KEEP THE CAT FREE

Founded 1949

Felix@ic.ac.uk Felixonline.co.uk

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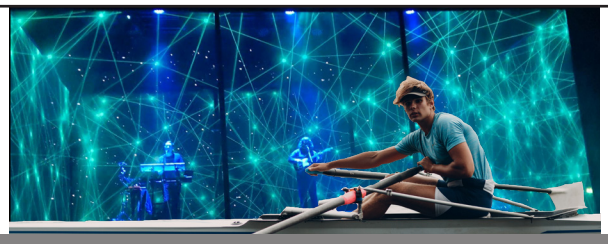
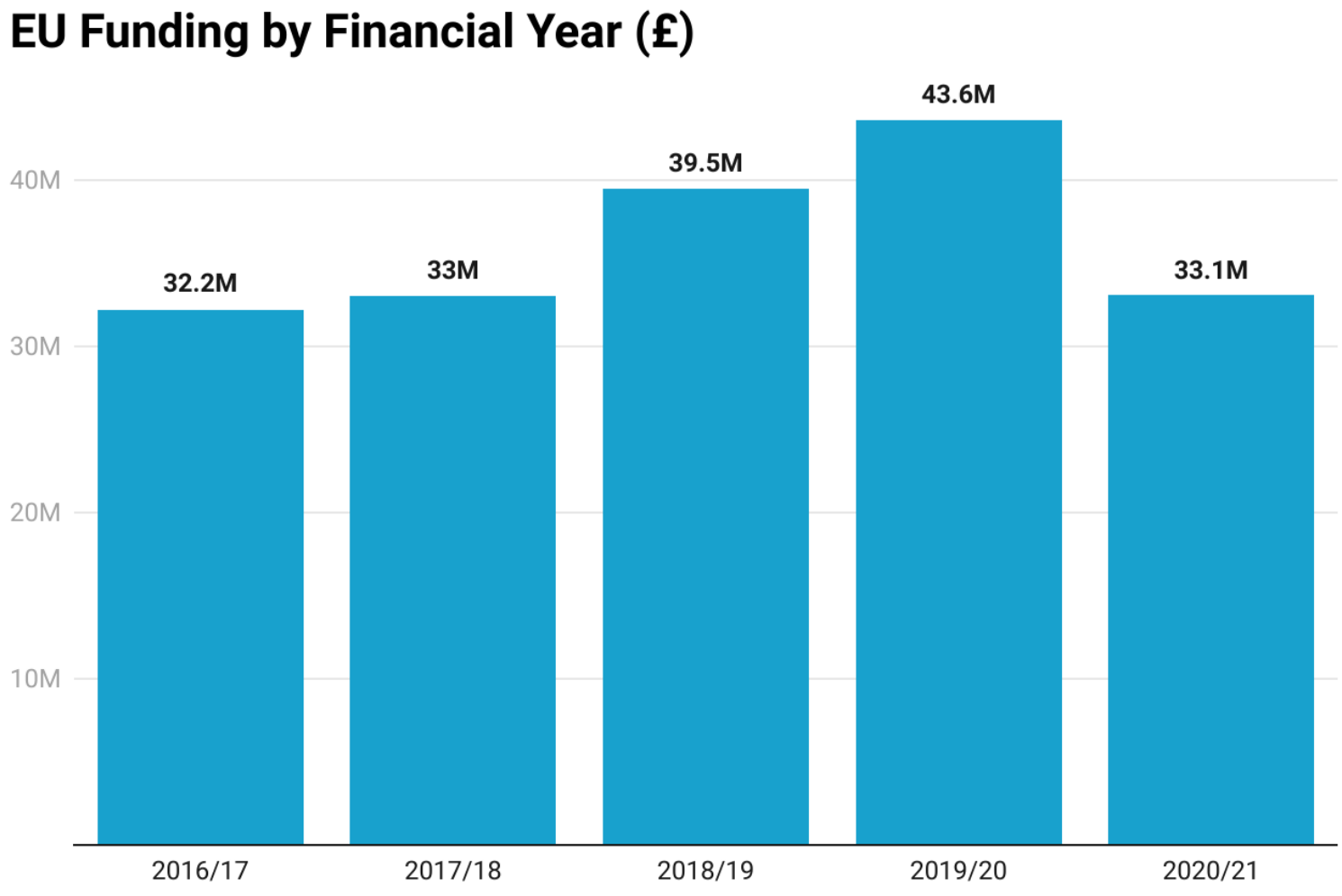


ISSUE 1802

FRIDAY 27TH MAY 2022

Imperial research funding stable despite Horizon Europe uncertainty



Sam Lovatt Editor-in-Chief

Data available on research funding acquired by Imperial College over the last five years paints an interesting picture of the College's future prospects. Brexit, Covid and a backdrop of supposed championing of scientific discovery by the UK government all play their part in determining whether the College can continue to produce the world-leading research that earned it praise in the recently published REF 2021 results.

Imperial College most recently reported a turnover of over £1 billion, a large proportion of which was made up by research funding.

The data available for 2021/22 covers exactly two thirds of the financial year, and a very basic multiplier has been applied to all figures to obtain an estimate of what the total figures for 2021/22 will be.

Brexit has been largely decried by the scientific community, and provides a complex problem in regards to research funding. Many scientists have cited the network of open collaboration that EU membership provides as a key reason to remain associated with Horizon Europe, a metric that cannot be quantified through looking at changes in research funding.

Research funding is split into seven different categories when reported. These are EU Commission, Charity, Government & NHS, Industry, Research Councils, and Other. Research Councils are governed by the BEIS governmental department. Imperial tends to get the most substantial amount of research funding from research councils and charities. The 2019/20 year may be considered anomalously lucrative, with £34 million of the £107 million total from charities being received in a grant towards malaria research by the Gates Foundation.

See the numbers on page 3...

Ministers outraged by 12% interest on student loans

Sam Lovatt Editor-in-Chief

Multiple senior Conservatives have criticised the system linking interest on student loans to inflation, with some saying that the potential of a 12% interest rate will put poorer students off attending university at all.

In April the Institute for Fiscal Studies released a report stating that students were in for a "rollercoaster" of interest rates on their student loans over the next few years, with a peak of 12% on the highest earning bracket, which will start in September 2022 and last for six months. The interest on student loans for those earning above £49,130 is currently calculated by adding 3% to the Retail Price Index measure of inflation. Those earning between £27,295 and £49,130 will incur 9% interest plus a discretionary 0%-3% extra, up from the current 1.5%. Those earning less than £27,295 will incur the inflationary rate of interest.

The IFS acknowledge that the increased rates "only affect actual repayments for the typically high-earning graduates that will pay off their loans". Only around 25% of students who have taken out student loans since the last reforms were announced are expected to pay them back in full, according to the House of Commons

Continued on page 4...

EDITORIAL

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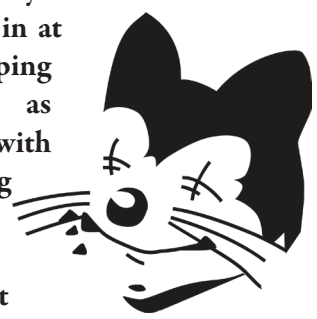
The RMT Union

"The biggest strike in modern history" is looming, after members of the RMT union who work for Network Rail and 13 rail providers voted in favour of strike action on Tuesday. Dissatisfied with a lack of pay increases, potential redundancies and an, as far as I can see, imagined threat of working practices being made worse, RMT General Secretary Mike Lynch is throwing the country in at the deep end and jumping straight to striking, as opposed to negotiating with rail operators. According to the RMT press release following the vote, strikes will start "from mid-June", leaving just two weeks for talks of any sort.



The salaries and working conditions of rail workers are not trivial, and I am wholly unopposed to improving the lot of the essential workers that keep both us as passengers, and much of the goods we buy in shops, efficiently moving across the country. But the idea of striking, as a first resort, threatening what has been described as the biggest strike since the General Strike of 1926, is ludicrous on a number of levels.

First of all, this is very close to being a conflict without a clear enemy. "We want more money!" froths Lynch. Who pays this money? Well the 40,000 or so voting RMT members work mostly for private rail operators who franchise their service from Network Rail. Rail use is at about 75% of pre-pandemic levels, and with that comes an obvious drop in revenues. Fully nationalising the railways is a different matter, but how are the rail operators expected to raise salaries and job protections so much whilst taking only three quarters of the revenue they used to and with much the same operating costs? Not to fear, the railways are so essential that they will always be baled out by the government in times of economic crisis, and indeed, the industry received £16 billion from the taxpayer during the pandemic. Revenues are not miraculously going to increase so substantially between now and the summer, so it's hard to see this strike in any way other than holding the taxpayer to ransom to protect jobs that are no longer necessary.

Lynch notes when calling for strike action that the train operators "have refused to keep staff pay in line with inflation and soaring living costs". It'll be a shock to him, I'm sure, to find out that almost no industries are keeping pay packets in line with the rising cost of living, as that would be essentially untenable for all but the largest employers (not to mention that a pay increase would drive inflation further). Inflation is predicted to reach 10.25% this year, and an equal increase in salary to all RMT members being balloted would cost hundreds of millions of pounds that operators don't have.

Furthermore, there is a very pressing question of need. TotalJobs.com states that the average Railway job pays £45,000, and the average train driver gets paid £54,000 a year. Earlier this month it was reported that over two million adults in the UK have gone without food for a whole day due to increasing food prices; I somewhat doubt those earning £45k a year are included in this number.

The strike is expected to disrupt freight by rail, and supermarket bosses are reportedly already making plans to ensure food remains on the shelves. One thing worse than rising food prices would be if there was no food available to buy at all. In order to protest a lack of support for the cost of living crisis, the RMT is contemplating the single worst thing it could do for the cost of living crisis, and sacrificing the wellbeing of millions for the sake of a higher pay packet for themselves.

Note: I am sure there are members of the College community who will strongly disagree with this take. I would encourage anyone who wishes to write a response, either in the form of a letter to the Editor or as a Comment article.

Statement of Intent

At Felix we 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.

Signed by Sam Lovatt
Editor-in-Chief

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Printed by Iliffe Media
Winship Road,
Milton,Cambridge
CB24 6PP

