



Felix

The Student Newspaper of Imperial College London

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Imperial has over £12 million invested in fossil fuels and tobacco // Felix

Tobacco, oil, and arms – where Imperial is investing its money

NEWS

Fred Fyles
Editor-in-Chief

An analysis of Imperial's investments reveals significant holdings in tobacco, arms, oil and gas, and pharmaceuticals.

An analysis of Imperial College London's endowment fund has revealed significant direct and indirect investments in the tobacco, fossil fuel, weapons, and pharmaceutical industries.

As of September 2017, the College was investing

£3.5 million in the tobacco industry, nearly £9 million in the fossil fuel industry, £3.1 million in the arms industry, and over £16 million in pharmaceuticals, out of a total fund of over £266 million.

These investments include those where the College has directly invested within a company – for example, their £496,000 investment in Exxon Mobil – and those where they have placed money in an investment portfolio containing said companies. These holdings make up almost half of all the money the College has invested.

In response, Rhidian Thomas, Imperial College Union's Ethics and Environment Officer,

told *Felix*: "I'd like to congratulate Imperial on succeeding in bringing together a comprehensive selection of some of the most ethically dubious companies around, all in one portfolio. It's staggering that anyone in College thinks it appropriate for a university – a charity even – to give so much money to the arms and extraction industries. Even College's commitment to avoid investing in tobacco seems paper-thin, now that it's clear that it has millions invested in it through third-party funds; so much for "smoke-free Imperial".

Tobacco

Imperial has around

£3.5 million invested indirectly in the tobacco industry, through investment funds. Their investments include some of the major worldwide brands: through their largest two contributions to investment funds, Imperial have over £650,000 invested in Philip Morris, the maker of Marlboro cigarettes, which previously threatened to sue the UK government for "billions of pounds" of compensation if plain packaging was introduced.

Imperial also has £400,000 in Imperial Brands, and over £370,000 in Reynolds American, a subsidiary of British American Tobacco – the largest publicly traded tobacco company in the

world.

The investments seem at odds with Imperial's medical research, particularly that into cancer prevention and treatment. Smoking is linked to at least a dozen forms of cancer, and tobacco smoke contains more than 50 chemicals that can cause cancer. Smoking also has a number of other effects on health, particularly on the cardiovascular and respiratory systems, increasing the risk of strokes, heart attacks, and lung disease. Smoking is estimated to cause 6 million deaths each year, with 600,000 of those down to secondhand smoke inhalation.

Imperial has a number

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Show me the money



Fred Fyles – Felix Editor

This week has been an absolute killer, for a number of reasons. First and foremost, we've set up a dartboard in the office, meaning my day is now regularly punctuated by the steady 'thwack' of darts hitting board (or, more likely, the wall). It remains to be seen whether the *Felix* Office becomes more popular than the Union Bar. If it does, we'll start charging. But what has been taking up much of our time over the past couple of weeks has been our analysis of the endowment fund – the pot of money Imperial have set aside for non-academic activities, which they invest in order to generate more funding. Following a series of Freedom of Information requests, we were able to gather together data on the last few years of the fund's investments, and set about analysing it hurriedly. We quickly encountered a problem, however: while some companies were easily identifiable, other investments were placed in obscure funds, which often had hundreds of smaller investments within other companies. With a bundle of enthusi-

asm and a misplaced trust in the workings of Excel, we duly set to work, looking through thousands of pages of financial documentation to work out exactly where Imperial's money is going. The results made for surprising reading. While Imperial makes sure it has no direct investments in tobacco, through their funds they have over £3.5 million invested in various tobacco companies. Their excuse is twofold – that they can't know what is in these funds, and that their make ups change so quickly they can't keep

track. With all due respect to the College, these are poor excuses. Our team managed to find out exactly what these funds contained, down to the dollars and cents, over the space of a couple of weeks. We also found that some of these funds have contained tobacco since at least 2011, if not before. The endowment fund is an issue that comes up again and again, so there's absolutely no excuse for the College not knowing where their money is. Why care about the fund? You might not give much thought to the

investments; you might be too busy being buried under coursework. You might even think that investments in the fossil fuel industry is a good thing, since a small amount of the money will be going towards renewable energy – the College certainly seems to believe this. I disagree, but no matter. This story is important because information is important. Knowledge, as we are so often told, is power, and so knowing where the money is going is the first step to even beginning to try and change things. And it's your money as well. You are all part of Imperial, part of one larger community, and so decisions that the College are making are being made in your name. I, personally, like a number of other students I spoke to, do not want investments to be made in the fossil fuel, tobacco, or weapons industry in my name. Where these investments are being made, they should at least be done transparently. They are not. And this is where we come in. So please, give the story a read, and if it upsets you, let College know what you think – the change starts with us.

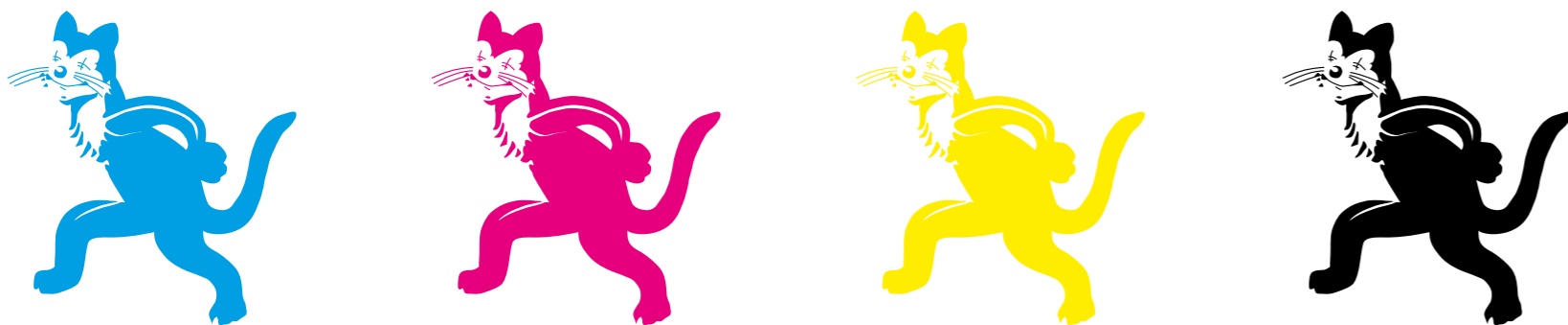


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NEWS

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Staff set to strike over planned pension pot changes as universities claim they can't afford to pay in

NEWS

Joanna Wormald
Deputy Editor

Members of the University and College Union are prepared to walk out over proposals that could slash their pensions.

