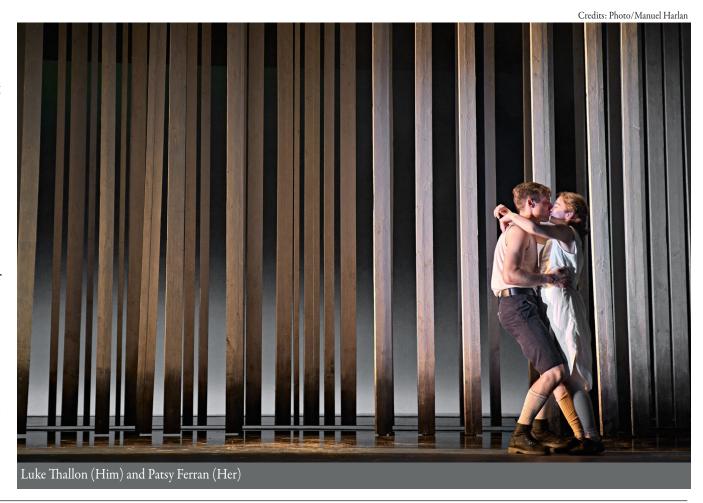
Despite this, there was never a moment where I

ARTS

genuinely zoned out, largely due to the stellar performances of Thallon and Ferran whose talent will keep you completely absorbed from start to finish, regardless of the dialogue. It's hard to make a play so engaging when there are only two actors on the stage. Olivier award-winning Ferran gave me goosebumps during the scorching monologue of Her's Hitler Day speech, and the way in which she develops character is complex and gripping. It is easy to see the mesmerising chemistry between her and Thallon.

The set design matched the tone of the play; however, it sometimes felt as though the stage was too large to be so empty. Perhaps the experience would have been better in a smaller space, more representative of both the senses of intimacy and claustrophobia developed through the play. Rob Casey's lighting is beautiful, particularly as the relationship between the two characters builds up. However, at one point the light is shined into the audience's eyes which I don't think anyone enjoyed.

Regardless of these minor points, I still highly recommend you see this production to, if nothing else, experience the range and depth of Ferran and Thallon as actors.



Theatre

A Psychedelic Performance Without the Shrooms

Mythosphere

Where? Stone Nest
When? Until 9th October, 2021
How much? From £8

Reviewed by Gurdip Uppal Arts Writer

here lies the boundary between reality and fantasy? Imagination and neuroses? Delusions and spiritual awakening? Most people may not instinctively turn to an 19th Century Welsh chapel to reflect on these philosophical questions. However, Inna Dulerayn's "Mythosphere" forces you to confront these existential questions in the comfort of a grand Presbyterian church.

Just off the buzzing roads of China Town, the Stone Nest was the perfect venue for this multimedia production. The grade II listed church, currently undergoing restoration after having been neglected for many years, with its stripped back walls and the eerily empty basement made it feel as though you had intruded into a secret underground cult. Conveniently, this felt intentional and in line with the style of the performance, and made you feel fully immersed until you left with the strange unease of seeing something you weren't supposed to.

The play is structured in two acts. Act 1 follows Edyta Budnik, playing a young girl who reads out pages of her childhood diary, detailing her experiences and beliefs about magic, and how this comes into conflict with her friends around her. Her monologues of feeling dejected and loss of magical powers are punctuated with enchanting operatic singing from a chorus of mystical birds. The acoustics of the chapel made the singing feel that much more transcendental, aptly setting the tone for what was coming up. However, at times the opera singing was excessive and failed to move the plot forward in any way.

The pacing of act 2 was much better where we instead follow a granny (played by Lucienne Deschamps) who is trying to find the line between what are her delusions and what she can trust from those around her. There is an R. D. Laing-eqsue exploration of medicalisation of mental illnesses as we listen to the granny narrate her narcotized morning routine prescribed by her therapist. We learn that the 'symptoms' which she was facing were really supernatural powers being blocked by modern attitudes against spiritualism.

There should be special acknowledgement of the



creative team who made the story come to life with projections of fantasy worlds onto a mesh screen in front of the actors, and the sound design crew who tied the entire atmosphere together. The avant-garde costume design by Anna Smirnova was truly breath taking and is something I shall never forget! Whilst the plot was incohesive and unnecessarily drawn out at times, the sensory experience of the show was truly remarkable thanks to the flawless execution from the creative team. 'Mythosphere' is an unforgettable show for many reasons, and is one that must be experienced first hand to be understood.

ARTS

Exhibition

Contemporary art — mixed up!

Mixing it Up: Painting Today



Where? Hayward Gallery
When? Until 12th December, 2021
How much? From £5

Reviewed by Vaidhiswaran Ramesh Arts Editor

ayward Gallery - for the uninitiated, sits on the southern bank of Thames (once home to yesteryear's avant garde), at the end of Waterloo bridge right along side its humble compatriots, the Royal Festival Hall, and the National Theatre within the Southbank Centre. Proud in its brutalist architecture, it flaunts its naked concrete at us while inviting us over to its latest exhibition — "Mixing it up: Painting today".

Billed as an exposition of contemporary UK painters; the exhibition brings together 31 remarkably talented artists under one roof; And through its serving of 130 exhibits, it offers everything to the viewer from abstraction to surrealism; oil on canvas to painted puffed rice and relief work; political commentary to moralism and more. Arranged in a vast gallery space spread over 2 levels, the exhibition achieves nothing better than it does in showcasing its variety - in form, narrative, context, medium and technique.

And the art works, clustered together by artists, is presented well to exposit this aspect right from the beginning. We are greeted as soon as well enter by the sharp fluorescent chromatones of Lubiana Hamid's "The Captain and The Mate". Two figures centre stage look straight ahead, with a focussed singular perspective on us; We are viewers to each other. Vivid use of shape lines and bright colours and contours that conveys a multi-dimensionalism to the painting. And almost in abject contrast - lies nearby work by Sophie von Hellermann, full of haze and dreamy motifs. In one painting, a German women, naked, runs away from a $British\, spitfire\, during\, WW2.\, Rendered\, by\, Hellermann$ with a neutral, more withdrawn colour palate, in contrast to the brazen bright colours of Hamid's work, it brings out the subtlety of the horror behind the painting without being over the top. And this variety set in tone between works only builds as one moves through the landscape - with each artist comes a completely new perspective, technique, and context to painting and the medium.

In Kudzanai-Violet Hwami's Biro, her 'western man' sits with brooding eyes against a backdrop of a colonial map of rural Rhodesia. Dressed in a suit, he drinks from an Bira looking ahead, the pain in his eyes - ours to share. The map in the backdrop is painted over by huge swathes of blue. The social commentatory on this is not lost – and again following the muted undertones



'Smoke and Mirrors" by Lisa Brice

of Hellermanns' work - contrast!

Next comes Jonathan Watering's series of couch paintings - photo-realist paintings of every day life. Brought about without an overt commentary - political or otherwise; Followed by abstract work by Hurvin Anderson and on and on...

These examples cited above are but only a few that highlight the rich landscape of contemporary British work that "Mixing it up" so masterfully juxtaposes. There is too much talent here in this exhibition to pursue discussion and discourse on each artist and painting. But this very breadth does beg the question — at what point is all this too much? After a plethora of paintings of variety; each ever so different from the last but just as meaningful - it does all tend to coalescese, blur... exist as one. And to be clear the number is the culprit here, not the art - and certainly not the artists. 31: why did the curators chose 31? Why not 30 or 20 or even 10 for that matter?

So what we have at the end of the day is an exhibition that has got all the right ingredients but fails to hit the perfect mark: Much like the brutalist architecture of the gallery that houses it — the breadth and brazenness with which the works are displayed here jars the viewer into submission by the end. However, despite the palette being this broad, with such quality one can forgive the proportions of the paint in the mix.

Stopping for a bit to collect my thoughts after this promenade, I inevitably found myself dragged to a painting by Luca Brice, overleaf Lubiana Hamid's "The Captain and The Mate", at the beginning of the exhibition. Featuring dark palettes of blue and red, a lady with a smoke in her hand peers through a half open door to either wave us goodbye, to share her a smoke or to greet us; all while a shrouded mysterious figure hangs around

the back. For equal measure, there was also a black cat perched comfortably across the threshold, screeching at us for presumably disturbing its quiet feline life!