Registered Newspaper ISSN 1040-0711

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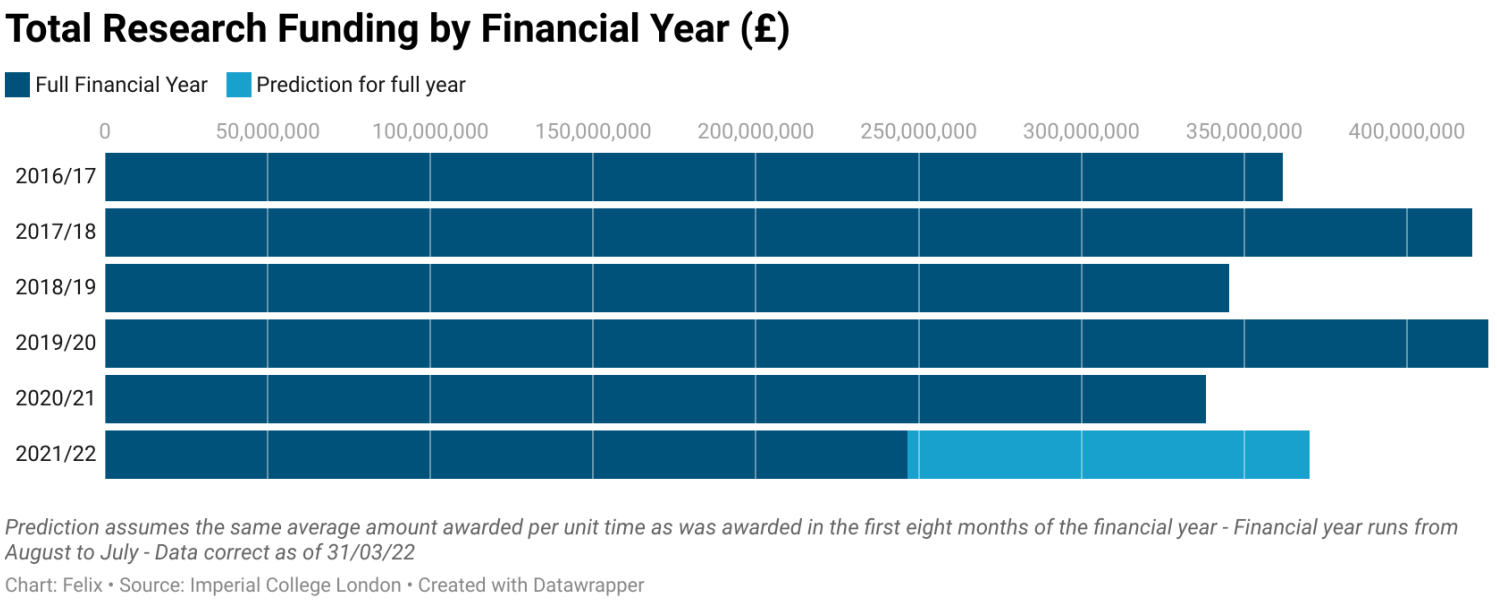
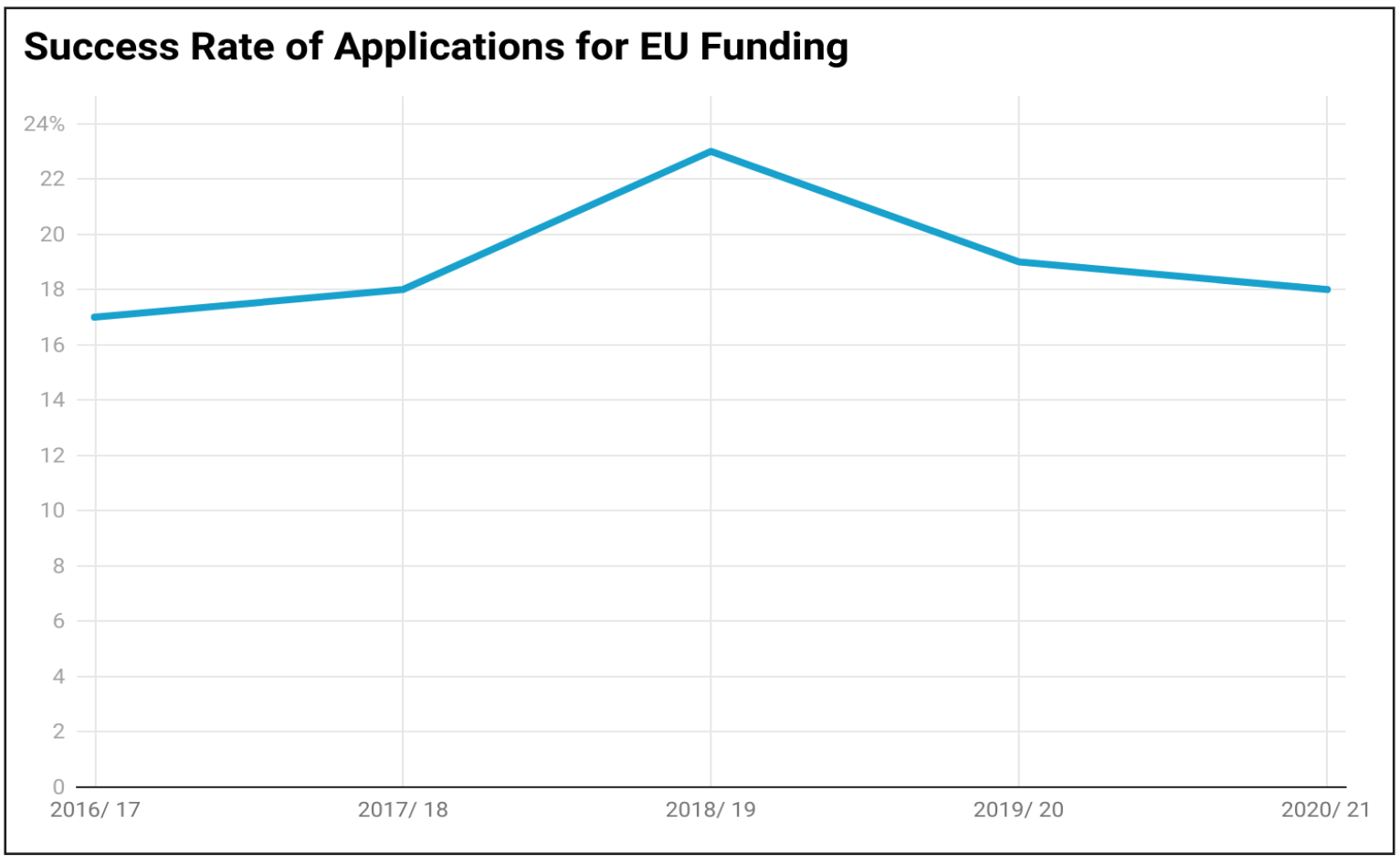
The EU and Horizon Europe





Following the Brexit vote, many may have assumed that research funding from the EU would dry up, through disdain towards the British as well a lack of formal association with the EU. The available data actually suggests a positive trend for Imperial, despite a wider downward trend in EU funding to the UK. In 2019 the Royal Society reported that the UK's share of EU research funding had fallen by 28% since 2015, and that the number of European researchers coming to work in the UK as part of EU fellowship programmes had fallen by a third.

The years 2016/17 to 2019/20 saw a steady increase in funding awarded by the EU to Imperial, from £32.2 million to a peak of £43.6 million. This then drops back down to £33.1 million in 2020/21 (*see graph on page 1*).

Success rates for funding applications (calculated very simply by dividing the value of funding received by the total amount of funding applied for in a given year) shows a relatively similar trend. Starting at 17% in 2016/17, the success rate rises to 23% in 2018/19, and falls back to 18% in 2020/21. Felix was advised by the College that this data is not the data they would normally use to calculate the success rate of funding applications, with an Imperial College spokesperson saying "Imperial has consistently made the case that our researchers need access to Horizon Europe. Collaborations in Europe form the essential building block to wider global engagement are vital to maintaining research excellence.

"Our researchers continue to apply for and win funding from Horizon Europe, without any significant losses. The UK government has guaranteed to underwrite the Horizon Europe grants already awarded. We welcome this guarantee, whilst continuing to make the case for the UK and the EU to find agreement on association as soon as possible - this is in the interest of everyone and a clear win for European science".

These outcomes are notable as the relatively on-par results for the 2020/21 financial year include several months after the end of the Brexit transition period, where some may have expected funding to take a down turn.

Data exists for the 2021/22 financial year, correct up to 31/03/22. Felix was advised by the College that extrapolating from this data would be disingenuous, so we will instead just provide the data as we have seen it: application value to the EU from the College this year so far equals £144,772,862, and total award value so far equals £12,086,315, or around 8% of the application value. This percentage does not represent an accurate indicator of EU funding application success for the 2021/22 financial year.

UK Government Spending

In the March 2020 budget the Chancellor set a target of government spending on R&D of £22 billion per year by 2025. This year, the Business, Energy and Industrial Strategy department lowered this target to £20 billion in another statement, which is disappointing for many scientists, however still far more than the £15.3 billion spent in 2020. From this news, one might expect research grants from the UK government and from research councils to start improving, as that received from the European body decreases.

Currently, funding awarded by research councils to Imperial this year stands at £85.8 million, suggesting a total of £128.8 million by the end of this financial year. This stands at slightly more than last year's taking of £124.9 million, but slightly less than the £129 million taken in 2019/20, and indeed the £133.4 million awarded in 2017/18. Certainly not the significant increase that one might have hoped for.

Funding received under the 'Government and NHS' heading paints a slightly rosier picture. So far this year, the College has received £49.7 million in this category, suggesting a total of £74.6 million by the end of July. This is substantially more than the £48 million received in the whole of 2020/21, and comes close to the peak of funding received from this funding channel, which stands at £76.4 million and was received in 2017/18. 17/18, however, was anomalously high, and the average for the previous five years excluding 2017/18 is £52.5 million.

NEWS

...continued from page 1

Library.

Former Universities, Science and Cities Minister Greg Clark said "A 12% interest rate on student loans is an outrageous charge that the government must prevent from happening", adding that it would breach the expectations that students had when originally taking out their loans.

"[a 12% interest rate] risks frightening off new students from entering higher education, even in courses like science and engineering, at a time when the economy desperately needs these skills."

Another former Universities Minister, Chris Skidmore, highlighted the psychological effect of higher interest rates on prospective students.

"Some might argue that many students may never pay back their loans, so high interest rates are irrelevant, but the key point here is that the additional perceived debt burden created by interest on loans is putting many young people off even thinking about university, when this could be a route for transforming their lives."

The IFS publication in April shared this view: "sky-high interest rates may put some prospective students off going to university; some graduates will likely feel compelled to pay off their loans even when this has no benefit for them."

Students may end up owing twice the amount of money they actually borrowed due to compound interest whilst they pay it back. The IFS point out that high-earning graduates with a balance of £50,000 will incur £3,000 of extra debt in just six months, and that this is more than someone earning three times the median salary would repay during that time. This system amounts to the government charging students a higher interest rate than private banks are currently charging customers.

A cap on interest will take effect in March 2023, ensuring that the abnormally high inflation rates will apply for a limited time only. The law coming into effect at this point will mean that student loan interest cannot be greater than that applied to loans secured from high street banks - the IFS predict that this will bring the student loan interest rate back down to around 7%. Changes to the student loans system recently announced mean that for all degrees commencing from the 2023/24 academic year, interest rates will mirror inflation, with no additional interest charged on top. This measure was introduced as part of the government's response to the colloquially named Augar Review of higher education, published in May 2019. The report encouraged the structure of the system to be changed so that more people who took out students loans paid back the amount they borrowed in full. The government predict that changes made earlier this year will cause the number of graduates fully paying back their loans to rise from 25% to over 50%.

Summer Elections 2022 Timetable

Union Representation Team

The Imperial College Union Summer Elections timetable kicks off next week, when nominations open on 1st June.

The Summer Elections are an annual democratic exercise where all students at Imperial College choose their student leaders for the academic year ahead. The Summer Elections elect some of the remaining vacant roles that weren't filled in the Leadership Elections. Nominations open at 12:00 on Wednesday 1st June and close at 14:00 on Monday, 13th June 2022.

Every registered student will get the chance to vote when online polls open at 9:00, Tuesday 14th June 2022.

Roles in this year's Summer Elections include the Felix Editor, Gender Equality Officer, Departmental Reps, Constituent Union committee roles, and CSP committee positions.

The elections will be held via the Union's eVoting platform.

If you have any questions, please email elections@imperial.ac.uk

Milestone	Date & Time (GMT)
Nominations Open	12:00 01/06/2022 (Wednesday)
Nominations Close	14:00 13/06/2022 (Monday)
Manifestos Due	14:00 13/06/2022 (Monday)
Voting Opens	14:00 14/06/2022 (Tuesday)
Voting Close	12:00 17/06/2022 (Friday)
Complaints deadline	14:00 17/06/2022 (Friday)
Authorisation to run results	16:00 17/06/2022 (Friday)
Results announced	17:00, 17/06/2022 (Friday)

FRIDAY 27TH MAY 2022

SCIENCE

Edited by: JAMIE JOHN
CARA BURKE
MAREK COTTINGHAM

Cheap and fast prostate cancer test developed

Prostate cancer affects 1 in 6 men in the UK, but detecting it is a lengthy and expensive process. Saachi Sachdev explores how researchers at Imperial College London are working to change this...

Saachi Sachdev Science Writer

Prostate cancer is a type of cancer that grows in the tissues of the prostate glands in men. These glands, although just the size of a walnut, are the source of the most diagnosed cancer in the UK. Every year almost 47,500 men suffer with prostate cancer and this figure is progressively rising, with almost 1 in 6 men being currently diagnosed in the UK.

As with all types of cancer, early identification and treatment is key to improve prognosis. However, the slow growth and nature of prostate cancer means that alarming symptoms, such as blood appearing in urine and interrupted urine flow, do not begin until the tumour has already developed.

At higher risk of prostate cancer:

- Men over 50 years of age
- Those with African ancestry
- Those with a family history of prostate cancer

A new prostate cancer test: Multi-Parametric Ultrasound (mpUSS)

Researchers at Imperial College London, University College London and Imperial College Healthcare NHS Trust have recently developed a new type of scan that could potentially help with the early detection of prostate cancer. The technique, called Multi-Parametric Ultrasound (mpUSS) utilises soundwaves to take images of the prostate. The method was tested in the new trial, Cancer Diagnosis by Multi-Parametric Ultrasound of the Prostate, or CADMUS.

Biopsy - a test that takes a tissue sample from a patient, so that it can be analysed underneath a microscope to confirm the presence of abnormal, cancerous cells.

The CADMUS trial included 370 male patients who were identified as having a high risk of prostate cancer by a round of initial tests. The men were then required to undergo both a mpMRI and the new mpUSS scan – a total of 257 men were identified as having a positive mpUSS or mpMRI result. Further diagnosis of prostate cancer was confirmed for these patients through a biopsy, and abnormal tissue was subsequently detected in 133 men: mpUSS had detected 66 cases and mpMRI detected 77 cases. Although mpUSS detected 4.3% fewer prostate cancer cases compared mpMRI, the test resulted in 11.1% more patients having a biopsy – this was due to the mpUSS scan occasionally detecting abnormal areas where there is no cancerous tissue. However, this can be advantageous for patients as it encourages conducting more biopsies and being tested thoroughly, rather than potentially failing to detect a cancerous tissue.

What does this mean for the future of prostate cancer?

As the mpUSS scan is more affordable and is faster to conduct than the current mpMRI, this can greatly reduce the economic impact of testing on the NHS. Additionally, it will allow for more men to undergo the test, which could potentially lead to a reduced number of severe prostate cancer cases. The mpUSS is also favourable for patients with metal hip replacements, pacemakers, or claustrophobia, whilst still maintaining an effective prostate cancer diagnosis. Worldwide, this technology provides an alternative, cheaper method of diagnosis, and could therefore be invaluable for men in developing countries, where cases are already common and rapidly increasing. The mpUSS scan is expected to help reduce prostate cancer development through early detection, and could even be used alongsidecurrent methods.

The CADMUS trial was funded by The Jon Moulton Charity Trust and Prostate Cancer UK.

EXPLAINER

The current prostate cancer test: Multi-Parametric MRI (mpMRI)

Prostate cancer is typically diagnosed with the Multi-Parametric Magnetic resonance imaging (mpMRI) technology. This type of scan can detect cancer in the prostate gland by effectively combining 4 separate images together, producing a more detailed image compared to a standard MRI scan.