Dozens of universities could be disrupted by strike action in a row over pensions. Members of the University and College Union (UCU) voted in favour of industrial action; 88% backed a strike and 93% supported lesser action, such as refusing to reschedule classes or providing cover for colleagues. 58.5% of UCU members at Imperial voted, in line with the national average of 58%. The ballot was opened last November when Universities UK (UUK), the group representing UK universities, announced plans to reform pension plans. 61 universities

could be hit by striking researchers, teaching staff, and lecturers. Dr Michael McGarvey, president of Imperial College UCU, said in a statement: "We regret that strike action would disrupt courses and classes, but also think that it is in the interests of students to support our dispute. We believe that it is the highly irresponsible behaviour of the employers that has caused this situation." One UCU member who voted in favour of a strike told *Felix*: "In real terms, my pay is cut every year due to below-inflation pay increases; our pensions are being attacked for the third time in five years; and all the while the scandal of vice-chancellor pay continues." Most higher education institutes are part of the University Superannuation Scheme (USS). Under this defined benefit scheme, employees earning less than £55,550 receive a guaranteed retirement income based on the value of their pension pot and any investment returns. Due to rising

costs, UUK intends to end the defined benefit scheme and switch all USS members to a defined contribution plan. This would link retirement income to the performance of the stock market, and means retirement income could decrease by 20-25%. (Although an analysis by Professor Michael Otsuka at the London School of Economics suggests employees may lose up to 60% of their pension by switching to the new scheme.) A UUK spokeswoman said: "Without reform now, universities are likely to be forced to divert funding from research and teaching to fill a pensions funding gap." The USS claims to have a funding deficit of £7.5 billion. UCU disputes these figures. Universities minister Sam Gyimah wrote to fellow MP Ellie Reeves, saying: "An independent report commissioned by the USS concluded that universities with USS schemes would remain strong and stable for at least the next 30 years."



Staff strikes could cause chaos as 61 universities across the country // Dave Pickersgill

Felix's UCU source said: "The large profits made by UK universities show the money is there, they are just unwilling to spend it on retaining high quality staff." "Many of my colleagues have discussed leaving academia because the pay difference between academia and industry is now so great. I could easily earn double what I do now if I went into industry," they added. *Times Higher Education* has reported the reluctance of several universities to continue paying these increasing

costs. Imperial is one of those universities supporting the "necessary" move to defined contribution plans, with Imperial provost James Stirling stating the USS "is not likely to be sustainable". In 2015/16, Imperial paid £80 million into pension funds. Its profit for the same time period was £78 million. Since 2015, Imperial has reduced staff expenditure (i.e. salary and pensions) from 55% to 53%. When strike proposals were first floated last November, Dr McGarvey said: "Imperial has spent

nearly £500 million of its own money over the last three years on its estate. The employers cannot plead poverty, and any claim that fees will have to be raised to pay for staff pensions has no basis in fact." UCU general secretary Sally Hunt said the USS "already offers fewer benefits than other schemes available in universities, and the proposals would make matters worse". She previously criticised the ending of the USS as "the worst proposal I have received in 20 years of representing staff".

Leaking library closes recently re-opened area

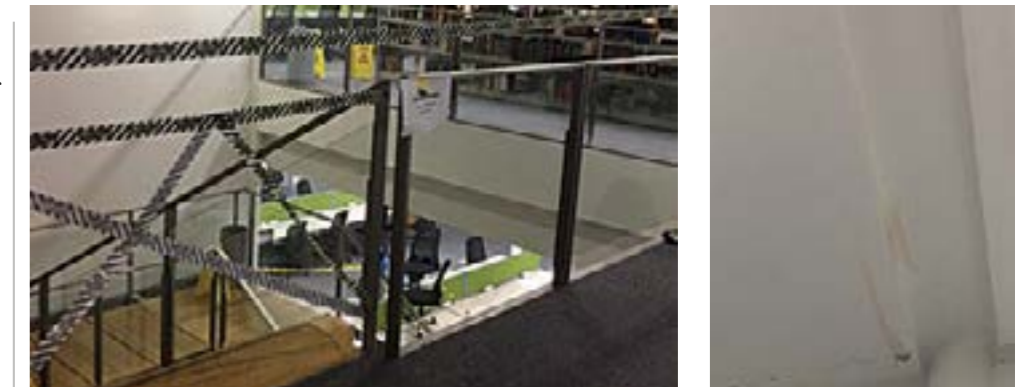
NEWS

Joanna Wormald
Deputy Editor

A water leak has closed part of Central Library. The stairs connecting floors 4 and 5 were closed off on Monday and, at time of writing, remain inaccessible. The news was announced by the library's Twitter account on Monday morning. Despite

the disruption, floor 5 remained open and accessible via the elevator and alternative staircases. No electronics were affected. The ceiling, however, appears to show signs of water damage. One student who was on floor 5 at the time told *Felix*: "Security asked half of floor 5 to clear out while they started taping around the area near the leak. They already had four empty bins around the stairs to collect water dripping from the ceiling.

They then asked a small part of floor 4 to clear out too, in order to tape off the stairs. It took about 30 minutes total." Levels 4 and 5 re-opened last month after several months of improvements to the cooling and ventilation systems. 400 desks were also replaced, most of which now have plug sockets and USB charging points. Levels 2 and 3 are expected to undergo similar renovations this summer, with work expected to



Water leaks are the latest problem to affect Central Library // Felix

be completed by the start of the next academic year. The total cost of these developments is

reported to be £11 million. A Freedom of Information request made by *Felix* last June revealed this to be

the most expensive refurbishment Central Library has undergone in the past decade.

Imperial's £3.5 million investment in tobacco among

Cont. from front

of research projects looking into preventing cancer in the future. The Department for Cancer and Surgery, part of Imperial's Faculty of Medicine, states "one of our major objectives is to enhance cancer prevention". The department currently has 29 research groups working on cancer prevention, detection, and treatment.

In a statement, ICSM Heart – an Imperial College Union society for those interested in cardiology or cardiothoracic surgery – told *Felix*: "It has been well-established that both first- and second-hand smoking are damaging to one's general health, and in particular to your cardiovascular system. There is no level at which smoking is safe and it kills a great number of people worldwide every year. In our view, an institution committed to fighting diseases should

do so on all possible fronts and should consider its corporate social responsibility. There are plenty

"Further investigation showed some of the investment funds had included tobacco since 2013"

of other ways to invest money sensibly."

Tobacco companies have also been indicted in manipulating scientific research. A 2007 study found tobacco companies funded and used scientific studies to undermine the link between second-hand smoke and health

problems. One of the authors of the paper, which was published in *Cardiology*, said: "The tobacco industry's efforts at manipulating scientific literature as a way to serve their economic and political needs continues to this day."

A College spokesperson told *Felix* it was "College policy not to undertake research to develop or promote tobacco products or to directly invest in tobacco companies". While fund managers are "instructed not to directly invest in tobacco companies, some investments are in managed funds. The College and its external fund managers have no control over the composition of those funds, which change on a continual basis."

However, further investigation by *Felix* showed a number of these funds have consistently included tobacco in their portfolio. Fundsmith

Equity Fund, for example, into which Imperial has invested since at least 2013, has had significant holdings in tobacco since its establishment in 2010. Imperial currently has over £11 million invested in the fund, more than double what it had invested four years ago.

Fossil Fuels

Imperial was also found to have nearly £9 million invested in the fossil fuel industry. £6 million of this was directly invested in companies supporting and undertaking coal, oil, and gas extraction; £3 million was through investment funds.

Currently, the College has over £1.5 million directly invested in Royal Dutch Shell, the 7th largest producer of oil and gas worldwide. Shell has previously been accused of collaborating with the Nigerian government in the torture and execution

of activists, and crimes against humanity. A report by Amnesty International, published last year, concluded Shell's conduct in Nigeria "amounts to encouraging, and, at times, facilitating the horrific crimes and abuses committed by the Nigerian security forces".