Leaving the exhibition with this picture in mind, I'd like to think there is a story being told here, of the type told in hushed corners, featuring dimly lit quarters, smokes, felines, and the silhouettes of a women behind half closed doors. Perhaps not a story - must be a secret then!

So spare an afternoon (or a day) and knock on these concrete pillars, listen close to the lady, her cat, and the rest of her cohort – and I think they might just share that secret with you as well – listen close — (for as you might discover yourself) about just how much more there is to contemporary British art than Banksy!

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SCIENCE

Deep-sea mining: menace to the oceans or a new hope?

Jamie John Science Editor

n June of this year, Nauru, a small Pacific island nation about the size of Camden, informed the UN's International Seabed Authority (ISA) of its plans to mine the seabed in its surrounding waters. By doing so, it triggered a clause, giving the ISA two years to finalise the regulations governing deep-sea mining. Nauru is sponsoring a subsidiary of The Metals Company (TMC), a deep-sea mining enterprise, which intends to mine small potato-shaped deposits of metal, known as polymetallic nodules, from the seabed. If the ISA does not meet its two-year deadline, TMC will be allowed to proceed with its mining operations, with whatever regulations are in place by that

Proponents of deep-sea mining argue that it provides an environmentally friendly alternative to terrestrial mining techniques, and that, with demand for batteries and electronic components rising, we must inevitably look to the oceans for the metals which we so desperately need. However, many influential scientists and policymakers believe that too little is known about the deep sea, and that a more thorough review into deep-sea mining must be taken before venturing further.

It has become clear over the past few decades that if we as humans are to mitigate the impact of climate change, we must transition to cleaner, renewable energy sources, and redesign our energy, transport, and manufacturing systems. Wind turbines, solar and hydropower, and electrified transport all require large quantities of metals. Commodities such as copper, cobalt, manganese, and nickel are used in electrical components and most importantly, in batteries.

At present, these metals are primarily obtained from terrestrial mines, which come with their own problems. Take for example, cobalt. One of its main uses is in lithium-ion batteries. With the surge in electric vehicle (EV) sales, demand for cobalt is rising, and is likely to increase further as diesel and petrol vehicles are phased out. The World

Economic Forum has estimated that demand will increase by a factor of four in 2030, compared with 2019 levels. Over 70% of the world's cobalt supply is mined in one country – the Democratic Republic of Congo, where major concerns have been expressed about forced child labour, amongst other things. In 2019, 14 Congolese families filed a lawsuit stating that their children had been forced to work in the mines and had been killed or maimed due to hazardous conditions.

Additionally, land-based metal extraction can cause soil, water, and air pollution, and in humans, can cause a whole host of cardiovascular issues. The impact on local wildlife is also severe; gold mining in Brazil has led to increased mercury levels in fish. Whilst legislature exists to regulate mining in developed countries, the same is not always true in the developing world, where mines are often located.

This, claim proponents, is where deep-sea mining comes in. Polymetallic nodules contain copper, cobalt, manganese, and nickel, which, as stated earlier, are essential for batteries and electronics. Most deep-sea mining operations will work using what is known as a 'continuous bucket line' system:

- 1) Collector vehicles tethered to a large surface ship scour the seabed, removing the top 10-15cm of the seabed and collecting the nodules (metal deposits).
- 2) Pipes attached to the vehicles transport the nodules to the surface vessel, where they are separated from the sediment.
- 3) The sediment is discharged to the ocean.
- 4) The nodules are transported to the shore, where they are processed.

Deep-sea mining companies claim that the process is not only necessary, but critical, to fulfil the demand for batteries required for the transition to clean energy. According to MIT, the region of ocean between Hawaii and the mainland USA alone contains "around six times more cobalt and three times more nickel than all known land-based stores".

The companies argue that the sooner we start mining the ocean depths, the better. TMC, which is working with Nauru, through its subsidiary, Nauru Ocean Resources Inc. (NORI) says that "unlike land ores, [nodules] don't contain toxic levels of heavy elements and producing metals from nodules generates 99% less solid waste, with no toxic tailings."

Many scientists are, however, sceptical. The claim of no toxic tailings is hard to verify, but many scientific reports are to the contrary. A multidisciplinary research project, known as MIDAS, found in 2016, that it was difficult to predict resource toxicity in advance, and that mineral deposits would have to be assessed independently to determine toxic risk. However, what is highly likely is that deep-sea mining would alter the ecosystem of the deep sea, potentially resulting in a loss in biodiversity. The sediment, discharged from surface vessels could disperse far and wide, and create standing midwater plumes. Combined with light and sound pollution, this could severely affect marine life. Furthermore, the ocean acts as a carbon sink, and the impact on deep-ocean carbon storage is unknown.

Looking into existing research, what is most clear is that the precise impact of deep-sea mining is ambiguous. This is both because the technology for deepsea mining is relatively new, and because the depths of the ocean are still being explored. It is for this reason that many scientists and conservationists, including figures such as David Attenborough, are against it for the present time. 571 marine experts and policymakers have signed a letter calling for a temporary moratorium on the practice until scientists have had time to rigorously determine its impacts. Accompanying them, BMW, Volvo, Google, and Samsung have also pledged to exclude minerals sourced via deep-sea mining from their supply chain, much to the disdain of the mining companies. The UK's current official position is aligned with this too.

In the meantime, the ISA have already issued 31 fifteen-year contracts for deep-sea exploration. There is still some time before deep-sea mining happens in practice; in addition to finalising the regulations, exploitation licenses must be granted to contract holders. This process could take two to three years, in addition to the two years for regulations to be drafted. Even in this time, it is not possible to fully explore the potential impact of deep-sea mining on the seabed and its ecology. Whether a moratorium is agreed, or the ISA pushes ahead with its regulations, it is clear that the decisions made by policymakers will be hugely important and have long-lasting effects on our planet and our transition to renewable energy.

Photo credits: Nicolas Geiseler Torar



SCIENCE

A brief introduction to AlphaFold

In July earlier this year, the code, methodology, and database behind AlphaFold, the protein prediction AI software developed by DeepMind, was made open source through the publication of two articles in Nature.

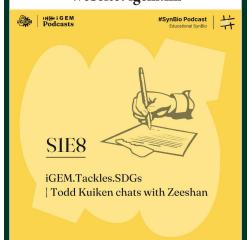
AlphaFold is a major advancement in the quest to predict a protein's structure from its sequence alone. In nature, proteins reliably fold into precise 3D conformations that is critical for its function based on nothing more than the sequence of amino acids that it is composed of. In fact, mutations in proteins that lead to misfolding are often associated with disease states, for example, Alzheimer's and Parkinson's. However, we have not been able to understand this folding process nor predict the 3D shape of a protein based on its sequence alone.

Although we have currently found sequences for millions of proteins, we have only solved the structures of about 180,000 of them. Structural biology techniques have been developed to solve structures experimentally: x-ray crystallography, nuclear magnetic resonance, and cryo-electron microscopy. These methods involve large amounts of trial

This Week's Podcast #Synbio by iGEM

In the latest episode of iGEM's #SynBio, we discuss how hundreds of iGEM teams around the globe are tackling the UN SDG's. As well as the intense, controversial and hopeful conversations taking place at the UN and within the convention of biological diversity.

Website: igem.fm



and error and have been limited in the complexity of proteins they can be applied to. Outside the lab, computational methods have been developed to predict how a protein may fold based on its sequence to bypass the experimental resources. However, these traditionally relied on using templates from experimentally-solved structures, which then imposes the same limits on the range of proteins they work best for.

AlphaFold 2, which uses deep learning algorithms to predict structure to atomic accuracy (within 1 Å or 0.1 nm of error), has been the most successful computational approach so far. In brief, AlphaFold operates with three main parts. The first involves constructing an initial model for which amino acids may be in contact with each other in the folded protein. Second, it uses a machine learning method called attention to interpret which parts of the model are informative, it takes the informative parts of the model to reconstruct an improved model for amino acid contacts, and the improved model is reinterpreted. This process occurs iteratively for a number of cycles, then the final improved model is fed through the third part which produces the 3D model of the protein. The software will feed the predicted 3D structure back into the second step, and this loop occurs several times for the model to be refined.