The mpMRI method, although over 93% effective, can be expensive and time consuming, which greatly limits the number of scans a doctor is able to carry out. Moreover, patients who have undergone procedures involving the insertion of metallic components (such as pacemakers) are excluded from mpMRI due to its utilisation of a magnetic field, which can damage metallic devices. As prostate cancer risk increases with age, this limitation poses a problem for the older population of men, who comprise a large proportion of patients who have undergone excluding procedures. In order to screen as many of the at-risk population as possible, a different faster and more cost-effective scanning method is required to ensure early diagnosis is achieved.

SCIENCE

Computers will make our drugs in the future

The development of AI and large datasets will help automate the processes of drug discovery and development.

Wang Guo Staff Writer

Drug discovery is a hard, time-consuming and expensive process. A single drug spends around 10 years in the lab before being released into the market. Furthermore, more than 99% of all the potential drugs end up unsuccessful. The rise of AI, as well as giant databases, seem to promise a new future in which drugs will be developed quicker, but will also be safer and more effective.

Before developing any drug, we need to find a biological site of interest that can be related to a disease. For example, GPCRs are cellular receptors that regulate cell proliferation and are involved in many cancers. Thus, creating drugs targeted at GPCRs is sensible and indeed, GPCRs are one of the main areas of research in our fight against cancer. The discovery of a potential biological site is challenging because sometimes we cannot characterise it entirely and/or delivering the drug to it would not be an easy task. This also means that we need to study many different biological sites, usually thousands of them through experiments, which takes up time and money. Using AI to run simulations of biological sites allows us to screen them much faster as we are not limited by how many experiments we can carry out.

Now that the drug target is identified, we need to actually develop our drug. Traditionally, this is done by humans through trial and error, but maybe in the future, computers could design the drug for us by analysing the structure of the biological site through simulations and dataset evaluation. Large and reliable datasets are essential for machine learning - the process by which computers 'learn' from data – as it allows for better performance, and so better and faster drug discovery. Precisely because the datasets must be large, these will arguably force labs and pharmaceutical companies around the world to share the data of their research with each other in order to increase the performance of computers in drug discovery. Could this make patents and IP obsolete? The traditional way of making money from pharmaceutical research would not be as effective as it is today. In that hypothetical future, the benefits of sharing your information are much greater than keeping it for yourself. There are two main types of data: sequence and imaging data. The first one is about the sequences of DNA, RNA and proteins, whereas the second is about structures of molecules/cells like proteins/mitochondria. There is another type of data that has the potential to revolutionise the way we understand genetics and drug discovery: epigenetic data, meaning the changes in gene activity caused by the environment. However, epigenetic data is very variable between individuals. Thus, the data is subject to particular interpretations and may not be easily storable.

Computers acquire information from these large datasets to integrate into their behaviour patterns to optimise their responses in a process called deep learning. The capability of deep learning is unbelievable. With it, computers can determine the structure of proteins by just reading their amino acid sequence. This is a milestone in molecular biology, as predicting how proteins fold has been impossible for humans to determine as there are too many factors to take into account.

Having said that, a world where all drugs are designed by computers is still far away. Even though there are many companies dedicated to this area of research and there are already functional prototypes, the pharmaceutical industry moves very slowly and mass-scaling a product is complicated not only due to logistics but also the necessity to guarantee high efficiency and safety.

To conclude, at present, there is a need for significant investment, in order to develop and commercialise drugs. Pharmaceutical companies and research institutions are under constant pressure to obtain more patents, which do not necessarily succeed in the goal of drugs: to improve people's quality of life. Not only could computers dramatically accelerate the drug development process, but they might also democratise it by forcing organisations to make their data public.

Will humans be excluded from Biology?

► *As technology advances, there is growing potential to advance beyond the boundaries of our human bodies - but this means we will be breaching biological boundaries.*

Runtian Wu Science Writer

It is no longer a surprise to claim that humans are detaching from nature. Forests are being replaced by farmlands, farmlands are being replaced by towns, and towns are being replaced by cities. Children can live perfectly well without seeing the wild, and businessmen, programmers, technicians, and even many biologists do not have to go into nature to do their jobs. When we say, "we are detaching from nature," we mean that our homes, lifestyles, and cultures are more and more disconnected from the natural environment, though at least currently, not from our bodies. We share almost the same blood, muscles, circulatory system, and immune system as pigs, mice, dogs, and cows. We have the privilege to see the atoms, calculate the payoffs in the game theory and send robots to Mars, yet we suffer the same pain, sadness, and diseases as all our cousins in the Class Mammalia. As long as we have this mammal body, we are part of nature.

But we are challenging this connection. Advancements in medicine have made many fatal diseases such as diphtheria and malaria curable, and there are more and more breakthroughs in the treatment of cancer and HIV. It is foreseeable that medical advancement will eventually find ways to alleviate the harm of most diseases. In the 1900s, human life expectancy across most developing countries was less than 30 years; however, today, just a century later, new babies are expected to live longer than 75 years. We were already one of the longest-living mammals on earth. But we are still asking: can we live longer? Can we eventually defy some of the most fundamental biological laws (if there are any) like death?

We are already breaking the boundaries of biology. Every step in medical technology could be moving us further away from a "natural" human. Robotic arms, artificial skin, and the recent attempt at a pig heart transplant just show the potential for how much we can change ourselves. But even without these technologies, we are already stepping into a field untouched by other organisms. For example, we are more and more disconnected from natural selection. Certain previously fatal diseases will not prevent us from living healthy and having offspring, and inherited diseases will be greatly alleviated by treatments. Theoretically, without excluding harmful genes, the whole population could be more susceptible to diseases. The ability of the immune system could be greatly reduced, and people will have to take more and more medicine to survive. Many harmless bacteria nowadays could be dangerous to future humans without medical intervention. But what if one day (could be a few years later) ethics change, and germ-line gene editing becomes a reality? We could optimise our body's genes and preserve good traits without undergoing mutation or natural selection.

> **WE ARE EXPERIENCING A LARGELY IRREVERSIBLE TREND TO DETACH FROM NATURE. PERHAPS WE ARE BECOMING A NEW FORM OF BEING THAT IS LESS AND LESS DETERMINED BY THE ENVIRONMENT BUT OUR OWN WILL.**

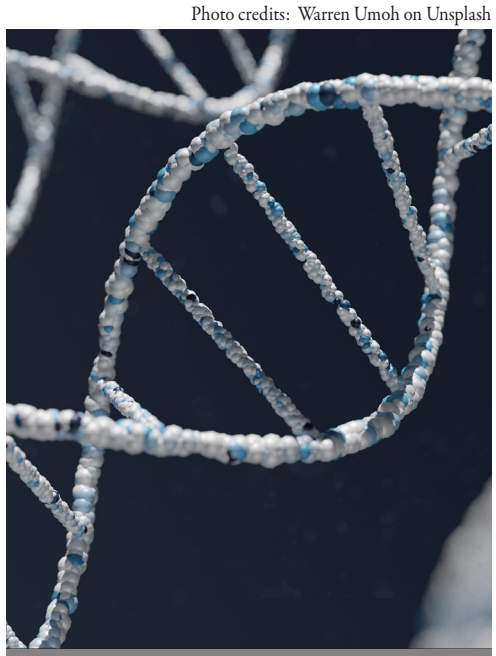
The concept of changing our genes is another huge breach of the foundations of biology. If there is truly something like the "selfish gene", and the only meaning of "biology" is to pass down the genes, then what would be the "meaning" of humans if we start to change our genes according to our favour?

Biology made us, but biology is increasingly becoming our constraint. Our bodies are optimised to utilise a limited amount of resources. More than ever before, we are suffering from an increasing number of diseases brought on by obesity, sedentary lifestyles, high fat diets, and high sugar intake. More resources are supplied to our body than our body can use—such biological limitations constrain our ability to excel beyond our tools, tools such as computers. Within a few decades, humans developed supercomputers to calculate the weather around the globe, and machine learning to handle big data. But relatively slow development is seen in the medical field compared with information technology. The medical industry is constantly trying to develop products that adapt to the human body, but it is much more difficult to let the human body adapt to these products. The rate of natural development and evolution can hardly keep up with the development rate in human industries.

We are experiencing a largely irreversible trend to detach from nature. Perhaps we are becoming a new form of being that is less and less determined by the environment but our own will. When we get used to replacing our hearts, hands, and legs with machines, using assistive technology to help us think, would we start to think "why do we even need the body at all?" We are more eager to preserve our thoughts than preserve our genes, so why should we carry heavy reproductive organs that eat our energy?

If someday we migrate to some other galaxies, we may have to seriously think of a complete split away from biology. One option is to live as files in the disk that can independently think, and more options will certainly become available as science and technology advance. But no matter whether humans can exist to that day or not, we are growing more and more different from our definition of "biology". Perhaps in the next several hundred years, there could be a new domain of life that sets itself apart from eukaryotes, bacteria, and archaea if we still recognise ourselves as part of Biology. But perhaps we will not.

Photo credits: Warren Umoh on Unsplash



What does gene editing mean for humanity?

This week in Science...

FROM IMPERIAL

Researchers can turn genes on and off using electrical signals

Researchers have developed a method which allows gene expression to be accurately and precisely controlled through the supply and removal of electrons. This has wide-ranging applications, from biomedical implants in the body to reactions in large bioreactors that produce drugs. The PsoxS promoter in bacteria was altered to respond more strongly to electrical stimuli, which allows it to activate or repress gene expression. The method was tested using the "glowing" protein from jellyfish and electrons to induce its expression in bacteria, causing the cells to glow when the system was "on".

Imperial and QMUL join forces against Parkinson's

Charco Neurotech, founded in 2019 by then-Imperial student Lucy Jung, will work with Queen Mary University of London to test its device which alleviates the symptoms of Parkinson's. The device, called CUE1, can be worn on the patient's chest and delivers localised vibrations which send signals to the nervous system, which pre-clinical trials suggest help reduce the symptoms of Parkinson's. Parkinson's is an incurable brain disorder that causes difficulties with movement. Current treatment is based around drugs that can have side effects and whose efficiency can wane over time.

FROM AROUND THE WORLD...

Biocrusts in the fight against dust

Biocrusts reduce global dust emissions by 60%, new research suggests. Biocrusts are communities of organisms such as fungi, lichens, Cyanobacteria and other microorganisms which form a "living skin" in the soil surface of many arid regions. These communities secrete adhesive compounds which stick soil together. They cover around 12% of the land's surface, and are now estimated to prevent around 700 teragrams of dust entering the air each year. Dust can carry good nutrients for plants, but can also decrease water and air quality. The researchers looked at data on wind velocities needed to erode dust from different soil types, and calculated how biocrust coverage affected dust generation. Wind velocities needed to erode dust from soils shielded by biocrust versus bare soils was around 4.8 times greater. However, Biocrusts are in danger, with climate change and land-use shifts predicted to result in biocrust losses of 25-40% by 2070.

Water on the moon may have come from ancient volcanoes

Since the existence of ice on the moon was confirmed in 2009, scientists have debated how it got there. New research suggests that 2 billion years of volcanic eruptions could have created atmospheres with water vapour which settled as ice at the poles. When volcanic eruptions were common, they occurred around once every 22,000 years. Based on samples of ancient lunar magma, researchers found that water constituted around ⅓ of the gases released in volcanic eruptions, and from that calculated that eruptions released upward of 20 quadrillion kg of water vapour in total. Some of this vapour would have been lost to space, but in the cold poles, it could have stuck to the surface and froze into the ice we see today. Computer simultions estimate that around 40% of the total erupted water vapour could have accumulated as ice. The new calculations also indicate that each new eruption triggered a new atmosphere, which then lingered for around 2,500 years before disappearing until the next eruption.

Climate change made heatwave in India and Pakistan 30 times more likely, says WWA study

Jamie John Science Editor

Over the past two months, India, Pakistan, and other parts of South Asia have struggled with a destructive prolonged heatwave. Coupled with the effects of low rainfall, it has so far claimed at least 90 lives, resulted in power outages, and caused a 10-35% reduction in crop yields in agricultural states. The months of March and April were the hottest on record for India and Pakistan respectively.

"Because of climate change, the probability of an event such as that in 2022 has increased by a factor of about 30", says a study published this week by the World Weather Attribution (WWA) group. WWA is led by a trio which includes Dr Fredi Otto, Senior Lecturer at the Grantham Institute, Imperial College London.

Heatwaves before the monsoon season are by no means uncommon in South Asia, but what sets this one apart is its early onset, and prolonged nature, which has devastated the agricultural regions in the northwest of India and south of Pakistan.

To arrive at the results, WWA scientists combined climate models with observational datasets containing spatial temperature data from 1951 onwards in India, and 1979 onwards in Pakistan. They compared the current climate with a hypothetical 'pre-industrial' climate. At present, the global mean temperature is around 1.2°C above pre-industrial levels, but if this figure is to rise as expected, events such as the 2022 heatwave could become even more likely.