The College also has £470,000 in Exxon Mobil, the 4th largest oil and gas producer. The company was previously headed by Rex Tillerson, who is now Donald Trump's secretary of state. As with Shell, Exxon has been accused of facilitating human rights abuses across the world. The oil company was sued by eleven Indonesian villagers in 2001, who claimed the company hired security forces to protect their pipelines. One complainant said the forces had "tortured him for several hours", during which time they "broke his kneecap, smashed his skull, and burned him with cigarettes."

Imperial has a further £280,000 in BP, £221,000 in Phillips 66, and £100,000 in Cairn, as well as £3 million in other fossil fuel companies through investment funds.

These findings come a few months after Imperial dramatically dropped in

"Imperial has £1.5 million invested in Shell, who have been accused of crimes against humanity"

the People and Planet University League Tables, which rank higher education institutions based on

their ethical record. This year Imperial slipped to 141st out of 154 universities, making it bottom of the Russell Group. Imperial received a score of zero for ethical investment, and People and Planet reported Imperial had accepted nearly £24 million in donations from the fossil fuel industry between 2009-2014.

While the overall amount of direct funding into fossil fuels has dropped by nearly £400,000 since last year, the amount Imperial has in investment portfolios has increased by over £15 million. A significant number of these funds include fossil fuel companies within their portfolios, meaning indirect investments are likely to have risen over the past twelve months.

The issue of investments within the fossil fuel industry has come under increasing scrutiny recently, as more universities divest from fossil fuels. Divest Imperial, which recently presented a petition to College signed by 1,700 individuals calling on Imperial to divest, said: "It's a scandal that Imperial puts so much money into the pockets of the planet's biggest carbon emitters. We will not stop pressuring college until it cleans up its act, divests from fossil fuels, and invests in the zero-carbon future we all want to see"

Imperial also has a number of departments dedicated to sustainability and climate change, including the Centre for Environmental Policy and the Grantham Institute for Climate Change. On its website, College claims it "recognises the effect that (our) opportunities and activities have on the environment", and "seeks to establish an ethos at all levels and in all departments towards

other findings in endowment fund analysis

protecting and improving the environment."

One academic told *Felix*: "It is no secret that Imperial has many financial connections with the fossil fuel industry, some of which support valuable teaching and research necessary for a low carbon transition. However, the College should place stronger emphasis on research and teaching orientated on mitigating and adapting to environmental challenges like climate change, air and water pollution, and rising sea levels rather than prolonging the use of damaging fossil fuels. The world looks to us to set the agenda of research; how can we lead from the front when our eyes are still squarely focused on the past and its former cash cows – fossil fuels."

Like the tobacco industry, a number of fossil fuel companies have been accused of propagating misleading science and data to install "uncertainty" in public debate on climate change. Exxon in particular knew about the contribution of carbon dioxide to global warming since the 1970s, and instead "worked at the forefront of climate denial".

A College spokesperson told *Felix*: "We share the concern that climate change is one of society's most important global challenges. That's why we are urgently working to find ways to mitigate the impact of fossil fuels while seeking viable alternative sources of energy. We believe that we can have the greatest effect by carefully optimising our endowment to invest in ground-breaking research and education."

Weapons

The analysis also revealed the College is

currently investing over £3 million in arms companies, the majority through direct investments. Imperial has invested £2.2 million in Lockheed Martin, which is the largest arms company in the world, with over \$35 billion in sales. The money Imperial has been investing in Lockheed Martin has dramatically increased since 2016, and now stands at nearly double what it was a year ago.

Lockheed Martin developed the missiles used in the Trident nuclear deterrent system, whose lifetime replacement costs have been estimated to be as high as £205 billion. Lockheed Martin is also responsible for production of the Javelin and Hellfire missiles, both of which were heavily used during the 2003 invasion of Iraq.

The university has a further £500,000 invested

"The amount invested in Lockheed Martin has doubled since last year"

in Mitsubishi Heavy Industries, which is the largest arms company in Japan, responsible for over \$3 billion worth of arms sales.

The university also has around £500,000 in indirect investments, including funding to BAE Systems and Rolls Royce, two of the UK's largest arms companies.

Pharmaceuticals

Finally, the analysis revealed Imperial currently has over £16 million invested in pharmaceutical



Imperial has £3 million in arms companies // Felix

companies, including some of the largest in the world. £9 million is direct investments, while £7.3 million is invested through investment portfolios.

The amount of direct investment has nearly doubled since 2013, and includes £2 million in Novartis, which last year made \$6.6 billion in profits. Imperial also has £1.25 million invested directly in Pfizer, and nearly one million pounds invested in GlaxoSmithKline (GSK). In 2012, GSK was made to pay \$3 billion in charges after they were found guilty of failing to report safety data and promoting drugs for unapproved uses.

While these pharmaceutical companies are responsible for the development of new drugs, there is concern about the role public funding plays in funding drug creation that disproportionately benefits companies' profits.

A 2017 report by

STOP AIDS and Global Justice Now found the UK government was the second largest funder for research and development into diseases predominantly affecting poor countries. However, they pointed out "there is no guarantee that patients in the UK and beyond will be able to access the medicines at an affordable price," and argued that "in many cases the UK taxpayer pays twice for medicines: first through investing in R&D, and then by paying high prices for the resulting medicine once ownership has been transferred to a private company". In 2016/17, Imperial received £143 million in public funding grants.

Felix spoke to Universities Allied for Essential Medicines (UAEM), a student-led organisation that lobbies to improve access to medicines globally: "If public institutions are to make investments in the stock market, it is

obvious that this should be done transparently, and with robust safeguards against these financial interests influencing what research is done, and what is done with the research."

"The research agenda – decisions on where research funding and efforts should be focussed – should be guided by the public interest and a spirit of scientific inquiry."

"Some students were concerned about public funding being used for big pharma research"

Students, scientists, and the public should be wary of profit motives guiding research decisions."