The final output of AlphaFold is a file containing the 3D coordinates for every non-hydrogen atom in the protein. It also outputs a graph showing the confidence levels for every amino acid residue, which allows users to assess the reliability of the predicted structure.

AlphaFold is an outstanding contribution to the field of bioinformatics. In the most recent blind assessment of structure prediction software (the CASP14 initiative), it significantly outperformed competing approaches. It is considered to be the closest we've gotten to solving the structure prediction problem.

Read future issues for a more indepth analysis on the success of AlphaFold and its impact

This week in Science...

FROM IMPERIAL...

Cheap new ventilator developed by bioengineers to address worldwide shortage

A group of bioengineers at Imperial, led by Dr Joseph van Batenburg-Sherwood, have developed a low-cost ventilator that aims to address ventilator shortages in low-and-middle income countries. Their design incorporates on-off valves that are more widely available than the proportional valves that commonly found ventilators use, and have engineered a method for accurately controlling them.

AROUND THE WORLD...

Science Nobel Prize laureates announced

Chemistry: Benjamin List and David MacMillan "for the development of asymmetric organocatalysis"

Physics: Syukuro Manabe and Klaus Hasselmann "for the physical modelling of Earth's climate, quantifying variability and reliably predicting global warming", and Giorgio Parisi for "for the discovery of the interplay of disorder and fluctuations in physical systems from atomic to planetary scales."

Medicine/Physiology: David Julius and Ardem Patapoutian for "explaining the molecular basis for sensing heat, cold and mechanical force, which is fundamental for our ability to feel, interpret and interact with our internal and external environment."

BepiColombo, Europe and Japan's joint mission to Mercury, returns its first photos

The European Space Agency (ESA) and Japan Aerospace Exploration Agency (JAXA) spacecraft BepiColombo conducted a flyby around Mercury on Oct 1st, during which cameras took 53 images of the planet from 1,000 to 93,000 kilometers away. BepiColombo also contains a magnometer which has been used to make measurements of Mercury's magnetic field, which has previously defied expectations in its strength and shape.

Chicken-sized "chief dragon", the UK's oldest meat-eating dinosaur, is identified

The dinosaur, named Pendraig milnerae after the Middle Welsh word for "chief dragon", was first excavated in a Welsh quarry over 50 years ago, but was only identified this week. Like the T-Rex, Pendraig milnerae was a theropod, and roamed around on two feet, with a chicken-sized body and a one-metre-long tail. It is believed to have been alive over 200 million years ago, in the Late Triassic period, and inhabited an island archipelago in what is now the Bristol Channel. After being lost, the fossil was found by the late Angela Milner in a drawer, alongside crocodile material.

Tough, mollusc-inspired glass developed, with greater strength and fracture-resistance than conventional materials

Researchers at McGill University have developed a new type of glass that is "three-times stronger than the normal glass, but also more than five-times more fracture resistant" and has "the resiliency of plastic". It is inspired by the natural material nacre, also known as mother of pearl, that forms the inner shell linings of molluscs.

Edited by: Monami Miyamoto

ENVIRONMENT

How do nature-based solutions

View online here!



conbribute to the sustainability puzzle?

Photo: Jonathan Kemper on Unsplash

Monami Miyamoto Environment Editor

n last week's article, we covered **▲**the basics of the IPCC report and COP26. One of the main topics to be discussed at COP26 is nature-based solutions, defined by the IUCN as "actions to protect, sustainably manage, and restore natural and modified ecosystems that address societal challenges effectively and adaptively, simultaneously providing human wellbeing and biodiversity benefits". This essentially means protecting nature as part of the global transition towards a more sustainable way of existing.

In recent years, there has been a lot of focus on carbon reduction and climate change when it comes to sustainability, but that doesn't cover the whole picture. The United Nation's 17 Sustainable Development Goals (SDGs) includes 'climate action' (Goal 13), whilst also covering 'life below water' (Goal 14) and 'life on land' (Goal 15). These last

two goals focus on the conservation, restoration promotion our world sustainable and of of aquatic MUST NOT ONLY use leaders of the G7 BUT ALSO NATURE farm met in Cornwall earlier this year to POSITIVE discuss the state

of our natural world and came up with the 2030 Nature Compact, from which a key conclusion was that "Global system-wide change is required: our world must not only become net-zero but also nature positive, for the benefit of both people and the planet, with a focus on promoting sustainable and inclusive development. Nature, and the biodiversity that underpins it, ultimately sustains our economies, livelihoods and well-being - our decisions must take into account the true value of the goods and services we derive from it. The lives and livelihoods of today's youth and

future generations rely on this."

By looking into nature-based solutions that protect our ecosystems, we can find approaches which not only mitigate climate change but also enhance food economic development, biodiversity, soil health and more.

A great example of this is regenerative agriculture. When it comes to providing enough food to support our growing global populations, there are many innovative technological solutions such as urban vertical farms, cell-cultured meat and AI-powered agricultural approaches, just to name a few; but if these solutions are 'futuristic', regenerative agriculture would be akin to reverting to old ways of farming.

Farms that practise regenerative agriculture adopt traditional methods of growing food that works with nature - not against it. There's no prescriptive way to do this, but in practice, some common approaches include minimising chemical inputs into the soil, increasing

the diversity of crops, reducing soil tillage, getting animals on land to encourage grazing and natural fertilisation of the and terrestrial ecosystems. In fact, BECOME NET-ZERO land, using cover ecosystems and recycling waste compost. As a result, these farms end up with healthier soils,

an abundance of wildlife, cleaner water systems and a piece of land that can effectively sequester carbon. It's not just about farming in a way that doesn't damage the ecosystem but extending further to benefit the environment.

Despite regenerative agriculture and other nature-based solutions having sound theoretical reasoning for implementation, many sceptics question whether nature-based solutions can be just as efficient or productive as the existing systems in place. Of course, there's no guarantee that a farm that switches from growing a monoculture of



corn by spraying tonnes of pesticide and fertilisers can immediately produce the same yield or more, right after switching to regenerative agriculture. But the whole point of nature-based solutions is shifting from short-term thinking and an emphasis on productivity alone to long-term sustainability and ecosystem protection. Even if the inherent value of sustainable practices isn't incentivising enough, a recent study by the Soil Health Institute looking at 100 crop farmers in the US found that regenerative agriculture approaches of using cover crops and reducing tillage had profound economic benefits for farmers. They reported that net income grew by 85% of corn farmers and 88% of soybean farmers, who earned \$51.60 and \$44.89 per acre, respectively. Not to mention that 100% of the participants in this study found improved water quality, and 83% reduced their need for fertilisers. Studies like this that provide clear evidence of the business/economic case for nature-based solutions will be all the more crucial in the coming

years for incentivising the adoption of sustainable, holistic practices.

On the topic of making the business case for nature-based solutions, in the corporate world, recent years have seen the rapid adoption of the TCFD (Taskforce on Climate-related Financial Disclosures) framework, which guides companies to think about the implications of climate change on their business as well as opportunities to mitigate these risks. Now, companies at the forefront of sustainable operations are beginning to consider the TNFD (Taskforce on Nature-related Financial Disclosures) framework, looking at the broader picture of how their businesses may be affected by the deteriorating natural world and how they can do their part to improve it.

The dialogue is finally extending from just carbon-focused conversations to looking at sustainability through a more holistic angle. Nature-based solutions will only become more important as we prepare for the COP26.

ENVIRONMENT

Is that really a sustainable alternative?

Monami Miyamoto Environment Editor

Green-washing is a term that most of us have come across at one point or another. It's a practice that preys on people's good intention to be sustainable, when the product or service being sold isn't actually beneficial to the environment - at least not when considering the big picture. In fact, green-washing is more common than we think, and even the most popular sustainable alternatives have a deeper dimension that needs to be considered if we want to make truly sustainable choices. Whilst no product has a perfect profile in terms of environmental impact (everything has some impact), here are a few items that intuitively might feel like better options but require a more critical analysis:

1. ALMOND MILK

In recent years, there has been an ever-expanding range of plant-based dairy alternatives, from soy milk, oat milk, rice milk, coconut milk, cashew milk, hazelnut milk and more. Amongst these is almond milk, one of the more commonly seen options on the menu boards of coffee shops. However, whilst almond milk performs better in terms of LCA's (life cycle analyses) of GHG emissions compared to dairy milk produced under industrial farming practices, in terms of water usage, it's bad news. Many studies have found that almond milk uses more water, with

some citing values of up to 17 times purchasing bamboo-based fabric, more than cow milk per litre, whilst others point to specific figures of 307L per 48oz compared to 175L for the same amount. Besides the considerable strain put on water usage, the process of manufacturing the milk from the nut leaves a by-product of almond pulp which is currently not reused for any other purposes, resulting in huge volumes of waste.