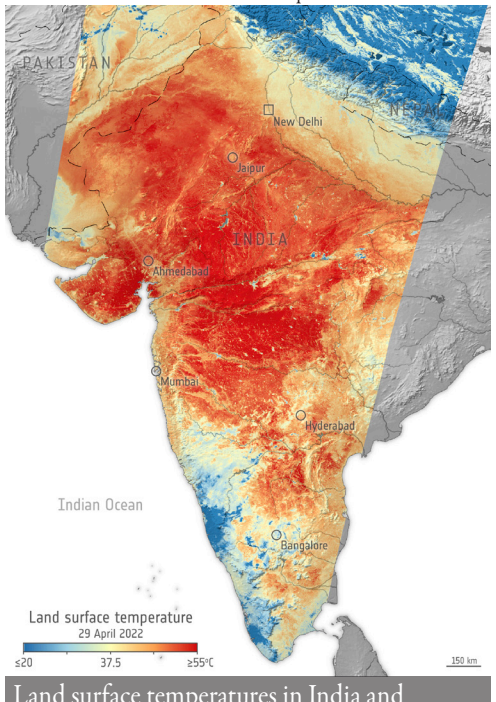
"This is a sign of things to come", said Prof. Arpita Modal, co-author of the study and a professor of Climate Studies at IIT Bombay. Speaking at a press briefing, she said, "In a 2°C warmer world, what is a one in 100-year event now could become as frequent as a one in five-year event"

Extreme heatwaves have become more frequent across the globe, as a result of human-caused climate change. This most recent heatwave in India and Pakistan has had wide-reaching effects. In Pakistan, a glacial lake outburst flood caused a major bridge collapse. Such flash flooding poses a risk for the more than 7 million people who live downstream. In India, meanwhile, the heatwave resulted in a spike in electricity demand, which depleted the nation's coal reserves, causing power outages. The effects of the heat are worst for the poorest in the nation, who work outdoors and who also lack access to electricity and air-conditioning. Circumstances are set to worsen, with the study suggesting that the increasing frequency and intensity of heatwaves will cause some regions to "exceed limits to human survivability".

The economic fallout of the heatwaves extends well beyond South Asia and has affected the wider world; India had been exporting more wheat to bolster global supplies, which have been severely reduced by the war in Ukraine. However, the heatwave has cut wheat yields, forcing the government to U-turn and implement a ban on wheat exports.

The WWA was keen to emphasise the importance of adaptation, stating, "While some losses will inevitably occur due to the extreme heat, it is misleading to assume that the impacts are inevitable. Adaptation to extreme heat can be effective at reducing mortality." It specifically advocated for early warning and action plans, alongside improved awareness and messaging. India's rollout of these plans, which covers 130 cities and towns across the nation, was praised as "remarkable".

Credit: European Space Agency, CC BY-SA 3.0 IGO. Contains modified Copernicus Sentinel data 2022



Land surface temperatures in India and southern Pakistan on 29th April 2022

Arts

Edited by:
Alexander Cohen
Alex Jackson

Exhibition

The wonderful world of ASMR

The World of ASMR ★★★★

Where? *The Design Museum*
When? *Until October 16th*
How much? *From £7.20 (student prices)*

Reviewed by **Alexander Cohen** Arts Editor

Credits: Photo/Ed Reeves

A new exhibition at the Design Museum explores the weird and the wonderful world of ASMR.

ASMR, or autonomous sensory meridian response, has slowly but surely established itself as an Internet subculture. Videos of people ('ASMRtists' as they are now known) whispering or brushing, microphones to elicit a relaxing tingling sensation can be found all over YouTube and TikTok. Is there aesthetic value or a deeper meaning behind these videos, or will it fade away like other internet fads? Regardless, a new exhibition at the Design Museum explores the weird and the wonderful world of ASMR.

The exhibition begins by outlining the different types of ASMR experience. Visual ASMR creations from Oscar Pettersson's Rotating Rings or Andreas Wannerstedt's Slice It Up focus on the visual, often hypnotic, ASMR experience as opposed to an audio-based one most found online. Some ASMR experience are "unintentional" such as in the work of Bob Ross, the television painter whose show *The Joy of Painting* brought a proto-ASMR experience to millions in the early nineties.

Examples of his art line one of the rooms alongside a film of the artist at work. The art he produces is not beautiful. For the most part it is kitsch and tacky, unworthy of much cognitive interrogation. But through the act of painting, the delicate monotony of mixing colours, dabbing his brushes gently in them, and wiping paint onto his canvas, he elicits a meditative sensation. I found myself in a trance, as if the afro headed American's dulcet tones were lulling me into a higher state of relaxation. There is an anti-intellectualism here; audience members are not required to think but rather just to feel, not in an emotion sense, but in a physical one. It is this shared feeling, knowing that everyone else feels what you are feeling, that is the foundation of the ASMR to community. The World of ASMR gives serious critical attention to the phenomenon whilst also exploring the culture around it. The emphasis on "digital intimacy" acts as an antidote to digital alienation, doom scrolling, or social media induced anxiety. This is the concept at the heart of Marc Teyssier's Prototype for Artificial Skin for Mobile Devices. The work consists of a silicone coating, evoking the appearance of venous skin, coating a phone: the phenomenological experience of human skin and human experience in clear dialogue with the phone's hard plastic exterior, but also the ethereal digital world it enables. It is reminiscent of David Cronenberg whose horror film Videodrome sees a nightmarish fusing of body and technology. Except here the object is mundane, something that could easily find a way into our lived reality.

Credits: Photo/Ed Reeves

The exhibition is open until the 16th of October.

Needless to say, many of the exhibits are interactive. Julie Rose Bower's ASMR studio invites participants to create their own ASMR experiences by interacting with a range of objects linked to headphones to induce a tingling feeling. But the highlight of the exhibition are the works that do not just elicit an ASMR experience, but actively question the nature, and interrogate the consequences of said experience.

Tobias Bradford's that feeling/immeasurable thirst has the aura of a Dada ready-made both in its physical form and its sense of humour. The work consists of a silicon tongue rendered in spine chilling detail with dribbling saliva and taste buds, powered with a small humming motor to simulate movement. It waggles and wriggles; placed at eye level it is almost sexual, inviting its viewer for a French kiss, mocking us in its ability to mimic us. It is comical, but it evokes ideas about Transhumanism and Cyberpunk.

ARTS

Perhaps this what is so simultaneously disturbing and fascinating about ASMR. Bradford's work is a reminder that our bodies are nothing more than biological machines. Given the right inputs, certain responses will result. As autonomous and free as I feel, my body is just responding to its world, to the various stimuli it encounters. For some that might be terrifying. For others it is reassuring, something undeniably stable and predictable in a chaotic world.

Are you an aspiring arts critic?
Visit our Facebook page for more details on free press tickets for London shows!

Credits: Photo/Ed Reeves

Tickets are as low as £7.20 for students!

Theatre

A jump into *The Breach*

The Breach ★★★★

Where? *Hampstead Theatre*
When? *Until June 4th*
How much? *From £10 (student prices)*

Reviewed by **Waleed El-Geresy** Arts Writer

Hampstead Theatre is cosy; its stage slanting downwards towards the audience, grey and completely empty. The lights go out and darkness descends. Suddenly, the stage is illuminated, and we jump into *The Breach*, a new play by Naomi Wallace.

The story follows Jude and the protective love she harbours for her younger brother Acton. We witness the effects of the fallout of a foolish, high-stakes game of one-upping that Acton plays with his older friends Hoke and Frayne to conform with the others. The shadow of a dark and shameful event beginning to emerge; an occurrence so dark that I did feel that at times I had to suspend my disbelief that these children, in all their naivety, could have gone through with it.

The audience are initially spirited back to 1977 where a conflict between patriotism and the growing unease at witnessing the effects of a war in Vietnam has filtered unconsciously through to a generation of children growing up. Throughout the play we flit between this time and 1991 when the grown up children reflect on their past. Here, The Breach manages to capture the surreal contrast between the harshness of reality and the innocence of the children experiencing it, as they grow to be adults and try to come to terms with newfound guilt and discomfort about their pasts.

Credits: Photo/ Johan Persson

The cast of The Breach star until the 4th June this year.

Terrible events are juxtaposed with the banal, representing the oblivious way in which the characters experience such things as children. One striking example is when Jude and Acton play a game where they imagine their father thinking about Velveeta on rye bread as he falls through the sky to his death in an unconscious effort to cope with the cruel world their minds aren't big enough to internalise.

The script is dotted moments of light and darker humour (risqué jokes about sexual consent), as well as sporadic solemnity. The younger Jude is brought to life through Shannon Tarbet's fiery and touching portrayal that captures the warring emotions of a girl who must grow up too fast, as she sacrifices herself to protect her brother Acton (Stanley Morgan) from harm and struggles to decide how (and whether) to keep the awkward amorous forays of Hoke (Alfie Jones) and Frayne (Charlie Beck) at bay.

There isn't much in the way of a set or props, give or take a blanket, an encyclopaedia or two, and Acton's guitar. Such is the way with many modern productions, and in this character-focussed play I didn't mind it too much. The darkness and minimalism did manage to give a sense of memories being recounted.

Overall, Wallace does offer us something in The Breach, if not through the realism of its plot, then through the reality of the way it captures the paradox of children's lack of awareness in the grown-up world of rape, war, and death happening in the background.

There's more reviews and Arts content online at felixonline.co.uk!

FRIDAY 27TH MAY 2022

Environment

Edited by: Monami Miyamoto
Marie Mori
Hahyun Lee

View online here!

The things we can't get back:

Science doesn't support HS2's ancient woodland strategy

Nell Pates Environment Writor

Just 2.5% of the UK's land area is covered by ancient forests, in increasingly small and fragmented bits and pieces.

In England, ancient woodlands are classed as those that have been continuously wooded since 1600AD. Given than English oak trees can live for several hundred years (the Major Oak in Sherwood Forest is at least 800!), this 420-year threshold represents only a generation or two for some longer-living species. But these long, slow spans of growth, decay and rebirth produce diverse ecosystems that cannot be found anywhere else. They are unique and, by definition, take centuries to flourish.

It is estimated that HS2, the new high-speed railway under construction, will result in 43 irreplaceable woods being lost or damaged (the Woodland Trust suggests the actual number is 108). So, what is being done to protect them?

HS2's ancient woodland strategy outlines four compensation measures: enhancement of non-ancient woodland, enhancement of ancient woodland, new woodland planting, and ancient woodland soil translocation. By far, the most emphasis is placed on new planting and soil translocation: enhancement is planned in just 3 locations.

Few would deny that new planting, if planned and managed correctly, is desirable. Tree planting can improve biodiversity, pull native endangered species back from the brink, and combat climate change by drawing down and storing carbon. But sadly, the current plans for new planting do not offset the specific losses of ancient woodland ecosystems.

That leaves soil translocation, described by HS2 as the best opportunity to preserve biodiversity. Translocation means that after trees are felled, some topsoil (the top few inches of earth, where most plants and microbes live), deadwood and tree stumps are salvaged and placed at receptor sites.

Few studies have tracked the long-term impacts of this method. However, one 25-year-long study found that while plants grew in the translocated soil, the character of woodland at the receptor site was 'profoundly altered' from that of the donor site. In particular, unique ancient woodland indicator species did not survive the process.

> **"COMPENSATION IS ALL THAT THIS IS: A RECOGNITION THAT GREAT HARM IS BEING DONE**

This happens because the soils of receptor sites do not have the character of ancient woodlands, as Dr Will Pearse, Senior Lecturer in Applied Ecology at Imperial College London, explains: "Soil microorganisms are intimately associated with the plants that root into the soil, and whatever of them [microorganisms] survive being moved will be outcompeted by the organisms at the place they're moved to". This is why the age of ancient woodlands is so important. It takes everything: centuries of tree growth, the establishment of indicator species, and the weaving together of hundreds of species of plants, fungi and microorganisms, to make an ancient woodland. One is not simply made by moving soil.

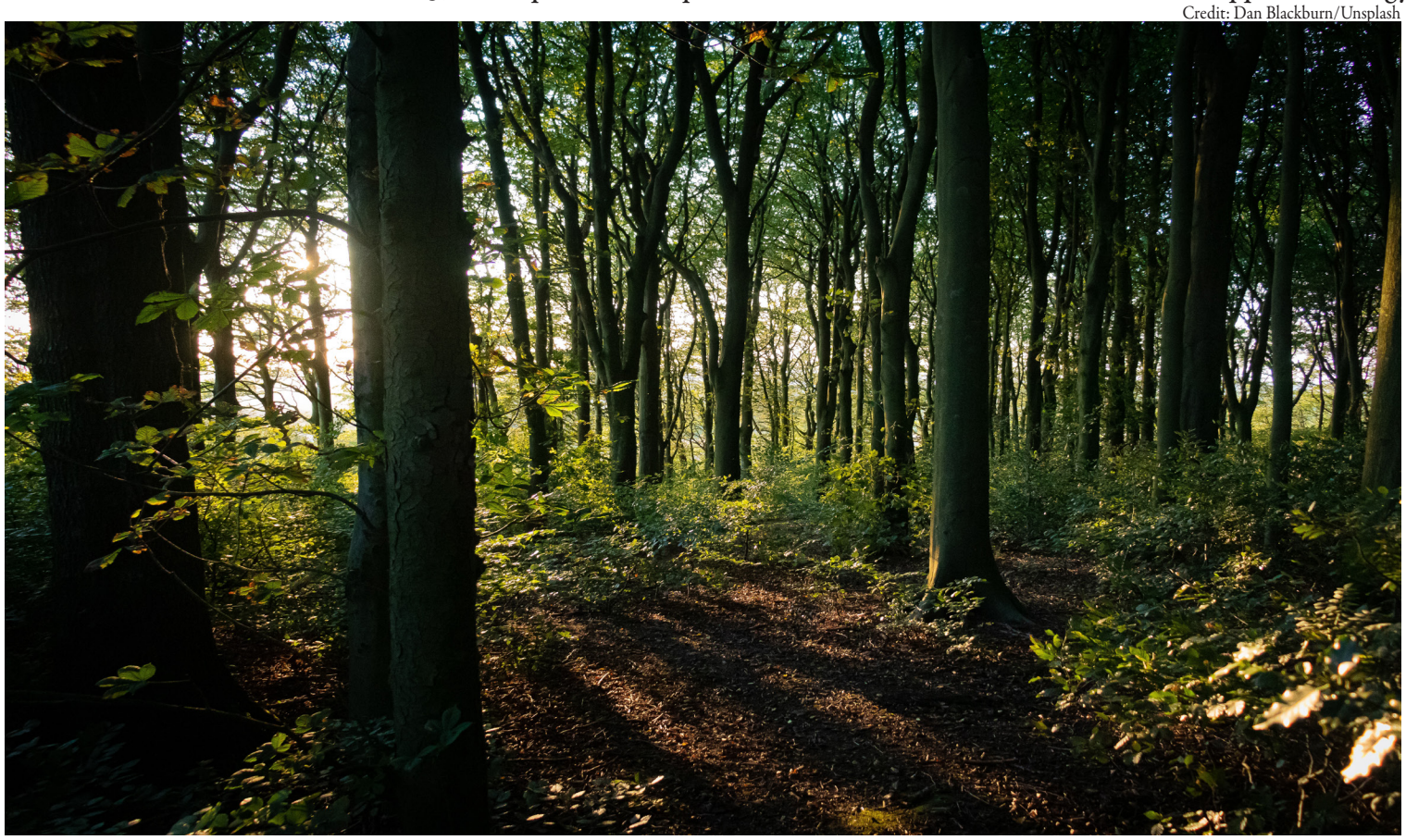
Translocation has other issues to contend with. Firstly, after the damage done by felling trees, only 20-40% of topsoil from donor sites is typically viable, so in practice, translocation involves moving only a small proportion of already damaged topsoil to a receptor site, perhaps with some dead branches tossed on top.