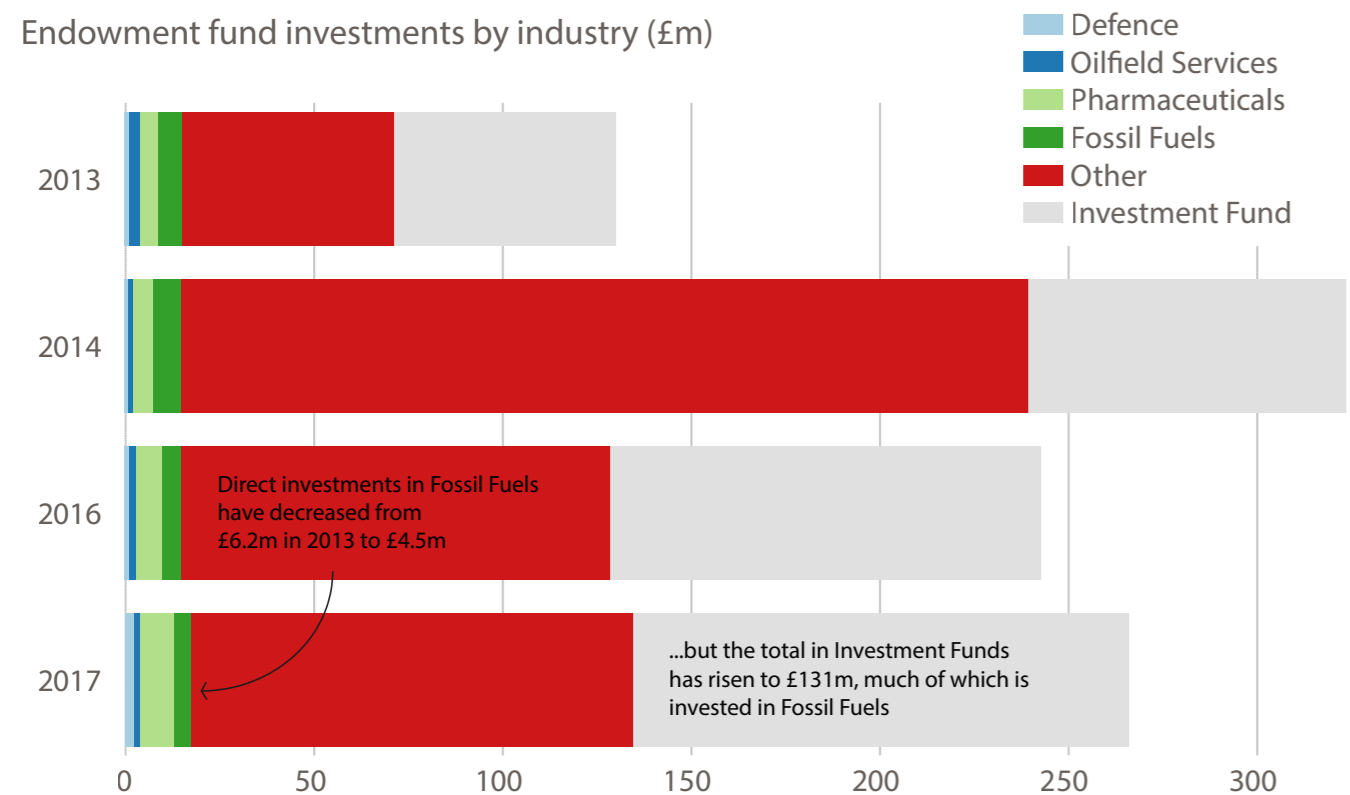
"It is difficult to see how conflict of interest can be avoided by Imperial if it invests in the same pharmaceutical companies that contribute to Imperial's research funding, and companies that may make profitable products out of Imperial's discoveries."

"Lastly, Imperial lacks a strong, public policy that would ensure that any medicines developed using the College's discoveries must be made accessible and affordable."

When asked about the makeup of the endowment fund, a College representative told *Felix*: "As an organisation with charitable status, we have a responsibility to carefully manage our assets to maximise their long term contribution to our academic mission. This includes optimising investment return to support the College's research and teaching activities."

As direct investments in Fossil Fuels have decreased, indirect investments in the industry have risen

Endowment fund investments by industry (£m)



Source: FOI

// Cale Tilford/@caletilford

NEWS

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Universities minister visits Imperial robots to announce extra medical funding (but skips the students)

NEWS

Joanna Wormald
Deputy Editor

Sam Gyimah has promised extra funding for medical projects on his first official outing as universities minister.

Science and Universities minister Sam Gyimah has officially kicked off his tour of UK universities by visiting Imperial and announcing extra funding for medical research

The Industrial Strategy Challenge Fund (ISCF) will provide £70 million to support projects such as manufacturing centres to speed up the development and production of medicines and virtual reality programmes to aid patient recovery.

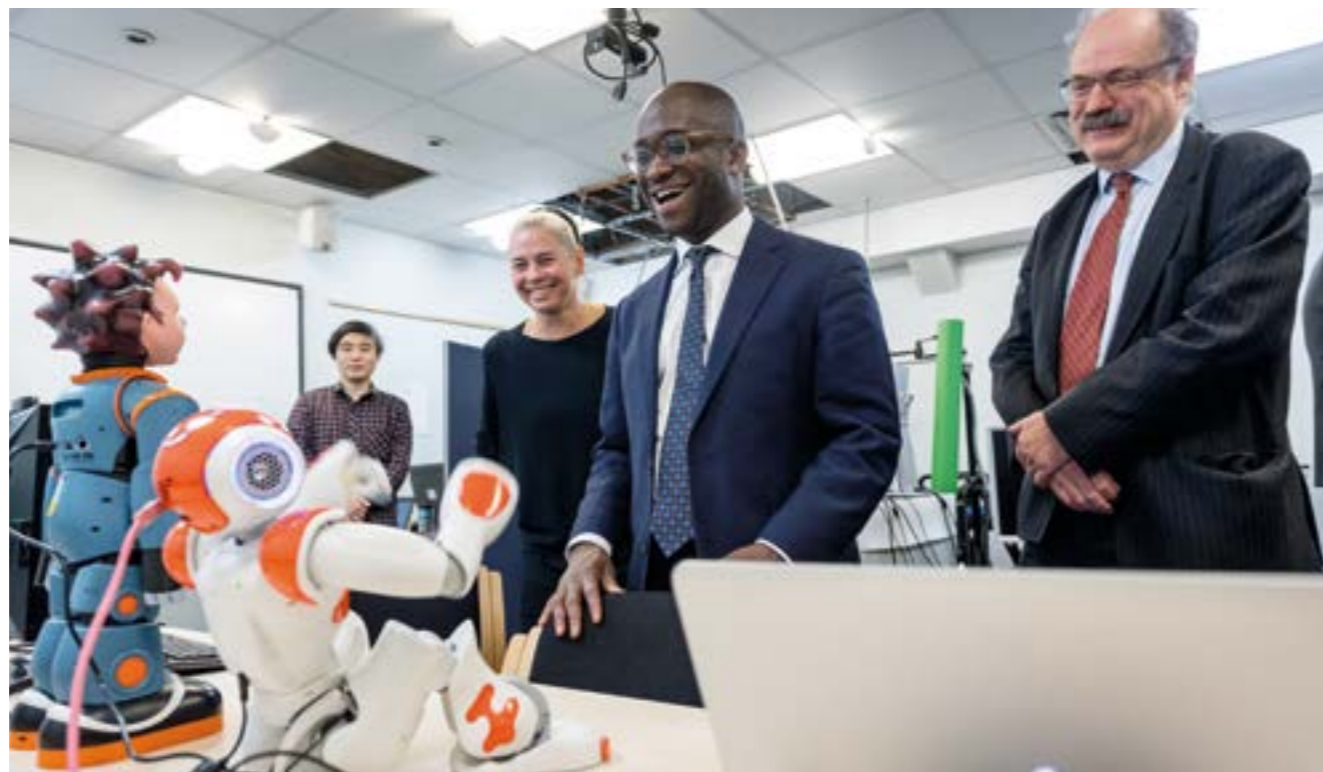
Gyimah met with several academics to see how robotics can improve medical practices. These projects include Zeno, a robot that helps autistic

people to understand and convey emotions; the iKnife, which detects whether tissues are cancerous; and the Da Vinci surgical robots. Gyimah was also shown how AI can be used to analyse brain scans to aid the diagnosis of conditions such as Alzheimer's.

Gyimah described the research being carried out at Imperial as "brilliant" and said the new funding from the ISCF will "unlock the innovations that will help people live

"Funding will unlock the innovations that will help people live better, longer lives"

better, longer lives". He added: "This investment will not only support high value, highly skilled jobs but will develop lifesaving treatments that



Sam Gyimah pledged to be a minister for students, not just universities // Photo credit

could change lives across the UK."