2. BAMBOO FABRIC

Many apparel brands have been touting their use of bamboo fabrics as a more sustainable fabric, especially when compared to cotton, one of the most pesticide-laden crops. Bamboo does have many unique properties that make it environmentally friendly (such as not requiring any fertilisers and being highly renewable due to its fast growth). However, the process of converting the plant into its textile form is not only highly energy-intensive if done mechanically, but that in cases where chemical processing is required, harsh toxins leak into the surrounding environments, which often tend to be countries much removed from where the final products are purchased. Another issue with bamboo is that China is the predominant producer of this crop and because that makes it such a lucrative industry, farmers often grow monocultures of bamboo, which in turn has implications for biodiversity and habitat loss. If you're considering

pay attention to how transparent the company is about where its bamboo comes from and whether there are any credible certifications for it.

COCONUT OIL

When it comes to oils, palm oil has often been the villain, with alternatives like coconut oil taking the spotlight for not just cooking but beauty-related uses too. However, one study argued that coconut oil might be worse than palm oil with regard to biodiversity impacts. Authors found that 1 million tons of coconut oil production threaten 18.3 species on the IUCN Red List compared to 3.8 for palm oil. This is because coconuts tend to be grown on tropical islands, which are typically biodiversity hotspots containing many endemic species. This finding has sparked huge debate, and it doesn't necessarily mean palm oil is 'good' because in absolute numbers, palm oil still threatens more species than coconut oil (the prior covers approximately 18.3 million hectares of land whereas the latter is 12.3 million hectares), and large scale monocultures are highly damaging regardless of what the crop is. But the authors wanted to highlight that coconut oil isn't all that innocent either and that more data is needed for consumers to make balanced

choices not just based on impressions from the media.

The point of this article is not to say that you should never use the products listed. Instead, the aim is to highlight the complexity and multi-faceted nature of assessing a products' environmental impact and understand that we have to be more critical when it comes to products labelled 'sustainable' - even the most common ones. Ultimately, we are voting with our consumption choices, and even though there is no such thing as a 'perfect choice', it's worth checking to make sure that your vote is going where you want it to.





PODCAST RECOMMENDATION

Red to Green

source for learning how food nitely worth checking out. can play a significant role in transitioning to a sustainable future. Each season focuses on different topics such as cultivated meat, the future of farming, and food waste, with experts who help dissect the problem and solution. Each episode is roughly 30 min-utes and offers a deep dive into the complexity of changing our current food system but also provides hopeful in-

The Red to Green Pod-sights into how the landscape cast is an excellent re-is shifting rapidly. Defi-





Photo: Joyce Romero on Unsplasih

LAST WEEK'S ANSWERS

PUZZLES

REGULAR Crossword O B E L I S K Т T 0 OLAF N Y M I S E R Y L G C U R T M W E R U Н A G A D E N I H O N Е 0 R I D I O M S PURL Α

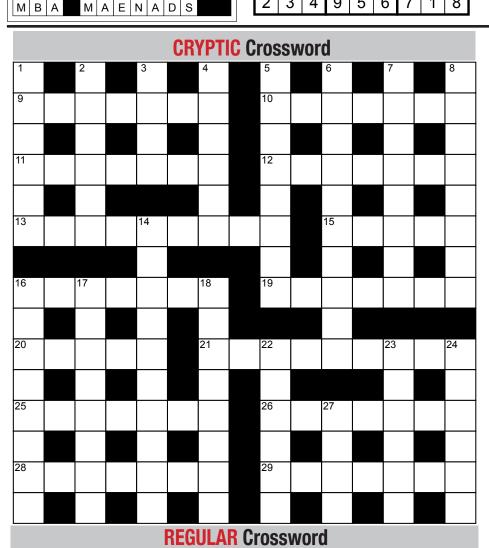
8 3 2 9 5 9 8 4 1 7 6 2 3 1 7 2 9 3 6 5 8 4 6 2 8 1 5 3 4 9 7 3 4 5 7 9 1 8 6 2 7 2 9 6 4 8 5 3 1 8 5 6 7 2 3 4 9 1 7 2 9 3 8 4 5 1 6 2 3 4 5 7

Sudoku

Puzzles Notice

No leaderboard yet! We're letting you all get nice and warmed up before the real competition begins (and also access to certain email inboxes is a little problematic - please lobby your DPFS if you are upset by this)

P.S: We are still looking for editors and writers!



A cross

- 9. A friend you rightly call a rookie. (7)
- 10. Peninsula being one answer to a brainteaser. (7)
- 11. Ruler got the guy to make it. (7)
- 12. Clerk less like plastic? (7)
- 13. She can wear it, now she's old enough.(9)
- 15. One contests "they're creeping up!". (5)
- 16. I argued endlessly for that last sausage.(7)
- 19. Where criminals often hang out. (7)
- 20. He's in the mall and overspending. (5)
- 21. Force taking the news out of print. (9)
- 25. Instrument of God one uses to make Italian food. (7)
- 26. Intolerant person? (7)
- 28. Tolkienesque drafts might get you in a twist. (7)
- 29. She's my rock! (7)

Down

- 1. Nut you chew when inside. (6)
- 2. Sprinted to the ministry, going up without warning. (6)
- 3. Girl in Silicon Valley has a truck. (4)
- 4. Gee, that singer is a real tourist! (6)
- 5. Canine keeping them in check? (8)
- 6. Place where war comes above all else, and a few lies are compounded. (10)
- 7. Proliferating sin in half-Asian. (8)
- 8. Layers in Spanish cape cover impurities. (8)
- 14. Use new red German bovine in production of poison. (10)
- 16. Escapade with the English at this time of yearwhat silliness! (8)
- 17. Restore vote near party. (8)
- 18. Rides made of nothing but cables. (8)
- 22. On my heart, I say, I need another! (6)
- 23. Ring that heartless privateer to give the drug.(6)
- 24. It's sweet, flowing canter. (6)
- 27. Simply get to the point, but revise the last part. (4)

This grid can be filled out using the cryptic clues or the regular clues!

THEME: CITY TOUR

ACROSS

- 9) Idealised form for lift. (7)
- 10) State of lawlessness. (7)
- 11) Be in opposition. (7)
- 12) One all about the self. (7)
- 13) Board here, and load up sufficiently...(9)
- 15) Hobble your extravagance. (5)
- 16) One who gives a new lease of life. (7)
- 19) Type of blossom. (7)
- 20) Genre of which 'nova' is a descriptor.(5)
- 21) ...change here to pick up calciferous produce... (5 4)
- 25) Servitude. (7)
- 26) Big daddy in Rome. (7)
- 28) Darkening chemical. (7)
- 29) Goblet. (7)

DOWN

- 1) Cuts open, as a boil. (6)
- 2) 'Plebs' simpleton. (6)
- 3) Blemish with high concentration of 28-Ac. (4)
- 4) Swindle. (6)
- 5) ...alight here to wash and use the toilet...
- 6) ...get off here for Pachelbel's favourite lawn... (64)
- 7) Marking, or writing. (8)
- 8) Uncomfortable disease. (8)
- 14) ...it sounds like we're being held up at this next tourist destination... (37)
- 16) Protein builder. (8)
- 17) Extremities of the olfactory system. (8)
- 18) ...exit here for an affluent area. (8)
- 22) At an extreme level. (6)
- 23) Scandinavian girl's name, variant of that of Gilberto. (6)
- 24) What people do at brilliant things. (6)
- 27) Bog matter. (4)

Sudoku

3		7		တ		6		1
								7
	5					3		2
4				1	5	2		
		9	6	8				5
9		1					8	
5								
2		8		4		9		6

THANKS TO STANLEY SCOTT FOR THIS WEEK'S CROSSWORD

14 Felixonline.co.uk

CATNIP

DISCLAIMER

This section used to be called Hangman, now it's called Catnip, get over it

Huge Brady - Imperial's President-designate spotted pumping iron in Ethos gym

Anton Briggs NegaFelix Reporter

The following piece is written from the perspective of Felix reporter Anton Briggs.