Furthermore, behaviour on site is not always as careful and considerate as HS2's strategy documents might suggest. For example, in 2020, five sites were translocated in the spring, despite initial assurances that all would be done in autumn or winter when most plant life is dormant. Tearing up plants when they are just bursting into bud is an effective way to ensure that life doesn't survive. Nevertheless, HS2 can still claim compensation measures have been carried out at those locations.

Compensation is all that this is: a recognition that great harm is being done. Is it better than doing nothing while ancient resources are razed? Sure. But it is nothing more than that.

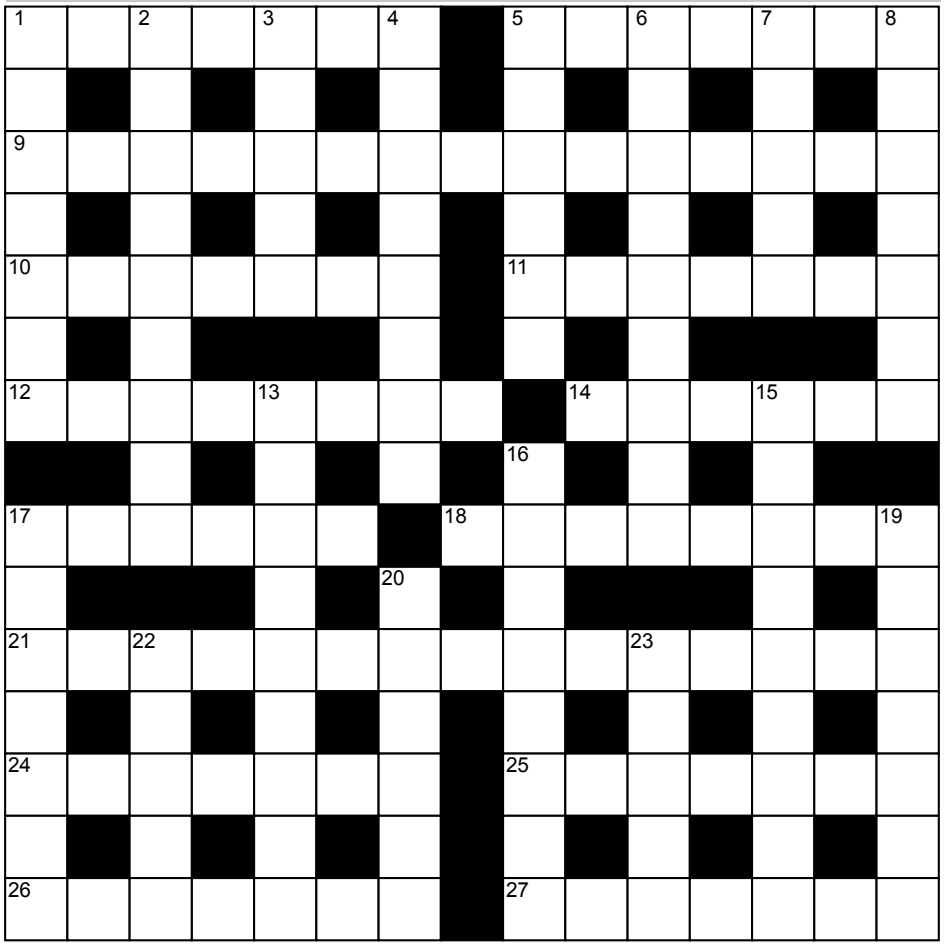
What we are losing is truly irreplaceable.

Credit: Dan Blackburn/Unsplash



PUZZLES

CRYPTIC Crossword Grid



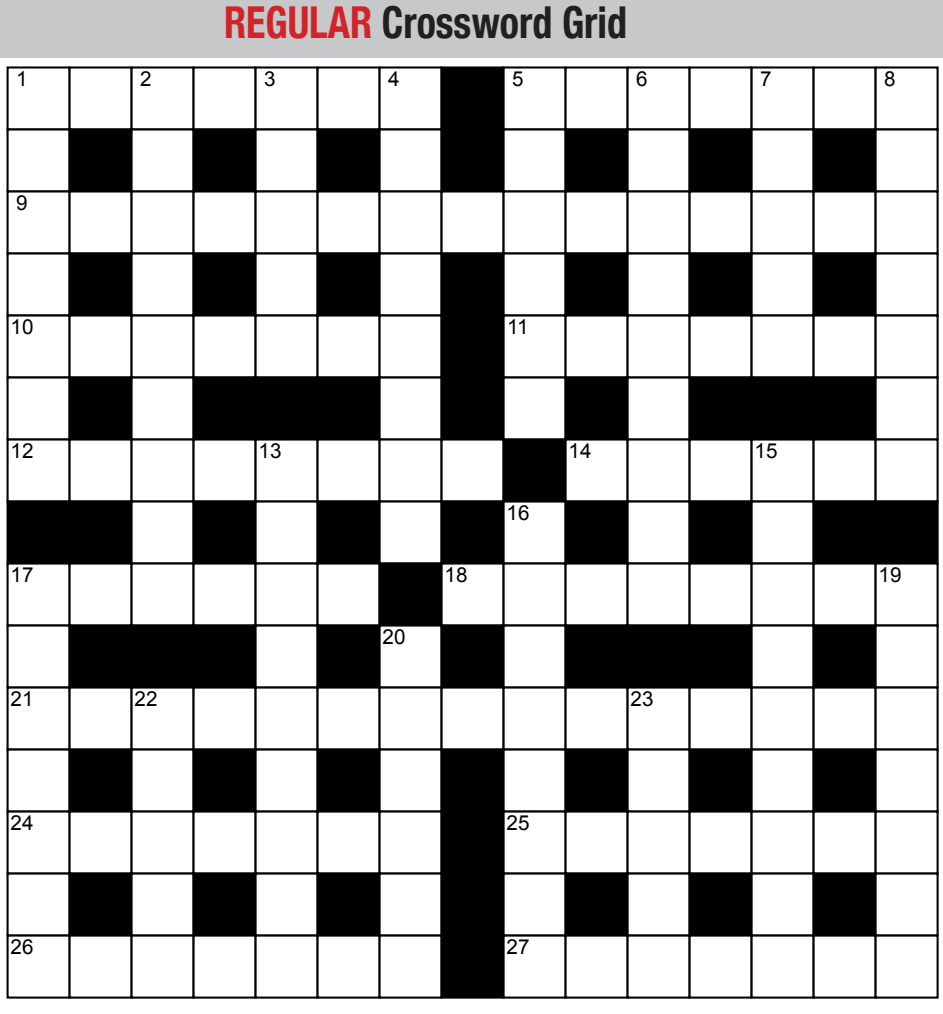
Across

1) Truce formulated with the Poles provides cover. [7]
5) Conserve of acai made in that country. [7]
9) Fruity Scandinavian adventurer? [11 4]
10) Hermit, more cracked about his feet? [7]
11) New city that swings – or is so inclined! [7]
12) Take off top to engage the class of young adults, say. [3 5]
14) There are strange ways about Michael Gove – he's so slimy! [6]
17) Li's coming out of ballistic state, for example. [6]
18) You might blow it in and around the wine. [8]
21) Trumpeter getting rather long in the tooth? [7 8]
24) Lovers' visages. [7]
25) I'll march to the queue without you and pitch this up. [7]
26) Waters, in which pair of moose see reflection, do this. [7]
27) The sea monster died because of this! [7]

Down

1) The creature could be chained. [7]
2) Chance that, when mixed with oil, it'll make dye. [9]
3) Around fifty-one missed the match! [5]
4) Root of an adjective? [8]
5) Animal with a botched ear job. [6]
6) The ship might prove prosperous. [9]
7) I am the first to get out of the business of that island. [5]
8) It comes before international forgiveness. [7]
13) Take this to avoid a kind of water tick. [4 5]
15) I ruminate anxiously on a little thing. [9]
16) At last on my first sled, I weaved in and out. [8]
17) It covered a let supported by the bank. [7]
19) Cut spuds around the top into pieces. [7]
20) It's easy to fit, despite bad electronic noise! [6]
22) Might the chancellor be Irish? [5]
23) He even appears coy. [5]

REGULAR Crossword Grid



Across

1) Craftily put together. [7]
5) Ribbon accessory. [7]
9) Incompetent fool. [10 5]
10) Slip-on shoes. [7]
11) Bloodsuckers. [7]
12) Takes back. [8]
14) All within one's power. [6]
17) Turn to bone. [6]
18) Estimate value. [8]
21) Ability of angler's lure. [15]
24) North African dishes [7]
25) Flush. [7]
26) Carried light. [7]
27) Longed for. [7]

Down

1) Shoemaker. [7]
2) Those that annoy. [9]
3) Deep yellow. [5]
4) 2-Ac may be thus described. [8]
5) Word following man- or pan-. [6]
6) We're in the last one, for now! [9]
7) Idiotic. [5]
8) Export of the ONS. [7]
13) Wealthiness, [9]
15) Frequenter of the cartographer, perhaps? [9]
16) The Earth [8]
17) M25, to the layman; s, to the chemist. [7]
19) Threw out. [7]
20) Babolat competitor. [6]
22) Church instrument. [5]
23) All of the above. [5]

Note from the crossword guru

Dearest cruciverbalists,

My sincere apologies for the exam period crossword hiatus, and for the wonky crossword grid this week. We should be back on track now. Happy solving!

Easy Sudoku

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

Normal Sudoku

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

Difficult Sudoku

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

Points

Cryptic crossword	5 pts
Regular crossword	3 pts
Easy, Normal, Difficult sudokus	2, 3, 4 pts each
Reverse cryptic	3 pts

FUCWIT

Still no leaderboard - working through marking all the weeks we've missed.

P.S. We are looking for more puzzle editors - apply at Puzzles.felix@imperial.ac.uk (also, puzzles are due at noon on Wednesday, also emailed to the above, as usual.)

Want to improve your crossword solving skills? If so, this is the puzzle for you. In 'reverse cryptic' you need to give the reason why the answers provided are correct. An example is given below:

C: The red ensign almost needs a fresh coat of paint. [8]
A: REDESIGN
R: REDESIGN is almost RED-ENSIGN but without N.

Enjoy!

Reverse cryptic

C: Strips and gets bigger. [5]
A: WAXES
R: _____

C: Crossword set by clueless editor? [4]
A: GRID
R: _____

C: Is Southwestern grain like this? [7]
A: CORNISH
R: _____

					✹
1		1		1	2
1	✹		1	1	1
2	3		✹		
1	✹	✹	2		
1					1
			1		
✹	2	✹			2
1		1	2	✹	

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

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

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

CATNIP

NegaFelix investigation reveals that risk assessments are dumb

At 5.31pm, NegaFelix's hidden, motion-activated camera, tucked away in the corner of the Union offices sprang to life. From the Felix offices, weary-eyed reporters could make out the Union's Chief Risk Assessor, Sylvia Williamson, tip-toeing back to her a desk in a cartoon-like fashion, just minutes after the last of her colleagues had left for home. After clattering her password in incorrectly the first two times, Sylvia logged in and accessed the central Risk Assessment programme and opened up a recent file on a Women's Football pub crawl. Looking over her shoulders one last time, she then typed in a new entry that we could just make out through the grainy camera footage: "Could slip when descending tube station steps - re-review". We had her.

We didn't know it at the time, but NegaFelix had just uncovered a nation-wide "Big Risk" syndicate, formed to surgically insert risk into totally mundane activities in order to protect thousands of jobs in the field across the country.

A months long NegaFelix investigation kicked off when a member of IC Cheerleading approached us to complain that a cheer practice event have been postponed by the Union on the grounds that "someone could fall over". Following our aquisition of the damning Williamson clip, we confronted the Risk Assessment team, who crumbled like a soggy rich tea.