When Gyimah took over the role as universities minister from Jo Johnson in a cabinet reshuffle earlier this month, he announced he would be touring UK universities. In an article for *The Times*, Gyimah wrote: "I will continue to visit institutions across

the country to meet with vice-chancellors, lecturers and researchers, but also, crucially, to speak directly to students.

"I want them [students] to have a voice and be heard in the corridors of power. I'd like to be thought of as a minister for students as much as a minister for universities. Politics should be a

"I want students to have a voice and be heard in the corridors of power"

dialogue, not a monologue, so I'm looking forward to discussing tuition fees, safe spaces, access to higher education, and our potential post-Brexit, in a robust and honest fashion."

It is not known whether Gyimah spoke with any students during his visit to Imperial.

Oxford Student Union continues NSS boycott

NEWS

Joanna Wormald
Deputy Editor

Oxford Student Union (OSU) has voted to boycott the National Student Survey (NSS) as part of its protest against "the increasing marketisation of our education system".

The OSU resolved to continue its boycott of the NSS until controversial reforms to the higher

education sector are withdrawn. These include the Teaching Education Framework (TEF), which links student satisfaction to the quality of teaching at universities. In 2016, the Royal Statistical Society stated "there is no reliable association" between student satisfaction and teaching quality.

The motion presented at the OSU student council meeting states: "The TEF does not adequately measure teaching quality." It adds: "The

NSS has been discredited as a measure of assessing teaching quality. Its results have also been proven to reflect racial and gender bias."

This is the second year in a row that OSU have boycotted the NSS over a continuing row about the TEF. Under original plans, NSS scores would constitute one of three metrics used to rate universities as gold, silver, or bronze institutions. Although prime minister Theresa May announced

in October that tuition fees would be frozen for the upcoming academic year, there is no indication that this freeze will continue after 2018/19. This would allow universities to raise their tuition fees in line with inflation (or up to 50% of the inflation rate in the case of bronze-rated universities).

In response, the National Union of Students (NUS) led a boycott of the NSS last year, in which 25 individual student unions participated. ICU

"The NSS has been discredited as a measure of assessing teaching quality"

rejected a motion to join the boycott on the grounds that the motion had been submitted too late. The

OSU reports that its campaign against linking the NSS and TEF reduced the University of Oxford's response rate from 59% to 31%. This meant the results could not be used, as the minimum response rate for inclusion in NSS data is 50%. A total of twelve universities were omitted from last year's NSS data due to low numbers of respondents. Imperial's 2017 NSS response rate was 74%.

NEWS

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Imperial most unequal university in England; Union Council rejects motion for Social Mobility Officer

NEWS

Joanna Wormald
Deputy Editor

Fred Fyles
Editor-in-Chief

UCAS data have revealed that Imperial has overtaken Oxbridge to become the least equal university in England.

Imperial has the largest gap between numbers of students and students from disadvantaged neighbourhoods. This makes Imperial the most unequal university in England in terms of socioeconomic status.

"Imperial's entry rate for students was eleven times higher for those from well-off backgrounds"

Data from university admissions body UCAS reveals, that for 70 out of 132 institutions analysed, people from well-off backgrounds are twice as likely to attend university than those from disadvantaged neighbourhoods. Ten universities had a ratio of more than 9:1. Imperial's entry rate for students from advantaged areas was eleven times higher than for disadvantaged students.

This is the first time neither Oxford nor

Cambridge had the largest equality gap. Oxford was the second most unequal university, while Cambridge was the eighth. Although both are in the top ten for socioeconomic inequality, Oxford and Cambridge have narrowed the gap in their entrance rates. Imperial is one of two universities in the top ten to have become more unequal since 2010. (The University of Bath also showed a slight increase. Applications to Bath have fallen in the wake of a scandal over its vice-chancellor's pay.)

Seth Fleet, the lead data scientist for UCAS, warned the results should be interpreted with caution. Universities with large numbers of students from London or Scotland tend to have worse entry rate ratios due to fewer people living in areas classed as the 'most disadvantaged'. Applicants from disadvantaged areas are less likely to achieve high grades at A level or equivalent and the data does not consider offer rates. A number of universities also recruit a third fewer students since 2010.

"If we want to get to a point where things are far more equitable in terms of participation in higher education," said Fleet, "the way to do it is to encourage more people to apply rather than changing offer-making practices."

In response to the data, a College spokesperson told *Felix*: "We firmly believe that an Imperial education should be open to the best and brightest students, whatever their background."

"We have a broad portfolio of activities, including working with schools, colleges and community organisations to inspire, raise aspirations, stimulate

interest in STEM subjects and support attainment from primary school through to A-Levels. We also offer the most generous bursary scheme of its kind of any UK university, as well as a wide range of scholarships. However we know that there is more we can do."

"We are working to review our outreach strategy to understand how we can improve."

The gap in admittance rates between socioeconomic groups was highlighted in Union Council this week, where a paper for the creation of a Working Class and Social Mobility Liberation Officer role was defeated. The paper, which was proposed by former Council member Lloyd James and seconded by a number of Council members, argued that "issues faced by students from economically disadvantaged backgrounds are sufficiently unique to merit dedicated individual representation."

Fintan O'Connor, Deputy President

(Welfare), spoke against the paper. He told *Felix*: "While we all share the motivation behind the paper, the proposal could be improved to tackle this

"The paper, which proposed a Working Class Liberation Officer, was voted down"

important objective more effectively." O'Connor cited debates at other student unions, which suggested "the role would be tokenistic at best, and would function more to single out than to represent".

Shervin Sabeghi, the Royal College of Science Union (RCSU) Welfare Officer, was "very disappointed" by the Council response to the paper.

"The general

impression from the opposition was that it would be difficult to combat the problems underprivileged students face, so we shouldn't bother to try. There was a clear 50/50 split between those who voted for/against the paper – the DPW must investigate further into the student opinion of this role," he said.