The greatest secrets are always hidden in the most unlikely places, and this couldn't be more true for the Imperial College Leadership. I scanned into Ethos gym last Sunday, still mic'd up, of course, wearing my trademark head to toe lycra I always wear when working legs.

I was half way through my warm-up cartwheels when from the corner of my eye I saw a silver fox pushing some impressive weight. As I righted myself and pulled the lycra mask away from my eyes, I realised I was looking at Hugh Brady, President-designate, dripping like Niagara as he bicep curled

150kg in each arm.

Slightly awestruck but ever a professional, I tapped my mic to check it was working, winced from the feedback, and strolled over to ask Brady a thing or two about his plans for Imperial College.

I arrived just as he was finishing his set. "124, 125, done" he muttered, and dropped the weights directly onto the toes of a nearby fresher as he looked up at me. "What's up?" he asked, apparently unperturbed by the screams of "why the fuck did you do that?!" and "oh no, my toes, my beautiful toes".

"Hi Hugh, Anton from Felix, pleased to meet you. What's your main goal within the first 2 years of your presidency of the College?" I asked confidently.

"Mental health, always mental health" he replied without pausing for thought, then got up and wandered over to the bench press.

"Are you worried about filling shoes as large as Alice Gast's?" I called out after him. Hugh arrived at the bench, slotted himself underneath the bench, and began pushing it upwards, along with the rugby player pressing 140kg who was already using it. At the peak of his second rep, he cocked his head to look at me again and responded.

"Not at all. My feet are way bigger than her's, we already measured". Accepting that my analogy had rocketed over his head, I turned away with a wry smile, pleased with the dirt I had uncovered and eager to report back to the studio.

And that's all from Anton today. We don't really know what he meant by that last bit, and he has, again, not come back to the studio since sending that in. Anton please come back.



ARIES

This week CoughSoc's annual "Cough in my mouth" freshers event goes ahead as planned



TAURUS

This week you sleep with Medusa and finally feel like you can stop with the Viagra



GEMINI

This week you buy a Peloton and don't tell anyone about it - another first for the history books



CANCER

This week you're the fluid and your crush has a Reynolds number of less than 2000



LEO

This week campus security doesn't buy that you're on campus naked just to be "more sustianable"



VIRGO

This week you blow your consultancy interview by suggesting that KPMG stands for Ket Pills Mandy Gear



LIBRA

This week you see the bar staff replacing the Prava keg with a vat of milk - part of a conspiracy that goes all the whey to the

top



SCORPIO

This week your friends prank you again by encasing your bike in agar whilst you're in a lecture



SAGITTARIUS

This week you throw your clotrimazole in the bin and decide to make homemade sourdough



CAPRICORN

This week you try to beat your paper cut with a scissors cut - the rock cut is next



AQUARIUS

This week you actually read Felix cover to cover like a weird nerd



PISCES

This week, as a proponent of high tax and market regulation, you defect to the Tories

QUOTE OF THE WEEK

"Freedom of speech does not protect you from the consequences of saying stupid shit" - *Jim C. Hines*

Welcome 2021...IT'S ON!



BBQ & Inflatables

SATURDAY 9 OCTOBER 2021 | 12:00 - 16:00 | Queen's Lawn

Is there anything better than a bouncy castle? Maybe a bouncy castle with a BBQ! If you've got your ticket, on the 9th October head to Queens Lawn to have a go on our giant inflatable course, and enjoy some yummy food.

It's going to be the perfect end to an incredible week of events - we can't wait to be impressed by those balancing skills!



Bottomless (drag) Brunch

SUNDAY 10 OCTOBER 2021 | 12:00 - 14:00 & 14:30 - 16:30 | FiveSixEight, Beit Quad

We'll be rounding off our Welcome Week celebrations with some pretty wild entertainment – bottomless brunch hosted by a legendary Drag Queen!

It promises to be a wild afternoon, with endless prosecco/vodka punch/beer/wine/soft drinks on tap, and of course a delicious all-day breakfast, including vegetarian options.



What to Expect From a Career in a Hedge Fund

TUESDAY 12 OCTOBER 2021 | 18:00 - 20:00 | Location TBC | Women in SET

We will be speaking to representatives from Marshall Wace, a hedge fund based in London! Come and speak with their staff who will discuss the various roles available at Marshall Wace from Quantitative Research to Technology roles.

They are actively recruiting for summer internships and graduate roles, so will be the perfect opportunity to network! This talk is suitable for anyone, regardless of your familiarity with finance and hedge funds - see you there!!



October Show

WEDNESDAY 13 OCTOBER 2021 | 19:00 | Union Concert Hall | DramSoc & MTSoc

An evening of drama and laughter - The first half is An Angel in Islington - an original comedy about an angel that comes down to earth to fix an embarrassing mistake before it's too late - performed by DramSoc, followed by a short break. The second half of the show is an original musical - Mortemax - performed by MTSoc in which a child, who so happens to be able to speak to dead people, goes on a journey full of surprises to get a last final chat with their recently departed father.

There are three show nights: Wednesday 13th, Friday 15th and Saturday 16th October. Doors open at 19:00 and show starts at 19:30.

Tickets are available on the Union shop or at dramsoc.org/shop. If buying a student ticket, don't forget to bring valid student ID with you.

More info & events: imperial college union. org/whatson



Take charge of your Imperial experience

BECOME A REP!

Stand for one of these positions:

Academic Representative
Constituent Union Committees
Wellbeing Representative

CSP Committees
Representative to Council
Liberation Network Committees

Nominations close noon, 12 October. Voting opens noon, 18 October.

imperialcollegeunion.org/elections



Edited by: Eva Borras

Deep Dive

Horace Ové:



Director of Britain's first Black feature film

UNDOUBTEDLY A

Eva Borras Film Editor

hroughout the '70s, British director and writ-L er Horace Ové became one of the leading UK Black filmmakers, as his film 'Pressure' was the first feature directed by a Black person and, controversially, held back for two years before its eventual release to widespread critical acclaim. Years later, The British Film Institute (BFI) mentioned in its documentary 100 Years of Cinema: "Horace Ové is undoubtedly a pioneer in Black British history and his work provides a perspective on the Black experience in Britain."

'Pressure' is a 1975 feature-length film telling the story of Tony, a second-generation Black British teenager living with his family in London. Every member of his family was born in Trinidad except him and therefore the movie explores the difference in their views of the community they live in. Shot in a documentary style, Pressure focuses on the social dynamics felt between first and second generation immigrant families in the 70s London as each individual struggles to find its place in a society ruled by the white English. In this Black coming-of-age movie, there is a disconnection between what the protagonist feels as being born and raised in Britain and how he is treated by his surrounding environment. For instance the fact that during the film his white friends have all gotten jobs while he's being frequently passed over and unsuccessfully chosen

as the candidate to work. Or similarly, as the movie progresses and he follows his older brother into the HORACE OVÉ IS Black Power movement, he witnesses with his own eyes the oppressive force of PIONEER IN BLACK the police whenever a Black person questions and calls BRITISH HISTORY AND out the racist system they live HIS WORK PROVIDES A in. Director Ové successfully captures a raw story of a theme PERSPECTIVE ON THE not very popular within BLACK EXPERIENCE IN the British film industry, as looking back through BRITAIN the films there is barely any

representation of black culture and its community. It film. However, the director revealed his faith in is important to highlight that despite it being almost possibly completing the feature nearly 30 years later. 50 years since the film premiered, some of the issues



and arguments portrayed in Pressure are still relevant to this day. It is definitely an emotionally impacting film for the audience but it is for sure a must watch.

Unfortunately, it was not an easy path that the director had to take in order to develop his career and have a name in the industry. In a recent interview with BFI, Ové explained his unsuccessful experience trying to direct his first film, 'It's a very surreal film, but

> unfortunately I never finished it' he explained after he tried to raise money with friends and colleagues to make it on his own. It was called 'Man Out' and it explores the life of an unemployed West Indian novelist and their struggle to continue writing even without a job. The reasons he gives for this is the fact that 'firstly, I was a Black filmmaker, secondly, the subject was too obscure for the early 60s' and therefore could not get enough funding for the completion of the

Ové's next film was in 1970, a documentary

outlining the experience of an underground music genre called 'Reggae'. In an interview with BFI, Ové explained how he got inspired to create this film - he realised reggae was being played in shebeens but hardly played on the radio so he therefore found a Jamaican record producer like himself in film - and with its financial help produced the film. It was actually the first feature-length film financed by Black people in Britain shown by the BBC and very successful in cinemas.