"Back in the '70s students regularly got hammered on open rooftops and hosted tipsy sword fights using Imperial memorabilia" said Sylvia when explaining her actions. "No doubt that risk assessors were needed back in those days.

"But then come the 2010s and everything's changed. College rules stop almost all exciting events from taking place, new laws stand in the way of many of the most perilous activities, and common sense holds back everything else."

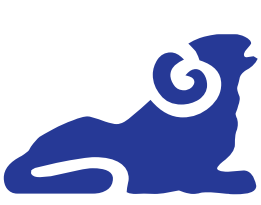
Ms Williamson went on to express distaste for how times have changed. "We've lobbied hard over the past few decades against universities extending their tentacles further and further into the lives of students, but alas we did not win that battle. Now Universities have a greater duty of care over their students than parents do over their children. What the hell are us risk assessors supposed to do when everything remotely risky is just banned altogether?

"Through some totally twisted irony, a lack of risk actually puts our livelihoods at risk. We hatched the solution many years ago, where we started exaggerating the risk of things that people already new about as a reason for us to keep on working. 'Oh, someone might get too drunk and start vomiting on this pub crawl' we'd say, and even though that's the most obvious statement in the world the leadership lapped it up and kept paying our salaries.

"The last five or so years have required some truly ridiculous mental acrobatics to come up with even less risky things that we can assess the risk of. Do you know how I justified my time spent on the most recent Halloween event? 'There's a risk of choking on apples when bobbing for apples'. Every time we think we've run out of road with these excuses, we come up with something as a joke and the senior management nod sternly and keep paying our wages."

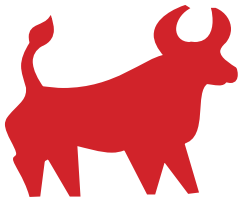
The Imperial group spilled the beans on similar antics going on at student unions across the country, where an orchestrated effort to mollycoddle grown adults was going better than anyone had anticipated.

NegaFelix reached out to College leaders to ask for comment on the story, however requests seem to have been misperceived. The responses we got didn't mention the wasting of student tuition fees at all, and instead just asked us to ensure that appropriate signage had been erected in any area where beans had been spilled, and to promptly inform the Estates team so they could be cleaned up.



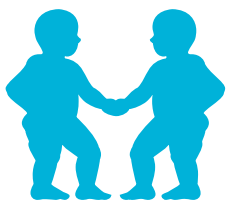
ARIES

This week the bartender mixes a cocktail in your mouth and some gets in your eye



TAURUS

This week you try wearing tight jeans but you can't pull them off



GEMINI

This week you get cholera

CANCER

This week you fall down the stairs one too many times for it to be an accident

LEO

This weak joke won't get any laughs

VIRGO

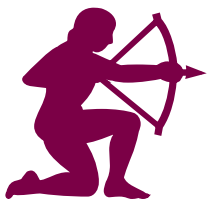
This week the highlight of your week is a ham and cheese sandwich

LIBRA

This week you weld your Apple pencil to your right palm

SCORPIO

This week his story is destined to repeat itself



SAGITTARIUS

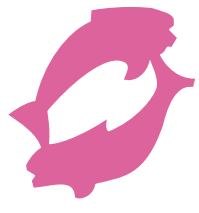
This week you get an exam cheat sheet tattooed

CAPRICORN

This week you steal a couch from DFS. Sofa, so good

AQUARIUS

This week your exam grade is assigned at random between 60 and 70



PISCES

This week all the shops are raising their pisces

Film

Edited by: Eva Borras
Jonah Hewett

Film Review

Everything Everywhere All at Once

Two words: pure insanity.

Directed by: *Dan Kwan, Daniel Scheinert*
Starring: *Michelle Yeoh, Stephanie Hsu*
Year: *2022*

Ioana Eşanu Film Writer

The production of this film was shrouded in mystery. So much so that ahead of its release, the IMDb synopsis simply read "a woman tries to do her taxes". And that description was not too far off, because at the core of this absolutely mad adventure is a human story about the life of Chinese immigrants in America, and the trials and tribulations of filing your taxes.

Everything Everywhere All At Once stars Michelle Yeoh and Ke Huy Quan as an immigrant couple making ends meet with their run-down laundromat business. Their daughter, played by Stephanie Hsu, lives a silent rebellion whilst struggling to reconcile her two national identities. Their home life is depicted with honesty and excellent camera work, as the audience is taken along from the small cluttered kitchen where a rice cooker is steaming away, down to the busy laundromat with its resident oddballs. The dialogue swiftly moves between English, Cantonese and Mandarin, creating a sense of mental confusion that is only the tip of the iceberg.

The story quickly shifts from a family portrait to a (pardon my French) batshit crazy, Scott Pilgrim-esque adventure. The audience, much like Yeoh's Evelyn, is expected to play by the rules of the film without any warning or instruction. Multiversal travel and mind-bending action sequences ensue, in a story where seemingly everything is possible: that includes a butt-plug-shaped award as a key plot point, hot dogs for fingers, and very many googly eyes.

I won't reveal what happens next: partly so you can enjoy the surprise, partly because there are no words to describe it. Simply put, "everything" happens "everywhere", "all at once". The sheer insanity of the film see-saws between charming and exhausting. It is a fun and wild ride, but it ultimately touches on questions of life philosophy, kindness and cynicism. In the face of adversity, disappointment and defeat, is ignorance truly bliss, or is it worth it to keep fighting?

From a technical standpoint, the VFX, cinematography and sound are all stellar. Every shot is carefully constructed, making the film an absolutely stunning piece of art. I wouldn't be surprised if *Everything Everywhere* sweeps the technical categories in the next award season. Viewer discretion is advised, however: flashing images abound.

Left/Right, Credit: A24

If *Doctor Strange in the Multiverse of Madness* left you wanting more, I highly recommend seeing *Everything Everywhere All At Once* in cinema – IMAX, preferably. It has a lot more multiverse, and a whoole lot more madness.

Love the film section? Hate the film section? Let us know!

Are you a die-hard Marvel fan? Do you have a fondness for Tarantinto? Do you only ever watch TV shows, and you're disappointed by the fact that there's no television section in Felix these days?

Do you only care about new film releases, and eagerly await the Felix review each week to tell you what you should think about a new film?

Do you think that new films are all terrible, and cry loudly that they aren't cinema, whilst you gaze at the poster of Akira Kurosawa on your wall?

We here at the film section want to know what YOU want to read about!

Want to write for Film? Email film.felix@imperial.ac.uk

Take our survey here!

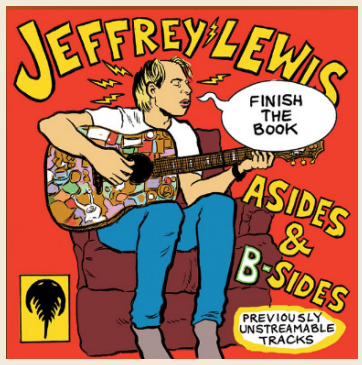
Music

Edited by: Tara Pal Chaudhuri
Joe Riordan

EP of the Week

Finish The Book by Jeffrey Lewis

Jeffrey Lewis is back with some anti-folk to sate my seemingly annual appetite for it that comes around every summer. Finish The Book provides the perfect jumping in point for someone to start listening to Lewis. '*Finish The Book*' is a melancholy track full of weeping slide guitars and bluesy fills whereas '*What I Love Most in England (Is the Food!)*' is a tongue-in-cheek stream of consciousness blurt about, you guessed it, *England, and its food!* This EP covers every single base possible.



Single of the Week

'Underlands' by Andrew Bird

The underrated king of whistling (perhaps paralleled by LP) returns with a soft indie rock single, dressed in Bird's characteristic interpretation of jazz. Reminiscent of a soundtrack suited for a romantic comedy set in New York, '*Underlands*' features a fuzzy, rounded guitar tone along with an eyebrow-raising drum refrain. The release of the single comes with news of Bird's soon-to-come album, *Inside Problems*, recorded by Mike Viola and his four-piece band.

Today in Music History

U2's *Joshua Tree* tour performance in Rome, Italy on the 27th May 1987 triggered local earthquake alarms. Their booming sound systems allegedly shook the windows and even furniture of neighbourhood homes hundreds of yards away, creating a flush of panic and phone calls received by police and fire stations. Fans without tickets were kept outside the stadium and clashed violently with police officials before finally being allowed in during the concert's climax.

Gig Reviews

Wife Could Be a Dream

Dream Wife headline Camden's Electric Ballroom.

View online here!

Written by **Joe Riordan** Music Editor

While the lights dim in Camden's Electric Ballroom, a spotlight shines down on the words "Dream Wife" draped at the back of the stage. As if we're about to watch a silent film or maybe be read a bedtime story, a calm announcer's voice encourages everyone to pull up a chair and enjoy the show. The tranquillity is shattered when lead singer Rakel Mjöll takes over, jumping straight into the hyper-energetic *'Hey Heartbreaker'.*

It's easy to tell this is Dream Wife's home city, the crowd are immediately involved, screaming along to the words and diving around the dance floor. It would be impossible to have an audience this infectiously ecstatic without Mjöll being front and centre of the band. She has an inimitable charisma and energy that exudes throughout the whole set; you can't take your eyes off the stage.

Photo credits: Tara Pal Chaudhuri

It's been nearly two years since the band released their sophomore album *So When You Gonna...* leaving the audience desperate to hear its tracks performed live – and this was delivered. My own favourite song, '*Hasta La Vista*', followed. With driving guitars, Mjöll lamented on "how many ways to say goodbye" moving rapidly into the hectic titular hit *'So When You Gonna...'.*

Even when Dream Wife ditch the classics and showcase some new songs they've written on the road, everyone is as invested and as involved as ever. *'Hot'* is a fast-paced tongue-in-cheek tirade that is synonymous with the band with Mjöll warning, "Don't date a musician". Disappointingly there's no indication of an impending release for it. This doesn't matter to anyone though since the DIY aspect of Dream Wife's evolution is exactly what these new songs embody. Remember, they did tour in Canada before ever playing a hometown UK show.

Photo credits: Joe Riordan

Back to the archives, the band relax back into another of my top tracks from *So When You Gonna...*, *'Temporary,'* full of fuzzy guitar and crispy drums. Afterwards, Mjöll excitedly releases, "Oh my God, it's finally happening" – the show has been delayed three times due to restrictions, isolations, and lockdowns. "Nothing in this world beats the live music scene", and she is right – this year, so far, with gigs back and bands touring has been how I expected living in London to be compared to the rather disappointing 2020/21.

Dream Wife are at their best when they're at their most energetic and tonight, this was during *'Sports!'* - a battle of the axes showcasing guitarist Alice Go and bassist Bella Podpaec, a money gun, and fake cash obtained earlier in Camden Market made for a chaotic, exhilarating interlude.

I didn't know what to expect going into the Dream Wife show, I started listening to them during lockdown and had never seen them live before today but now I need to see them again. Mjöll is one of the best performers I have seen with an impressive voice to match, she is able to transition from screams into perfect vocals in an instant. Dream Wife wouldn't be the band they are without their fans who have supported them throughout their DIY journey up to the Electric Ballroom, but I've seen tonight that this support is completely deserved.

A Dreamscape: Alt-J Live at the O2

The Leeds trio invite the audience to a light and sound trip allowing a peek into their relationship with the music they produce.

Written by **Tara Pal Chaudhuri** Music Editor

Alt-J is a Leeds band categorised as producing indie rock, but the further you read, the internet eventually concedes it's probably folktronica – a meaningless genre until you listen to alt-J and think, "Oh, I get it now". I'd imagine a folk concert to tug at your heart strings and make you cry-sing with

hundreds others. At the other end of the spectrum, an electronic group might drive a crowd insane with just a beat drop. So where does a folktronica group like alt-J fall?

Photo credits: Tara Pal Chaudhuri

After the opening act, Wilderado (an indie folk band belonging to Tulsa, Oklahoma), the Leeds trio – Gus Unger-Hamilton, Joe Newman and Thom Sonny Green – mounted a platform on the stage. They didn't run around, wave at the crowd – or move, for that matter. Gus stood on the left with a double keyboard, Joe in the centre with a guitar, and Thom on the right with his peculiar drum kit. Thom once actually explained his unique percussive setup in conversation with MusicRadar: bass drum, toms, and snares, then bongos, tambourine and a cowbell stuffed with newspaper to reduce the resonance, but no cymbals. When the three practiced playing during their university days, Thom got used to working without any cymbals because they simply didn't fit in their small bedroom.

Before they began their setlist, a screen box descended over them upon which the image of a single, flickering candle was projected. It eventually found company with dozens more reflecting off the ceiling of the O2 as the band opened with the first track, *'Bane'* on their new album, *The Dream*. It was spooky, unsettling, and exactly what I'd expect from this band. Joe's soft distinctive voice sounds exactly as it did on the studio recording, because, as he says it, it's just what's most comfortable for his throat. As ever, he was complemented by backing vocals from Gus Unger-Hamilton, although having seen them live, I wouldn't call them "backing". Gus' much deeper voice serves more as a foundation for their songs upon which Joe's lead vocals meander, emerging especially true when they sang the a cappella *'Interlude 1'*.

What separated this concert from others I've been to would definitely be the ingenious visuals. The screen box projections were an incredible way of entirely changing the perception of the songs. The way you read a book and raise your eyebrows when you watch the movie based on it, the illusion of the band walking on the sun while singing *'U&ME'* shifted what I imagine when I listen to it. *'Something Good'* was accompanied by a visual of bubbles under water, looking like they were performing in a fish tank.