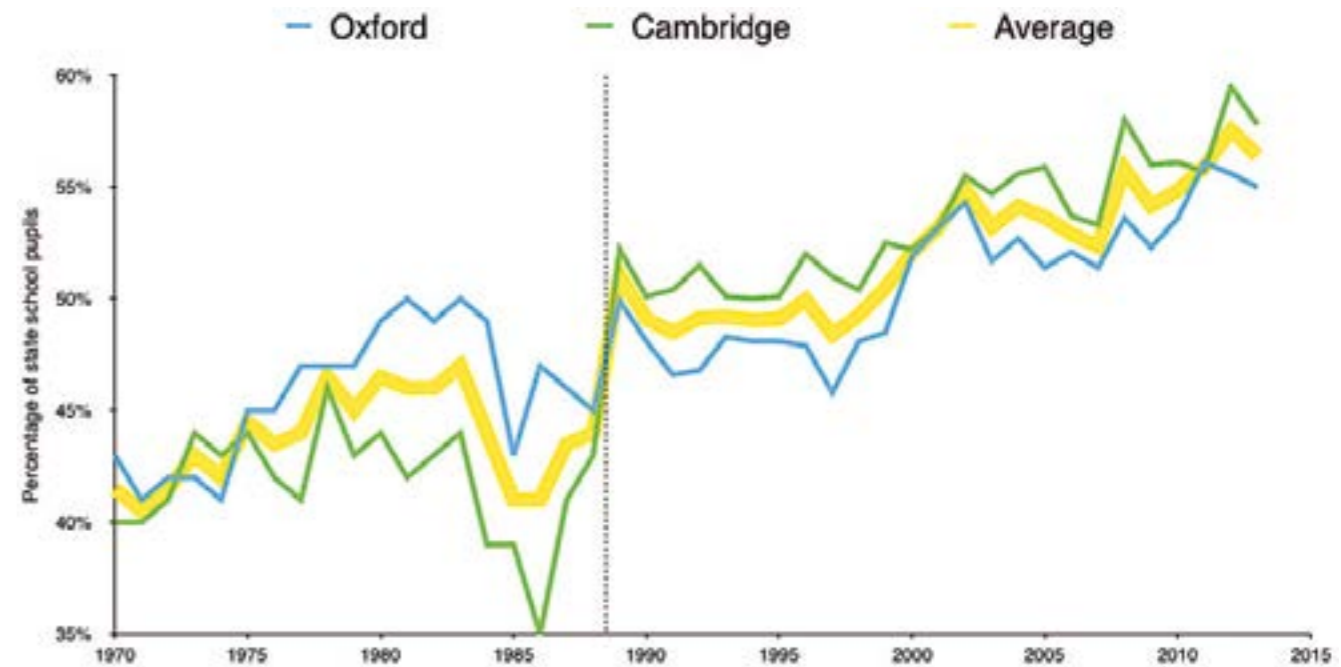
James, who proposed the paper, on the admissions gap data revealed today: "These data show that Imperial remains a bastion of economic privilege. Perhaps it is no wonder that Council shot down a motion to create an officer responsible for representation of working class students. We will continue to campaign for greater representation for these students."

Ariana Sadr-Hashemi, Mental Health Officer, highlighted the need to "remain aware of our biases regarding admission" in response to the UCAS data. "Clearly we are not doing enough to ensure that we attract and admit all students,

rather than just those from private schools," she told *Felix*.

She said arguments that the role would be "set up to fail" and the officer "wouldn't be able to do anything", "demonstrate an animosity towards not just a Social Mobility Officer by the work of Liberation Officers as a whole." She added: "My colleagues have done absolutely fantastic work this year, and to hear their work dismissed during this meeting was incredibly insulting not just to them, but to all of us who work to make the campus more inclusive."

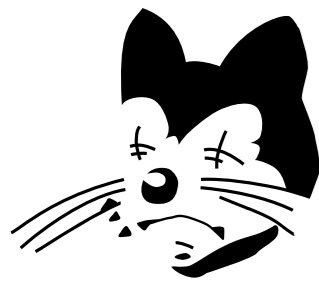
The Liberation Review, which is being carried out this academic year, is looking at the structure of the liberation aspect of Imperial College Union. O'Connor told *Felix*: "The proposed extension to our liberation & community officers should be based on a partnership with the students it would represent, to do justice to our strategic values: democracy, inclusivity, leadership and partnership."



The percentage of Oxbridge entrants from state schools has gradually increased // Wikipedia

COMMENT

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Grumpy Bastard hates new *Black Mirror*

Is there anything bleaker than Charlie Brooker's vision of humanity's future? Yes. Grumpy Bastard's reaction to the whole thing.

COMMENT

Grumpy Bastard
Comment Writer

I watched the fourth series of *Black Mirror* very recently. For our American and mentally impaired readers, note the use of the word series and not season, as I am referring to a television programme and not a time of year, or an attempt to make food taste edible. Americanisms are a very frustrating part of life, but with government shutdowns galore there is an ever increasing chance of a civil war, so hopefully we can take back the colonies and kick some sense into them.

I did not enjoy the latest series of *Black Mirror*. I had high hopes for this viewing experience as the previous episodes were very strong and also involved some prophetic

elements. For those of you unaware please see David Cameron fucks a pig and angry gummy bear is a little less controversial than Trump. Having watched it, and read the mediocre reviews in this excuse of a paper I decided to do my own. In the comment section. Because fuck you.

The first episode was every neckbeard's wet dream, trapping those that bully you in the outside world into some kind of hellish nightmare and tormenting them in perpetuity. The main reason I hated this episode was that it ended in a morally satisfying way, when in reality, that creepy engineer bloke would be committing every sex related crime that he could think of. By setting the whole thing as a "tasteful" universe, the writers deftly avoided the ethical issues surrounding nudity in VR and the terrifying

position of possessing 3D nudes of someone from a DNA swab.

"Murdering people that work in insurance is essentially mercy killing"

The second episode was a little better. The concept of using a far fetched technology to be a far more controlling parent was interesting, but clearly the writers had never heard of the Turpin family. Who needs a high tech brain implant when you can just chain all your kids in a basement. So much cheaper.

The third episode was quite frankly ridiculous. Essentially it is driven by

a device that allows an insurance saleswoman to view people's memories to settle claims. That and a murderous psychopath that decides that killing everyone is the best way to minimise the disruption to her life as a successful architect. Quite frankly I see no problem with murdering people that work in insurance as it's almost a mercy killing, but in the end, the killer is found out by an inconveniently placed hamster. The problem is that hamsters have terrible eyesight and are mostly driven by a need to shag and/or murder any sexual competition before dying of a heart attack due to over-excitement or a surfeit of South Americans.

The fourth episode was Hang the DJ. Like the first episode, it was based in a weird virtual reality run from your phone to try and find the perfect mate. The thing was that they were

in the same bar to start with. I pity anyone using this program in Metric.

The fifth episode was called *Metalhead*, for some reason. I'm fairly certain that the dog robots were based off the Boston Dynamics creation that looks similar, but is mostly abused by humans as opposed to hunting them down and shanking them. I feel that the concept of dangerous AI has been hugely over-explored in many different genres. *Black Mirror* would probably be doing itself a favour if it looked real life semi-autonomous weapons in the face and shat itself. I also failed to understand why it was shot in black and white. Many critics called this "bold," but I'm afraid that colour TV was invented for a reason: because it's better.

The sixth episode is the worst of the batch. *Black Museum* is a pathetic

attempt to canonise the whole of *Black Mirror* and place it all within one universe. I don't think I'm alone when I say this is a terrible idea. *Black Mirror* all taking place in the same universe only serves to place limits on what it can explore next. There are some truly groundbreaking technologies that will change the way society works, and if this programme does not do them justice then another media form will have to. It'll probably be a book, which means no one'll ever read about it and we'll stumble blindly into a dark future dominated by Jeff Bezos, Mark Zuckerberg and Elon Musk, all fighting to see who can control the most souls to power their life support machines.