Other features directed by Ové include a 1978 documentary called 'The Skateboard Kings' about pioneering Californian skateboarders. The importance of Horace Ové as a filmmaker lies in not only the fact that he was the first Black director to break into the mainstream, but also the fact that he still remains having a political voice and combines dramas and documentaries beautifully.

To this day, Horace Ové is a relevant icon for his groundbreaking role in the film industry. In the 2019 Somerset House exhibition in London called Get Up, Stand Up Now, his creativity and contribution were celebrated, with the organizer Zak Ové opening being "Horace Ové and his dynamic circle of Windrush generation creative peers, and extending to today's brilliant young Black talent globally".

Guide to London's Record Stores

Written by Rosie Millns Music Editor

If you are more worried about somebody stealing your record collection than your laptop, and have a pros and cons list of whether to buy that first pressing of MBV's Loveless or eat something other than baked beans for a month, London is the city for you. London's record shops are intricately linked with its music scene, with stores such as Sister Ray, Rough Trade, Next Door, and Banquet records regularly hosting gigs and DJ events, be it at local venues or within the record stores

themselves. The stores are little gems of music history and knowledge, where you can traipse the steps where Amy Winehouse used to shop for records or where Oasis shot their album cover for 'What's the Story (Morning Glory)?'; emporiums of music culture that have survived the waves of vinyl and retail's fall and resurgence, and that were instrumental in the formation of loved annual events such as record store day.

All Ages Records

Camden's All Ages Records is a sanctuary for punk and hardcore fans. The DIY store still sells cash-only gig tickets over the counter and has a plethora of stock from local up-and-coming bands. The walls are full of posters advertising gigs, and notices asking for band members - maybe you will see a sign that recruits the drummer for the next Nirvana.

You went to welcome fair. Go forward 15 squares to join the AMS record store and pub crawl





AMS RECORD STORE CRAWL

If you want to visit some of these record stores (and a handful of central London pubs) and meet some other people from Imperial who have strong thoughts about which King Gizzard album is best, make sure you don't miss Alternative Music Societies Soho record store pub crawl. The event is on October 16th and is free to come along to.

Third Man Records

Third Man is the newest addition to the London record store scene, having only opened on 25th September 2021. It is the third branch of the store founded by the White Stripes' frontman Jack White, and the first in the UK. The record store is full of weird and wonderful attributes, such as a vending machine that dispenses books with the use of Third Man tokens, and an intimate music venue called 'The Blue Basement'. Perhaps the most unique attribute is the recording booth where anyone can record music straight to vinyl. Third Man is worth the visit even for those who are not avid vinyl collectors, simply for the experience the store offers.

Honest Jon's

Honest Jon's is the oldest record store on this list, established in 1974 on Portobello Road. Alongside offering a range of jazz, blues, funk, reggae and soul records, the store also has a label of the same name founded with Damon Albarn. Store founder and sociologist 'Honest' Jon Clare founded the store in an old butchers' shop, and describes how suppliers of the butcher's would pay for jazz records in raw meat. Whilst they don't trade in beef anymore, you can still pick up a huge collection of secondhand jazz and blues LPs.

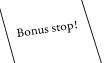
You completed the AMS record-store crawl! Move forward to Spoons.

Next Door Records

Next Door was opened just over a year ago after the first lockdown, just around the corner from Shepherd's Bush Market. It maybe fits better under the description as a trendy café-slashbar that happens to sell records, instead of a record store that also sells drinks, but nonetheless the store has a collection to suit all tastes. With a focus on danceable tracks, the shop frequently hosts DJ sets in-store, as well as pop-up restaurants and vintage clothes markets.







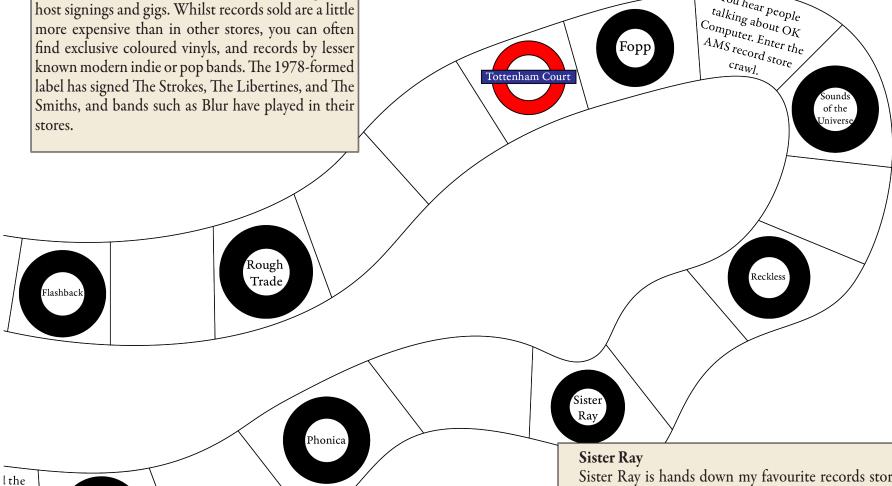
Sounds of the Universe

Along with Sister Ray and Reckless, Sounds of the Universe is one of the last remaining of the golden mile of record stores that once filled Soho's Berwick Street. The store opened in the early 90s, along with the Soul Jazz record label, and specialises in reggae, soul, worldmusic and jazz. Artists such as Prince always visited the store when in London, and the Rolling Stones held their first auditions the floor above where the store now stands.

You hear people

Rough Trade

Rough Trade is one of the most well-known independent record stores, with branches across the UK. Selling a breadth of indie records, the iconic 1976 store and label have two locations in the heart of Brick Lane and Ladbroke Grove, and regularly host signings and gigs. Whilst records sold are a little more expensive than in other stores, you can often stores.



Phonica Records

Man

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Phonica is perhaps an oddity in the record store scene. It opened in 2003, when vinyl was on a decline, and 80% of its stock are singles instead of LPs. The store covers a wide selection of genres, but is a go-to for dance, house and electronica. Lively in-stores and famous customers are the norm for this store, with regulars including Peggy Gou, Caribou, and Four Tet.

Sister Ray is hands down my favourite records store. Opened in 1989, the store has an eclectic mix of new and secondhand records. You might cry when you find a rare pressing of your favourite album that costs £100 (one day I will buy the Scott Pilgrim soundtrack from the Sister Ray basement), but you will not leave disappointed that you couldn't find what you were after. The shop hosts gigs with some of London's most exciting upcoming bands, and the staff may be some of the most knowledgeable people about music that you will ever meet.

Banquet Records

Whilst it is far out the way, no list of London record stores would be complete without mentioning Banquet in Kingston. It is a testament to the shop that massive artists (The Who, Stormzy, The 1975, Foals) play the store, often for album release shows.

Whilst the closure of the Hippodrome in 2017 ended a long-term partnership between the store and a local venue for gigs, Banquet regularly hosts gigs at local venues as well, predominantly The Fighting Cocks, and Pryzym. Of course, the shop also has a huge collection of indie and rock records for sale. The shop's logo, 'more than just your local record store', has never been so apt.

MUSIC

Don't miss the gig -Black Honey @ Heaven, 13th October

4-piece Brighton indie-rock band Black Honey return to Heaven

ON THE TOUR OF THEIR CINEMATIC SOPHOMORE ALBUM, WRITTEN AND DIRECTED. TICKETS ARE £14.85 ON DICE



Single of the Week

Everything's Not Lost by BYFYN

The newest single by Hertfordshire-based artist

BYFYN is a bubbly and fun ode to friendship

written during lockdown. Produced with

MenCare (PVA's Josh Baxter and Tina's Adam

Cartwright), Everything's

Not Lost is a contagious

pop song that has us

excited for what BYFYN

has in store next.