I couldn't imagine it would be easy to perform folktronica live given the delicate balance of instruments and electronic elements, but I was blown away by how alt-J maintained every nuance in their songs – from the light clicks before the cultish vocalisations in *'Bloodflood'*, to the short half-breaths that intersperse with shakers in the beginning of *'Deadcrush'*. Alt-J are very aware of the fact that it's these details that reel in their fans when listening to their music.

Having moved to London after 18 years in India starved of any concerts I'd actually want to attend (what can I say, I'm alternative like that), I can now say I've frequented the O2 far more than I'd planned to. I knew what I enjoyed about a concert: combining head nods with poorly-timed jumps, tipsily screaming vague interpretations of lyrics, gasping at a live guitar solo that I'd heard over my speakers a dozen times. I'm not surprised that alt-J completely threw that on its head, as it's done with a lot of my understanding of electronic music.

Single Review

Iceland's BSÍ do group therapy sessions at 157 beats per minute

BSÍ's latest singles are so good that they have forced me to write my first review since February.

Written by **Rosie Millns** Music Writer

In September 2021, Sonic PR emailed Felix Music asking if we wanted to interview Icelandic duo BSÍ and have press-tickets to their debut London show. The pop-duo had just released their debut album in May, made up of two EPs: *Sometimes depressed...* but always antifascist. I ignored the email.

A month later, I was looking for something new to listen to (as a pretentious music journalist, I derive most of my life satisfaction from finding new music to get a small dopamine rush when I put it on the aux and somebody asks for a track ID). I remembered this album, and decided to give it a try. Within weeks, I had listened to it so many times that BSÍ were on my 2021 Spotify Wrapped. I was truly ecstatic when I was walking home on Wednesday and saw that the duo had released a two-side on 28th April titled *Relax, Blabla*, featuring two new singles, *'Jelly Belly'* and *'New Moon'*.

BSÍ are named after the "most depressing place in Iceland", the Reykjavik central bus terminal, though on their Bandcamp, they go by 'Brussels Sprouts International'. They are formed of Sigurlaug 'Silla' Thorarensen on drums and vocals, and Julius Pollux Rothlaender on bass and toe-synth. The pop-duo is part of Reykjavik's art-collective, rooted in anarchist-ideals and based around the idea of DIT (Do-It-Together), called post-dreifing. The movement rejects the music industry's capitalist model, and instead aims to just create and have fun without focusing on profit. The community is known for countering racism and fascism in Iceland, leading post-dreifing to be seen as a political group, even though many of their artists do not make political music.

Relax, Blabla (by BSÍ)

BSÍ, however, are openly political in their lyrics. The duo marries punk and summery indie-pop in their songs which cover issues such as sexism and feminism. My favourite song of theirs, *'My knee against kyriarchy'*, is named after a feminist concept that describes an intersectional form of patriarchy covering all forms of oppressive structural hierarchies such as sexism, racism, ableism, homophobia, and transphobia. Opposition to oppression is a theme throughout BSÍ's music, whether they present these themes in riot grrrl inspired songs, or in a buoyant indie-pop bop.

The two singles on *Relax, Blabla* couldn't contrast each other more. *'Jelly Belly'* maintains the danceable, upbeat riffs of previous singles such as *'My knee against kyriarchy'*. The track's energy is restless and contagious, with a frantic and rushed dissonant bassline that explodes into a fun and optimistic chorus dripping in reverb, as Thorarensen sings "I don't care if I'm smelly/I don't care 'bout my jelly belly". The band describe the song as a group-therapy session at 157 bpm – the whimsical melodies and dreamy synths and pads conceal the pain and trauma in the lyrics in a way not dissimilar to Mitski's *'Nobody'*.

'New Moon' is a stark contrast. The track is sparse, with little other than whispering vocals set against a subdued baseline. Percussion is intermittent throughout the single, though it is barely noticeable. A dark and moody atmosphere is set through the droning synths in the background as Thorarensen sings "Who knew new moon?/Who knew caring could be so hard?" The track fades out into silence, with little more than a muted synth drone.

BSÍ don't seem to be playing London anytime soon, though I could not recommend listening to their debut album more, and perhaps checking out some of the other amazing artists coming out of Iceland's post-dreifing scene.

To read more about Iceland's post-dreifing collective, and the music coming out of the scene, check out Joe Zadeh's 2019 article in The Face, and John Rodgers and RX Beckett's 2019 article in The Reykjavik Grapevine.

MUSIC

Album Review

How to Run a Temperature with Florence + the Machine

Florence + the Machine release their long-awaited album, Dance Fever.

Written by **Matija Conic** Music Writer

Kendrick Lamar dropping his long-awaited record very much rendered a lot of other things that happened on May 13th insignificant and comparably forgettable. While this truly was one of the more memorable moments in his discography, a few projects have unfortunately flown under the radar because of this release. In fact, one of the bands that always flows under my radar has rolled out a full length LP – no one other than Florence + The Machine, the band that normally occupies a miniscule portion of my RAM due to, well, for the most part just being fairly meh. Admittedly, I always found Welch's vocals to be highly impressive, but all of the band's songs have sort of melded into one big '*You've Got the Love*' kind of track inside my brain. Still, what I have discovered in *Dance Fever* has exceeded my expectations in every possible way.

The production on this record is quite minimalistic, but nonetheless potent and elegant, with an almost medieval quality to it. On top of this, Welch's theatrical vocals take the listening experience to a whole new level. The first teaser *'King'* is a true anthem, describing Welch's struggle between following her passions and the expectations society places on her. She starts off the song depicting a conversation about having children with her partner over pounding drums, a decision that all too often requires women to make career sacrifices in a patriarchal setting. Nonetheless, she shouts a resounding "no" at this expectation with the powerful, "I am no mother, I am no bride, I am king". The song gradually devolves into unpredictability, making this verse become even more hard hitting, with the roaring scream at the end finishing the track on a perfect note. Such a sentiment is nonetheless contrasted with her internal conflict over the same possibility, making it read more as an angry reaction to the world that places that dilemma in front of her in the first place, whereas men remain entirely spared of that struggle. Lyrically, *'King'* is by far the strongest cut on the record and is a very fitting opener, as *Dance Fever* is, more than anything else, an ode to Welch's craft, as well as an ode to music itself, portraying it as her personal therapy, whatever the anxieties in question may be. *'Free'* depicts Welch's mental health demons as "picking her up and putting her down" repeatedly throughout the day, with her only solace being this compulsion to "keep singing", to the point where she wonders whether she should "be medicated". In addition to the pressures of a patriarchal society, the amazing *'Dream Girl Evil'* depicts another fear Welch experiences in face of broader expectations. Sonically, this cut is definitely a huge highlight, with Welch's vocals being truly outstanding, filling you with incredible energy and euphoria. Throughout the track, she angrily rejects the notion of being some sort of "angel", preferring the world to appreciate her dark, imperfect side rather than some fabricated appearance of perfection.

One big over-arching theme on *Dance Fever* is how the pandemic has impacted Welch's insatiable desire to create, dance and perform. The third teaser, '*My Love*' is not too lyrically ambitious, with common tropes like lack of inspiration and pandemic-induced writer's blocks. Nonetheless, it is one of the biggest bangers the band has rolled out in a long time, with perhaps the most recognisable, Florence + The Machine sound out of all the tracks on the record. House-y beats, synth-y strings and angelic vocals are all there to make this song a breathtaking experience, exemplifying the title "Dance Fever" in the best way possible. In *'Cassandra'*, she sings about her artistic struggles further, employing the character of Cassandra – the princess of Troy who was gifted with the ability of prophecy, but cursed by Apollo for not wishing to disclose his future to her, resulting in nobody ever believing her again. The mythological metaphor is an interesting way to voice a struggle many artists have encountered during the pandemic, lacking an audience to showcase their art to and share their emotions with. The epic "Can you see me, I cannot see you" feels like it is being delivered to a huge, empty concert hall, with Welch singing her heart out to nobody. This yearning for live performance is even more explicit on the track *'Girls Against God'*, where she wishes to battle God for inflicting this punishment on her. Still, this remains one of the less memorable cuts given the fairly bland production. *'Daffodil'* is another track that reads as a more general yearning for a return to a pre-COVID era. The notion of "letting the helpless optimism of spring" enter Welch's mind is contrasted with the chorus simply going *'Daffodil'* over and over again over a mindlessly monotonous, but nonetheless extremely hard-hitting beat that feels like it has a life of its own, thumping independently of the lyrics, while still pushing you towards a dance-y mood. In some ways, this juxtaposition reminds me of how little sync there was behind the expected flow of one's life and the enforced routine of the pandemic.

Dance Fever album by Florence + the Machine

On other tracks, the minimalistic production did not work as well as it did on tracks like *'King'*, for instance, in spite of Welch's consistently amazing vocals, examples being '*Back in Town*' and *'Heaven is Here'*. The latter track, though vocally exciting at times, does eventually become dull, as it feels like it could have explored the vocal experimentation a lot more and possibly lead the track towards a more exciting finish. Still, any residual boredom quickly evaporates as my definite highlight of the record begins to play – *'Choreomania'*, a song named after the phenomenon of quite literally uncontrollably dancing until complete exhaustion. The setting that comes to my head as the bubbling beat begins is that of light rain pouring down on me at 5 AM while I indulge in my thoughts and struggles, some of which are entirely inconsequential and over-romanticised ("And I am freaking out in the middle of the street/With the complete conviction of someone who has never had anything actually really bad happen to them/ But I am committed, now, to the feeling"). Still, the rising tempo has an almost hopeful feel to it. The song evokes sadness in me, coupled with a strange form of almost trance-like happiness, caused by the sheer joy of existence. For a minute, this track invites you to forget about your worries and drown in the beauty of the moment in front of you, while also sending you in a meta-introspective state that feels weirdly enjoyable.

Overall, *Dance Fever* definitely lives up to its name – it is an incredibly cathartic and euphoric journey through emotional struggle, told through the recurring motif of "dancing" your pain a way. Though the pandemic-related tropes do hit with lower potency that they used to given their prevalence across the board, I do think that Florence + The Machine give a sufficiently versatile and creative spin on them. Most of all, however, this album is a true demonstration of Welch's anthemic vocal ability, with tracks that are guaranteed to stick around with you for a long time.

Books

Edited by: Zanna Buckland

Book Reviews

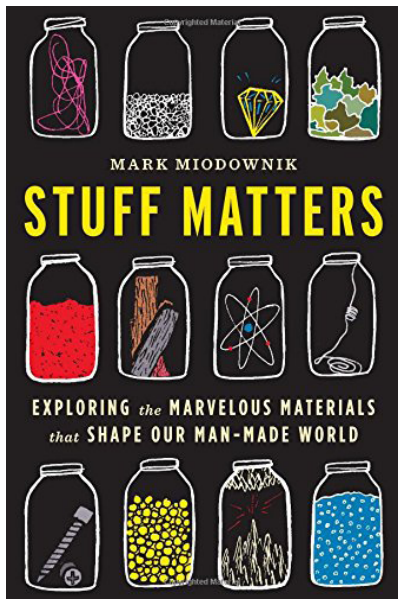
Non-Fiction Recommendations from a Materials Student

We're still open for business! Get your book reviews and articles submitted to *books.felix@imperial.ac.uk* in the next few weeks to have them published before the year's up.

Zanna Buckland Books Editor

Title: Stuff Matters (Exploring the Marvelous Materials that Shape Our Man-Made World)
Author: Mark Miodownik

If you're a fellow Materials student, you probably aren't a stranger to the title *Stuff Matters*, by Mark Miodownik. Glossing over the fact that this is a title that resides on the Materials undergraduate recommended reading list, this is a book you can actually get stuck into. Occasionally literally, as one of the chapters – titled *Delicious* – details the chemical composition and structure of chocolate and sugar!



In any case, *Stuff Matters* doesn't just cater to materials scientists; it's a layperson's guide to ten everyday materials, their molecular structure, and why it makes them behave the way they do. These ten materials are derived from a simple photograph of Miodownik sitting on his roof. From this photo he draws an ordinary example of each material, such as a pencil to represent graphite, or a garden table for steel, thus proving their normality.

Miodownik writes in a conversational tone, describing relatable instances in which the reader would interact with the material at hand, an example being the versatility of paper, with its applications in communication, decoration, education, and more. He also discusses fascinating functions you might not encounter, such as the use of silica aerogel in space exploration; for catching dust particles (or space dust) from meteorites. Miodownik continually links this information back to the concept of choosing materials with the optimum production capabilities and for the best user experience for a given product.

Each of the ten chapters is labelled with an appropriate adjective (e.g., *Fundamental* for concrete, *Invisible* for glass) and describes the properties and applications of the substance. The text itself is split into lovely bite-sized paragraphs, and is peppered with black and white images, diagrams, and even a section of screenplay, giving the book a slightly whimsical feel.