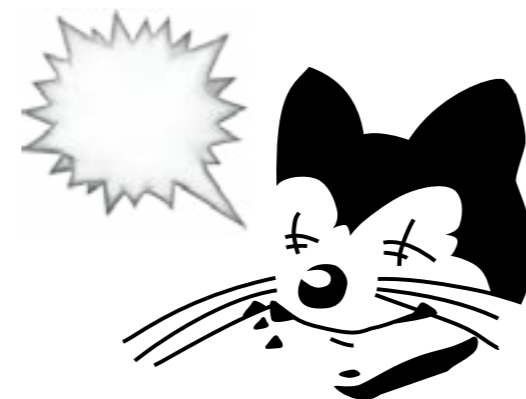
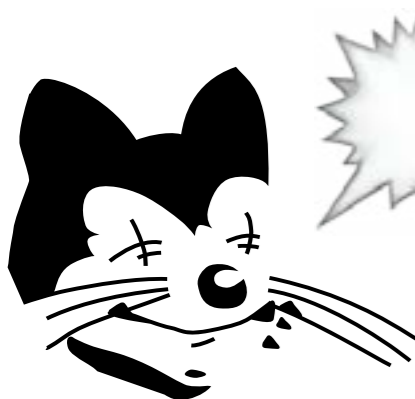
Warning: Spoilers behind. Because also fuck you.

Felix presents...

WE NEED TO TALK ABOUT...

WHO IS TO BLAME FOR THE LACK OF PEACE BETWEEN ISRAEL AND PALESTINE?

OUR NEW DEBATE SHOW WILL BE BROADCAST LIVE ON THE FELIX FACEBOOK PAGE 4PM, 31ST JANUARY



COMMENT

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COMMENT

Alan Perfect
Comment Editor

There is absolutely no doubt that free speech at universities in the UK and the US has hit a low point. There is an obsession with keeping students in their safe spaces in order to be protected from any kind of ideas which they might find offensive. This strategy makes sense. It is, after all, the easy path to take. UC Berkeley took the hard path and had to spend about 600,000\$ on security for an event in which conservative speaker Ben Shapiro was to speak. A similar free speech problem is found here in the UK, which is probably why (now ex-minister) Jo Johnson had called out universities and threatened them with fines over their so called "non-platforming policies".

Students are being protected from ideas that are not their own, and this is creating a culture akin to the protective parent who doesn't let his children play outside for fear of getting sick. They don't develop a response mechanism to deal with outside threats, and this isolation has greatly contributed to the rise of Trump and Brexit. The left was so isolated from the rest of the world that real discussion with the other side happened less, not more. After years of this kind of isolation, any kind of concern about immigration was not discussed, but dismissed as racism;

The rise of an unlikely figure in the defence of free speech

As Jordan Peterson arrives to the UK to promote his new book, Alan Perfect offers his take on what this pop-star intellectual has to offer.



Peterson on his controversial interview in Channel 4//YouTube

the concerns of white working-class men were largely ignored while their incomes stagnated, their employability decreased and their life expectancy declined. It makes perfect sense that right-wing populists would fill that gap of concern that the left was never ready to even begin to address.

In light of this crisis of dialogue an unlikely "hero" of the defence of free speech has arrived: University of Toronto's in-house public intellectual Jordan Peterson. A clinical psychologist by training, this professor gained notoriety after a viral video in which he was seen arguing with trans activists over the use of their pronouns. He blatantly opposed laws in Canada promoting compulsory use of trans pronouns and became popular after that by attending talk shows in defence of free speech. With over 600K followers on YouTube, where he has

uploaded a large amount of lectures, he has become an internet personality.

In order to understand his approach to the defence of free speech, I recommend watching his recent heated interview with Channel 4's Cathy Newman, which he did in his visit to the UK to promote his new book. The key moment came when asked why his right to free speech should trump a trans persons right not to be offended. He replied: "In order to be able to think, you have to risk being offensive. Look at the conversation we're having. You're willing to risk offending me in the pursuit of truth. Why should you be able to do that? It's making me pretty uncomfortable." This response pretty much sums up what he thinks about the issue.

This follows on, however, from his critique on the culture of victimisation that stems out from identity politics.

It's interesting how he takes on questions on supposed "oppression by the existing social structure of the western patriarchy". He argues that dominance hierarchies are not social constructs, but biological realities that evolution hardwired into our minds, as lobsters, which separated our evolution trajectory about 350million years ago, also have these structures.

While his popularity rose, a lot of his work came to light, revealing a much deeper (and potentially less controversial) part of his thinking. You discover good practical advice from a psychologist combined with theoretical, pseudo-intellectual grandiose ideas which could potentially pass as philosophy. I loved how he explained the origins of the concept of sacrifice: you'd think primitive cultures are doing something that's a bit odd by burning their food or their possessions (maybe even some

people). His insight is the idea that these cultures were experiencing a revolutionary realisation: you can forestall gratification now, in the present, and get a payoff in the future. The discovery of sacrifice was mankind's discovery of the future.

He loves explaining religious concepts using Jungian archetypes, is obsessed with the Soviet Union—you could play a drinking game with the amount of times he mentions Solzhenitsyn's

"His approach to motivating people to live full and meaningful lives is what's interesting"

Gulag Archipelago in his lectures—and passionately fights the waves of meaninglessness that arise from the ashes of this postmodern world.

What I find compelling about him, though, is not really his rich underlying set of ideas. They are interesting in their own way, but have the potential to be fully dismissed as pseudo-intellectual charlatanism. I haven't decided if this is true yet, but the first interview he had with Sam Harris on the Waking Up Podcast ended up being a two-hour discussion on the nature of truth which, a priori, seemed to expose him as an intellectual fraud.

No, it is not his set of ideas that's interesting, but his approach to motivating people to pick themselves up and live a meaningful life. The advice tends to go along these lines: stop saying things that you know to be untrue, have an aim in life, and organise your life around that aim starting from simple accomplishments. Cleaning up your room is the most basic one (he insists so much on this that it has become a meme) because your room is a part of the cosmos you can control even if you're a complete mess of a human being.

There is a danger, however, to all his popularity as a pseudo-intellectual YouTube superstar. His hard stance on identity politics and certain ideas of the left has gained him some support from factions of the alt-right. It probably makes no sense to try to categorize him into some part of the political spectrum. If I had, I'd probably call him a classical liberalist. But his notoriety has led to red-pillers, 4chan shit-posters and alt-righters to become a slight part of his following, creating a sort of cult-like following that can make the average listener a bit uneasy. And the temptation to pander to these groups will always be there, considering he gets about \$30,000 a month on Patreon donations. Let's just hope he doesn't fall, and keeps focusing on getting people to attempt to live meaningful lives in the ocean of chaos that is the world we live in.

COMMENT

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The endowment fund: to divest or not to divest

As Imperial publishes the results of its endowment fund, Shaul Rosten argues that Divest has a long way to go and needs a new way to do it.

COMMENT

Shaul Rosten

Comment Writer

Divest Imperial is a movement urging the University to divest its endowment investments in fossil fuel-related companies, an approach similar to that taken by many large pension funds in recent years. This week the *Felix* team has procured data from Imperial, giving a rough breakdown of the investment areas of the endowment funds, which totalled over £266m in 2017.

Although direct fossil fuel investments comprised only 1.7% of the total portfolio, supporters of the Divest Imperial movement will be disheartened by the fact that this figure remains almost steady from 2016, being reduced by a mere £400,593; this feels more like a tailwind of some poor investments, rather than an active divestment strategy. In addition, the University only explicitly stated their direct holdings in various sectors, with over 50% of the fund included in various investment portfolios. Upon closer examination of the precise contents of the various funds by the *Felix* team, it was determined that, through these investment funds, an equivalent of £3.5m was invested in tobacco companies, and an additional £2.8m in fossil fuel companies, on top

of the direct fossil fuel holdings the University explicitly stated.