Today in Music History

RADIOHEAD'S KID A ENTERS THE UK ALBUM CHARTS ON 8TH OCTOBER 2000, WHERE IT STAYS AT No. 1 FOR TWO WEEKS.



BRITNEY SPEARS AND KEVIN FEDERLINE ANNOUNCED THEIR DIVORCE ON 8TH OCTOBER 2004, AFTER MARRYING 3 WEEKS EARLIER.

PINK FLOYD'S DARK SIDE OF THE MOON LEFT BILLBOARD'S ALBUM CHARTS AFTER A RECORD BREAKING 741 WEEKS.

Feature

Passing the Aux to Zhengli Lim

View online here!

Interview by Rosie Millns Music Editor

Every week Felix speaks to an Imperial student to find out what the Imperial community has been listening to. This week we spoke to the one and only Zhengli Lim, perhaps better known as Ribbon Guy.

What is the last song you listened to?

Freed From Desire – Happymen vs Gala (HSP Club Mix). I woke up and listened to it today.

Do you have any memories you associate with that song?

I first heard it in February 2020. I remember I was DJing an event with a friend for London International Model UN to over 125 countries in Convent Gardens. My friend played the song and I loved it. There were over 1000 people jumping up and down, it was such a good moment.

What is your favourite part of that song?

For me to like a song, it must have a good beat drop, an exciting build up that doesn't last too long to get boring, it must be melodic with vocals, and probably needs to have synths. This song has all of them. Most importantly, it is a song I can dance to.

You're stranded on a desert island and can only listen to three songs/albums for the rest of your life – go:

On my way – Alan Walker (Da Tweekaz remix) Levitating – Dua Lipa 1989 – Taylor Swift





You're at a party and someone passes you the aux. What are you putting on?

I Love It – Icona Pop (feat. Charli XCX)

Who is your guilty pleasure artist?

2000s era Hannah Montana Miley Cyrus

Who is your celebrity crush?

Taylor Swift – not just for the music, but because she is super authentic! She never says no to signing an autograph for fans. Even if there are 100 people, she will make her way down the line and sign all of them.

Bonus round: what is your favourite song to ribbon dance to?

It always changes and evolves, but right now it is Greatest Love of All by Whitney Houston (Club 69 mix)

Finally, any last words?

What I've realised as a DJ is each person has a different musical taste – no person's taste is exactly the same. That is something we should embrace. Just listen to whatever makes you happy!

INVESTMENT

EVENTS ARE BACK

VOLUME 2
EVENT LISTINGS PAGE

page 2

Edited by: Ahmad Danesh



Investment Society
Imperial College London

Virtual lectures? Pfft...

Let's do things the proper way.

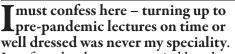
SEC Logo Design by Annie Szeto



It's only been 18 months and virtual lectures are already out of fashion -we're going to show that.

Ahmad Danesh

Investment Editor | Head of Editorial, ICIS



I preferred to be accompanied by a box of flapjacks from Sainsburys while browsing away during Reddit more often than not. Yet, I turned out fine so I guess it did work – and I vowed to never change that habit until some virus spread around the world in 2020 soon after.

Now, I know what you're probably thinking – sigh, what's this got to do with this article about (looks up)... virtual lectures? Well, I think that part and parcel of inperson lectures that everyone's missing is the character that we all used to bring to any 9am class at school or 10am lecture course. You make friends in the lecture theatre, not through Teams or Zoom.

How else are you meant to secretly tell them that you feel hungover after a night out at Tiger Tiger while the lecturer is deriving the ordinary partial differential of fluid mechanics? We all learn in different ways, and it's important that we let our natural personality shine through in a classroom or lecture hall setting as we interact with the lecturer and our peers to further our knowledge in the lecture of concern.

For that reason, the Investment Society in collaboration with Imperial College's Finance Society is bringing back the former's Securities and Education Certificate (SEC) in person, in order to provide the most authentic learning experience that we've all missed before Master Boris shut down the country in March 2020.

So, what is it about? Really, it's a course that covers the fundamentals you will need for a career in investment or finance. We cover everything from the workings of sales and trading to touching on quantitative analysis and the organisation of an Investment Bank. It's split into 4 lots of 2-hour

sessions, and they take place every Saturday at 10 am. It's designed to be an enjoyable learning experience no matter how much experience or competency you've picked up from exposure to the finance world – we guide you throughout the whole way and make sure that you understand every part of each lecture slide.

We've covered the 'what', so the next logical question is 'why'? Why does such a lecture course exist in the first place? Well, let's look at it firstly from a student perspective. Many of us are STEM students (alongside the business school cohort as well), and for many of us in question, Economics and Accounting terms are often alien in nature and in explanation.

When I first started trying to read into investment, I couldn't work out what a Discounted Cash Flow (DCF) was about. It felt like falling into a rabbit role just going from a DCF to a discounted rate to a cost of capital and so on and so on until I came full circle and pretty much found myself exactly where I started.

66,,

SADLY, GOOGLE IS MORE WASHED UP THAN THE CONCEPT OF IMPERIAL ATHLETES...

Investment isn't hard – it's badly taught. If you teach someone a concept in a terrible fashion, they'll always be terrible in their understanding no matter how easy the concept in question actually is. **That's what we've addressed in the SEC.** We're teaching you the technicals in a way that's clear to interpret and can also be understood by an 8-year-old.

The second reason is Google. I hate Google. No, actually – I was receptive to Google growing up as the search results actually gave me the answer to all the questions in my Maths and Science homework problems and it was, in actual fact, a very reliable search engine.

Sadly, Google is more washed up than the concept of Imperial Athletes – a broken, unthought framework that fails to deliver and only serves to frustrate the end user with widely inconsistent algorithms and terrible lack of consideration and disregard for the end user in question.

I cannot Google a single finance concept without having the same 3 websites show up in the first set of results... Why would I want them in my search window?! They're websites that don't deserve to be at the top. Even Wikipedia is a more understandable source, and it's probably written by a graduate with a PhD in the topic in question. I struggle to understand how Google always continually coughs up the most bland and incoherent articles for financial concepts rather than giving me a clear source that's written for the average end-user to understand.

What can we do as the Investment Society? We can make our own resources! Sod Google for all I care, the lecture course can be our way to cut through the horse manure and actually tackle the main concept at hand, without any waffle. Our lecture course really does teach you about both the finance and investment industries without having to rip your hairs out on Google or any other equivalent search engine.



To end, it's probably a good idea to tell you how you can sign up for the SEC. You can sign up on our Microsoft forms at investmentsoc.com/SEC. Fill out a few details about who you are, what course you do and a small bit of contextual data as part of our selection process.

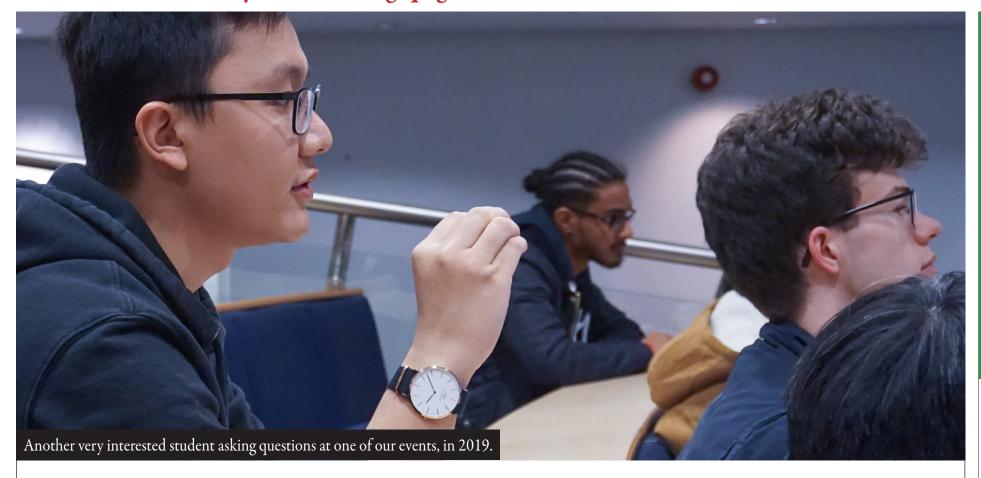
If you have any questions, feel free to email us at icu.investmentsociety@imperial.ac.uk and we'll be happy to help!