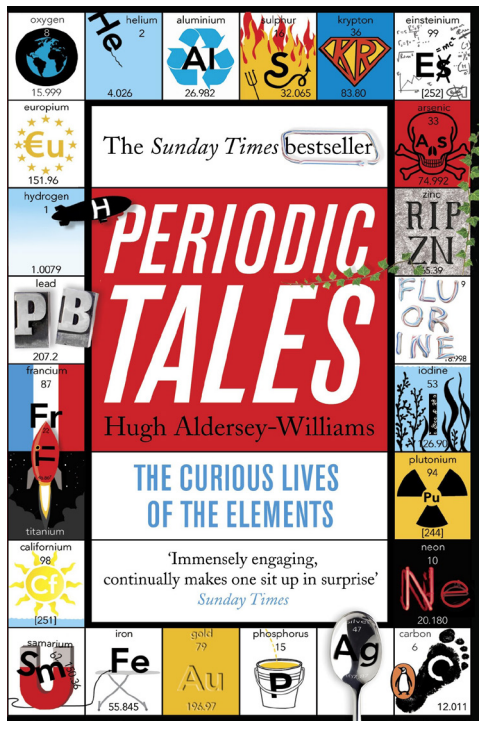
As non-fiction books go, this one is as accessible as it gets, combining thorough scientific explanations with a knack for storytelling, all complemented with creative illustrative features. This is a great read for anyone who wants to expand their knowledge of the materials that are used to construct the world around us.

Title: Periodic Tales (The Curious Lives of the Elements)
Author: Hugh Aldersey-Williams

Periodic Tales is a delightful read, and was one of my first forays into non-fiction and academic reading. Hugh Aldersey-Williams spins narratives that revolve around the elements of the Periodic Table, exploring the unique attributes of each one and their utilisation for practical purposes. He also delves into the scientific, cultural, and even political histories of each substance, touching upon their applications in art, war, and literature, among other sectors.

Periodic Tales was born out of a journey to acquire a physical sample of every element known at the time (in 2011 - the time of writing - 116 were officially recognised by IUPAC). Through this search, which took him all over the globe, Aldersey-Williams not only found his samples, but also discovered stories and factoids about these building blocks of the universe.

The chapters are categorised into five separate parts, denoted by the terms *Power*, *Fire*, *Craft*, *Beauty*, and *Earth*. These are categories that inspire the reader to view the elements from a fresh perspective; for example, to consider lead as a craftsman's material. While not mutually exclusive, the groups are distinctive, defining the elements by a particular purpose. Each chapter has a curiously unique title pertaining to a property or application of the given element (or elements, as in the chapter titled *Ytterby Gruva*).



Among these unusual chapter titles are *Our Lady of Radium* and *"Lonely-Chrome America"*. The first details Marie Curie's tragic and incredible discoveries of the radioactive elements polonium and radium, as well as discussing their lesser-known uses in commercial products, prior to being labelled hazardous materials.

Aldersey-Williams writes in a similar style to Mark Miodownik (see above), relating each element and its applications to his personal experience of searching for it. In the polonium chapter, he mentions visiting the Curie Museum in Paris, and stumbling upon an old box of radium-branded shoe polish in his parents' house.

"Lonely-Chrome America" chronicles the story of chromium – as you might expect – with regards to its role in promoting early consumerism. Chrome-plating was utilised for a variety of vehicles as well as gracing fashion runways and household appliances, but eventually became a symbol of superficiality. Aldersey-Williams links the explosion of chromium's use in consumer products to America's recovery from World War 2 and the Great Depression.

I would recommend *Periodic Tales* to anyone looking to learn more about the history of science and the extent of the periodic table's influence on society. Whether it's the glow of the noble gases or the shine of platinum and gold, at least one of these elemental narratives is sure to pique your interest.

Comment

Have an article in mind?
Email your idea or piece to:
comment.felix@imperial.ac.uk

Edited by: **Khama Gunde**

Letters to your first year self

We asked you to share what you wish you knew in your first year...this is what you said.

Please be aware:
These entries are uncensored and unfiltered.
Please respect the writer's honesty and vulnerability.

TW: Talking about trauma and post-traumatic growth

Dear Younger Self,

There is so much that you have yet to learn about yourself. So much that if I were to travel back in time and talk to you in person, that I doubt you would even recognize me. I changed our hair to a bright purplish pink, something your shy, delicate self can't even dream of doing. Don't worry though - I still haven't gotten any tattoos. (Yet)

You have a very limited view of yourself, your worth, and what you can accomplish. You never really had the chance to grow and explore who you really were in your restrictive home environment, and now you finally have the opportunity to do so. I have to warn you, however, that it won't be the cathartic freedom you were always expecting. There will be pain that comes before that growth. You will live through things you never thought you would be able to survive. You will go through periods of hopelessness and despair so deep that it will feel like you are stuck in it for an eternity. But I'm here to tell you that that will not be the case. You WILL make it to the other side, and you will become way more powerful than you could ever imagine.

You will learn to take those years of pain and sadness and use it to light a fire inside of you that drives you forward. That fire will burn with a ceaseless devotion towards bringing positive change upon the world around you. You will bring light to every room you walk into, and help pave the way towards a brighter future.

Hang in there, old friend. No matter what happens, just remember that this is only the beginning.

Sincerely,

You

Nathalie Podder
Sabbatical Officer

Kimiko: a haiku

The katsu curry
Not worth the 1 hour queue
Nor the seven quid

3rd Year
Bioengineering

It's never too late to drop out

2nd Year
Physics

It's okay to reach out to people if you're struggling in any way whatsoever :)

3rd Year
MSci Chemistry with Medicinal Chemistry

Beeg Yoshi

You dumb but you'll get less dumb so its all good

4th Year
Physics

DO NOT DO MATERIALS. Transfer to chemistry if you can.

2nd Year
Materials

To my naive 1st year self,
Learn to cook ASAP, it's the No. 1 most useful skill that you'll learn during uni (it keeps you alive). And in general pls just focus more on becoming an adult rather than on getting good grades like in high school. Also, get ready for the unexplored world of mental health problems, you'll have a few encounters with that stuff. Student counselling is available, mit circs forms are great, use them as needed.

3rd Year
Biology

Enjoy your life.

1st Year
Physics

It's been an amazing year with wonderful achievements!

Othman IY Almusaimi
1st Year
Pharmaceutical Chemistry

I wish I knew results are not that important!

4th Year
EEE

Dear younger me,
Join the quiz society as soon as possible, attend the university challenge trials, and maybe, just maybe, find some employment ahead of time.

1st Year
Chemistry

Leave and go to a different uni. Every year you are here they will tell you "this year was a bit of a mess, but we're going to make great improvements next year!" And every year they will fuck you over. Leave now, it isn't worth the psychological trauma.

4th Year
Mathematics

Good luck, these will be both the best and worst years of your life.

3rd Year
JMC

Don't be too hard.

2nd Year
Mathematics

Hello first-year-me,
It's October 2019 and you've just started. You have five months to enjoy uni before everything gets fucked for at least two years.

3rd Year
Physics

COMMENT

IS THERE ANYTHING YOU WISH YOU KNEW ON YOUR 1ST DAY AT IMPERIAL?

Felix invites YOU to write a letter/message to your 1st-year-self, reflecting on your experiences here since day 1

Simply SCAN THE QR CODE or USE LINKS shown to take the survey

We will share your messages in a special section like this. You can be anonymous, and you can submit photos!

https://forms.office.com/r/YEUV6Jq3XC

shorturl.at/ilstG

FRIDAY 27TH MAY 2022

Sport

Edited by: Amanda Barden
Konrad Hohendorf

Imperial Rowers take on Wandsworth Prisoners

Amanda Barden Sport Editor
Peter Hardcastle Imperial's Rowing Coach

Imperial's rowing coach, Peter Hardcastle, did a three-and-a-half-month program where he coached the inmates of Wandsworth prison until the end of March.

"It was a personal thing, where I felt that I wanted to give a little more to the community and wanted to do something different. I was there for two hours every Thursday morning, and it was really good. Personally, I think everyone deserves a second chance. I think it's about giving people opportunities, especially in areas where they are otherwise unavailable, and then people can make their own decisions. It started with a four-week program, where I would go in and give rowing lessons to 12 prisoners. As time went on, and as the program grew, I did two-week rotations, where I would train 12 different prisoners from a set wing (as you can't mix wings) over time. I would teach them how to row on the rowing machine, I would give them a workout which they could do, and also teach them how to do a relay. After a while, we came up with the idea to have a 2km rowing relay challenge between six prisoners and six imperial students.

"The actual challenge was really good. The six imperial rowers went first, followed by the six prisoners. The atmosphere was electric! The prisoners beat the rowers by 0.4 seconds!", says Peter.

One of the students describes the experience: "racing in the prison was an amazing experience. There was a great atmosphere of friendly competition and it was a privilege getting to know all the guys we raced".

A large part of the experience was the discussions between the rowers and the prisoners. Peter says, "It was amazing that all the rowers were really happy talking to all the prisoners. Most of the prisoners were on twenty-year sentences for drug related stuff, and all the rowers found it fascinating talking to them! Most Imperial students wouldn't normally mix with prisoners, so it was fascinating to them. You could see by their body language and stories after, they really enjoyed it. This event 100% changed the students' perspective."

"It was an experience out of the ordinary for everyone involved", says one of the students who attended it.

> **"THE ATMOSPHERE WAS ELECTRIC!**

The conversations between the students and the prisoners were also very diverse. Another of the student rowers says, "the opportunity to visit an operational prison and compete directly against some of the inmates was a memorable one. Speaking with some of them before the race, it was interesting to talk about the Open University degrees they are taking and comparing our different experiences of 'remote learning'".

Peter describes involving the students and safety in this event. "Even now, rowers have asked me when I will be running this event again because they would like to be involved. I would love to continue involving Imperial Students, and it is a very, very safe place. Prisoners aren't there to harm people that are trying to help them from the outside world. Really, the only violence there is against themselves and gangs within the prison; they never attack the person who is giving them gym time, or the rowers that are there to do a competition. They aren't that type of people."

Even though the original challenge only lasted an evening, the prison continued to run the program and had competitions between two teams from each wing, across eight different wings. The event has kept running till now.

Peter says the program had big benefits for the prisoners. "I think the prisoners also thoroughly enjoyed it. On a weekly basis, I would walk through the prison, seeing the prisoners in their cells, seeing where they ate and played sports. Near the end of my challenge there, as we were walking down the wing, there were so many prisoners that would be asking about getting back on the rowing machine again and when they could come and get involved; it was so rewarding to see them so happy. The prisoners like a good workout, they like feeling they used their muscles and that they are getting strong. Teaching them how to apply the power through the rowing stroke is really good; there are some very strong men in there."

There were some prisoners that stood out. "You would see some very interesting characters in the prison. A few were exceptionally strong and competent rowers. All the guys were very kind and nice to talk to."

There are some plans to continue this opportunity for prisoners to row. "We sort of talked about running it from a British Rowing challenge, virtually, so that the prisoners could maybe enter events outside the prison and compete that way as well. The prisoners might not have the cardio to do a 2km race, but they would manage the 500m with changes, like a relay. It would be really promising to have a Wandsworth prison team competing in the virtual British Rowing."

We also asked Peter about his personal experience running the program. "It was very beneficial. I am really glad I did it and I've got some great memories. For the prisoners, it's someone volunteering their time to go in and teach them a skill they've never tested. During the first week, they would all shake my hand after the session. By the second week and every week after, they just started coming up and giving me hugs, just for spending the time to come in and see them. You really see the appreciation is there because they are very thankful and nice to you.

The impact of this program is something that you won't know the effects of until they are released from prison, which could be a few decades. Hopefully, even if it touches one prisoner's life, so when they leave they take a different direction, that would mean all the world to me."

Felix thinks this is incredibly commendable, and something that all Imperial students should strive for: to give back to the community and try something new.

Peter Hardcastle with Imperial rowers outside Wandsworth Prison

SPORT

IA Sports Awards are back

Amanda Barden
Sports Editor

The Imperial Athletes Sports Awards are coming up on Thursday 16th of June with tickets on sale already on the union website. The deadline for purchasing tickets is on the 6th of June. Charlie Webster will be hosting the big return of the Sports Awards and there will also be a special guest speaker!

The event will be held at the Copthorne Tara Hotel. It is a black tie event with a three course meal included and a bottle of wine for the table. The award winners will also be revealed on the night, so come and support your peers and sports clubs that have been short-listed!

The short-listed nominees for each award are seen to the right. More information on the event can be found on the college website.

Outstanding Contribution Award
- Daisy Bali – Women's Football
- Ella Beattie-Edwards – Parkour, Free Running and Gymnastics
- Thomas Cowperthwaite – Badminton
- Sherry Yuqing Xu – Fencing

Coach of the Year
- Luke Johnstone – Women's Football
- Elliot Queisser de Stockalper – Handball
- Juan Campos - Volleyball

Participation Award
- Rocío Galí – Fencing
- IC Cricket
- Parkour, Free Running and Gymnastics

Sportsman of Year
- Lachlan Jarvis – Fencing
- Elliot Queisser de Stockalper - Handball
- Marcus Chung - Rugby
- Chun Wai Fung – Table Tennis

Sportswoman of the Year
- Melissa Hexter – Barbell
- Elizabeth Witt – Boat
- Kate Gardiner – Lawn Tennis

Sports Club Member of the Year
- Sherry Yuqing Xu – Fencing
- Adam Moorcroft – Football (Medics)
- Martina Becchio – Tennis

Rising Star
- Chun Wai Fung – Table Tennis
- Lachlan Jarvie – Fencing
- Tristan Uvovo – TKD
- Ella Silvester –Women's Football

Student Club of the Year
- Cheerleading
- Rugby
- Futsal (Football)
- Football (Medics)
- Volleyball

Team of the Year
- Dodgeball - Women's 1s
- IC Badminton - Women's 1s
- Table Tennis - Men's 1s
- Handball Eagles Men's 1s
- Cheerleading Titans Level 2