ON THE SUBJECT OF RESEARCHING INFORMATION, WHY IS GOOGLE GETTING PROGRESSIVELY WORSE?

This was the subject of an article on 'The Conversation', and it partly concerned Google's adamancy on maximising revenue from advertising and constantly fiddling its algorithm to optimise (i.e. improve) its search results. Websites are also cheating their way to the top of the results page, which doesn't help.

The Investment Society's event listings page – Volume 2

INVESTMENT



An introductory presentation to the Investment Society and our own QT Capital *Tuesday 12th October 2021* 18:00 – 20:30 **HUXLEY 308** / **311**

Freshers' fair is now passed, and it was definitely a wonderful experience to interact with everyone again in an in-person setting!

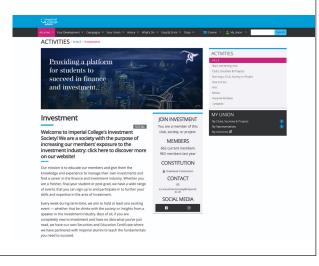
So, where do we go from here?

The Investment Society kicks off the year with an introductory presentation to showcase its projects, courses and programmes that you can get involved in! In and around campus, there's been mention of our new capital fund, QT Capital alongside our SEC course and our Systematic Trading and

Cryptocurrency workshops –we'll be mentioning them all in our introductory presentation next Tuesday.

If you still haven't signed up to the Investment Society, find us in the Union's A–Z listing (right). You'll be able to find us in Huxley (located in the Computing department) and network with the committee & fellow members.

Join us for good vibes (and the free food, hopefully!) – we hope to see you there!



SEC Lecture 1 16 Oct 2021 10:00 – 12:00 LOCATION TBC

And we are off (soon, anyway!)

The society's own lecture course kicks off next Saturday, in partnership with Imperial College Finance Society.

Please note, you must have registered by the 13th of October and have been accepted onto the course to attend. You can sign up at investmentsoc.com/SEC and fill out the form. Contact us on email for more information: icu.investmentsociety@imperial.ac.uk



Demystifying Chinese Investments with Chinese Alpha 19 Oct 2021 18:00 – 20:30 HUXLEY 308 / 311

The Investment Society will collaborate with Chinese Alpha to understand how to invest in Chinese equity. In this event, you will be introduced to Chinese macroeconomics, followed by regulation concerns and its unique VIE structure, and finally understand Chinese portfolio allocations and research methods.

Contact Ethan Cui (qc420@ic.ac.uk, see right) for more information.



An Introduction to AmplifyMe and the Finance Accelerator Simulation 27 Oct 2021
16:00 onwards

LOCATION TBC

Join Amplify on the 27th October to experience the same trading simulations used by the worlds leading banks to enhance your market awareness. Gain hands on experience of both the sell-side and buy-side giving you exposure to life as a market maker as well as an asset manager.

Contact George Spencer (gws19@ic.ac.uk, see right) for more information)





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22.10.21

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wearitpink.org/freepack





Edited by: KHAMA GUNDE

COMMENT

Grief, student life & solitude

▶ Juggling the heavy Imperial workload and the heavy weight of grief is hard, but I want to reassure you that it gets better.

Anonymous Slightly anxious student



I COULD FIX

THAT I WAS

AND I REFUSED

Following months of remote and limited access, Imperial's student body is tentatively returning to campus learning and this is positive news for almost everyone I know, including me. In fact, I have found myself missing

mundane things like the commute, or the lecture theatre that I hated not so long ago. My memories of student life before the ITHOUGHT lockdowns are now wrapped in the warm fog of nostalgia, which THINGS ALONE is confusing because prior to lockdown one I was in the worst **TO ACCEPT** place mentally that I had ever been.

I lost my father half- WHERE I WAS way through my first year, and for over a BECAUSE OF year I was unable to get **GRIEF.** myself into a positive

place until the first lockdown put my chaotic student life on pause. I was so relieved when I learnt I could go home since I didn't need to put up a façade when I was with my family.

My experience will likely be a familiar one for some students. Unfortunately, the COVID-19 pandemic has been claiming lives since 2019. For some students who are grieving, the social distancing rules meant they didn't get to say goodbye properly. Additionally, given the social isolation during the lockdowns, there may be students who are entering a social environment that may become overwhelming.

The best piece of advice I have for any student who is dealing with grief, is to reach out and look for help. I used to think that phrase was too generic and vague to mean anything useful, but grief is not an experience you can prepare for. It affects people in different ways, and you may not understand what you are

going through until you find help.

I can't take back time and I often wish I handled things differently, but I can share my experience with grief to hopefully help anyone out there feel less alone or confused.

My dad passed away with no warning beforehand, one day he was alive and the next day he didn't turn up to work. My parents were separated, and I hadn't seen

him for a while, so his death was almost unreal to me. That continues to be the most painful part for me; my dad slipped quietly from this world to whatever lies beyond without saying goodbye.

After his funeral I tried to jump back into my routine as if nothing had happened. My busy schedule on campus also meant I couldn't stay at home for long, so I returned to London days after

his funeral and rarely went back home for the rest of first year.

My dad, a former flight engineer, always stressed the importance of education to me, and I wanted nothing more than his approval when I got my acceptance letter into Imperial. So, I told myself that I would bounce back, I believed that I would be inspired to work hard and do exceptionally well in my degree to honour my dad.

Now, that approach may have worked if it was my origin story in a Marvel movie, but I am a complex human being in the real world so I very quickly lost control of everything. I isolated myself from my home friends, none of whom knew about my dad's death because I didn't know how to bring it up. I hid my emotional distress from my new friends; I told only a handful of them and reassured them that I was perfectly fine, that I had cried all my tears at his funeral. Really, I just wanted to be a normal fresher

dad just died'. At parties, I relied on alcohol to relax but when that stopped being effective, I just pushed people away and started leaving events early to be alone. In my seclusion I could finally relax, or cry. Eventually, I skipped tutorials and lectures because I felt ashamed of how behind I was. I felt embarrassed by how unorganised and stupid I must have looked to my peers, but I didn't want pity, so I accepted the judgement. I had just enough energy to focus on revision for the subjects I liked but I gave up on the others as I was certain that I would be kicked out of Imperial after my exams

At the end of my first year, I couldn't recognise myself. I had worked so hard to get into this university, I had good friends, and supportive family and yet I wanted to just disappear. Despite the emotional whirlpool I was in, I thought I could fix things alone and I refused to accept that I was where I was because of grief. I rationalised that I had no right to still be upset months after my dad's death, so much so that I didn't apply for mitigating circumstances for my exams.

When I returned home that summer, a

shell of my former self, Photo credits: I crashed instantly. All Liza Summer on Pexels I did was sleep, eat, and watch Netflix. Honestly I don't remember much from that summer; I was simply in a



like everyone else, not the 'fresher whose hole and my confusion at how I got there was the dominant emotion.

During my second year, I was fortunate to receive some free counselling through the College's Counselling Service, this was before the first lockdown. Although it took that lockdown for me to see progress, it was my Counsellor who helped me to understand that my feelings weren't irrational. Instead, the pressure I put on myself to succeed was. They helped me to recognise the harm I had done in trying to bury the reality that my dad had died. If I had accepted that I was grieving, I could've recognised and dealt with the stages of grief appropriately. I could've asked my department for more help and advice - I only realised later that I could've taken a year out. Maybe my friends wouldn't have been so confused by my sudden behavioural changes, and maybe I would've spoken to my family more about how hard I was finding everything.

I did find peace in the isolation, hence once I stepped back into social situations with other students I started to panic. I could feel myself regressing but I was able to push through by journaling, sightseeing, walking, painting, music, podcasts, and talking to my close family and friends – I was finally able to accept my emotions and be kind to myself.

I can't take back the time I lost to grief, stress, fear, and anxiety. I can only look forward and try to learn from what I went through. When I slowly approached my loved ones again, I was consistently humbled by how forgiving people were to me despite my stubborn introversion. I had spent so much time in my head that I was certain they hated me, but they forgave me and accepted me. Most importantly though, I eventually forgave myself.

I'm still not where I want to be, but I am very proud of how far I have come. There was a point in time where I couldn't talk about my dad without crying, and now I'm writing an article about grief.

So, as cliché as it may sound, time really does heal wounds.