Their reasonable demands for transparency aside, however, the Divest Imperial movement seems, to my mind, a slightly flawed approach to ensuring that the University upholds its moral standards in a world of serious climate concerns. For the first part, is divestment of fossil fuel holdings – which, at £8.8m (including oilfield services), are hardly noteworthy from the corporation’s point of view – actually going to have the slightest

“Reasonable demands for transparency aside, divestment seems to be a flawed approach”

impact? There are plenty of wealthy climate change sceptics, and sceptical organisations, who would happily purchase these shares and buoy the industry, with or without Imperial’s help. That is not to say that because some people are willing to do bad things, so should we; rather, I would hope that instead it makes the Divest Imperial movement think more carefully about the most effective way of deploying the capital Imperial



Imperial’s wet dream // Flickr

has at its disposal. As a shareholder (dependent on the class of shares it owns), Imperial has a seat at the table, and this has been increasingly used by investment vehicles to demand greater Environmental, Social and Governance (ESG) awareness and performance from their portfolio companies. Imperial could leverage this exposure to the industry, and partner with similar minded shareholders, to demand from its portfolio companies greater R&D into renewables, and a weaning off of environmentally damaging fossil fuel projects. This would actually engage the companies that are doing the damage, and proactively champion the causes of conservation and environmental protection, rather than simply walking out of the room whilst they do

it. This jumps straight onto the second issue that Divest Imperial have not addressed: that some of the major fossil fuel corporations are some of the biggest investors into renewable technologies in the world, and the capital Imperial have placed into them allows the University to put their money where their mouth is, betting on companies such as Royal Dutch Shell, who have plans to increase their annual renewables R&D spending to \$1Bn+, and who have made bold pledges to tackle global carbon pollution. Whilst the data provided by Imperial in no way makes it clear that this is their approach to fossil fuel investment, Divest Imperial must consider these possibilities before demanding a blanket divestment, which may achieve little toward

their overall moral aims. There is a third and final point also yet to be considered by Divest Imperial. Yes, the fossil fuel industry is a generally damaging one for the environment, but, as pointed out above, Imperial’s divestment from that industry will not deter them from continuing their nefarious practices. However, what it might do is hamper the returns of the Imperial portfolio, as academic studies have previously posited. If Imperial holds these investments, however, and sees the financial benefit of doing so, it can use this capital to invest in the various cutting edge renewable technologies that flow freely from the academic work it undertakes. That way, at least some of the profits from fossil fuels will be being put to good use, instead of ending up

in the pockets of those to whom climate issues are not a great concern.

Overall, I think that Divest Imperial make an important point: that, as a public body that should be an example to wider society, it is important that Imperial – and other Universities with large investment trusts – embrace an attitude of ownership and transparency, setting out clearly and regularly their investment philosophies, holdings, and impacts. However, the simple cry for divestment is perhaps not the most constructive way forward. Divest Imperial, although sound in principle, must consider the nuances of the argument, to forge a constructive plan to enable Imperial to use its financial position to best tackle global challenges, in a maximally effective way.

SCIENCE

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Connect with conservation – successes in 2017

SCIENCE

Steve Allain

Science Writer

2017 was a peculiar year for us all, with world politics turned on its head, as well as the United States of America pulling out of the Paris Climate Agreement. None of this seemed to phase the passionate and dedicated conservationists working around the clock to ensure that their species of choice would be here for future generations to enjoy. To fill you all with optimism moving into 2018, here are a few stories from the past year which highlight the fact that we are indeed on the right track.

One of the most shocking announcements, which took me

by surprise, was China's decision to shut down the ivory trade within the country. China put a huge amount of pressure on elephants for their ivory for both medicinal and decorative purposes. This ban does not necessarily

"If the Chinese authorities are committed to enforcing their ban on ivory, elephants might bounce back!"

halt the trade of ivory due to lucrative black markets, but if the Chinese authorities are committed to enforcing the new laws, then perhaps elephants

may just have a chance to bounce back!

A recent survey of the little-known Indus River dolphin from Pakistan turned up some very positive results. Scientists surveyed the dolphins over a month-long period, and now estimate that there are 1,816 individual dolphins remaining in Pakistan. These numbers are anything but compelling, but it is great news considering that when the first census was completed in 2001, there were estimated to be only 1,200 dolphins remaining. This is a 50% increase in numbers! Despite this, the dolphins are still listed as endangered on the International Union for Conservation of Nature Red List due to the growing threats of habitat loss, pollution, and drowning in nets. There is clearly still a lot to be done, but conservation



The elephants could make a comeback after China banned the ivory trade // CC

efforts are moving in the right direction.

A study published in September analysed the population trends of the world's seven sea turtle species and showed something truly amazing. The numbers of sea turtles as a whole are growing, which has further been helped by years of conservation efforts that have played a key role in the recovery

of their population. Sea turtles have historically suffered population declines due to hunting, accidental capture, drowning in fishing nets and the illegal harvesting of eggs. Again, this is very encouraging news, but we cannot grow complacent. Conservation depends on the ongoing commitment and collaboration of multiple parties to ensure

their hard work is not undone. You do not have to be a conservation biologist to make a difference: being active in your local community with conservation work can contribute to larger goals. Maybe in 2019, when we are looking back at 2018, a project you were involved in will be highlighted.

The Rocky Balboa of the animal kingdom

SCIENCE

Ignatius-Roy

Hillcoat-Nalletamby

Science writer

Competition and conflict is the bread and butter of the natural world. Individuals of almost every species compete for resources such as mating sites, partners, and food. The competition is fierce – often involving physical conflict with costly outcomes. Due to its costs, individuals assess themselves and their opponent's 'Resource Holding Potential' (RHP) to minimise damage and/or the need for conflicts.

Mantis shrimps are known to compete for

burrow sites used for feeding, mating, breeding and refuge from predation. Conflict occurs in both sexes, using striking second maxilliped appendages – regions of the mouthparts – to deliver high power strikes, and stabbing to puncture the opponents. Furthermore, Telson sparring – where individuals strike each other on their heavily armoured tail plates – also occurs.

A recent study examining conflicts in mantis shrimps (*Neogonodactylus bredini*) tried to determine what assessment models they use when determining RHP to choose whether to engage in a contest for resources. Three models exist: pure self-assessment, cumu-

lative assessment and mutual assessment. Pure self-assessment involves an individual assessing their personal RHP, with the loser stopping the fight once self-inflicted costs reach a critical threshold. Cumulative assessment involves an individual assessing themselves and their competitor's RHP, with the loser forfeiting once self and opponent-inflicted costs (physical injury) reach a critical threshold. Finally, in mutual assessment an individual assesses both their own and their opponent's RHP, with the loser bowing out when they realise they are of a lower competitive ability than their opponent.

The study involved placing two individuals,

resident and intruder, which were matched by body length and mass, in an arena containing a burrow.

"Contests between the mantis shrimp occur in a series of escalating stages"

Contests were analysed using correlational and sequential analysis methods to determine which of the three models were used by the shrimps. The winner

was defined as the individual that obtained the burrow after the contest.

Contests between *N. bredini* occurs in escalating stages including: eye tracking and approaching; visual or chemosensory behaviour; Telson sparring; and contest resolution. The researchers discovered that burrow residency status – i.e. resident vs intruder – was as important in the contest outcome. In random contests, resident individuals had a 49.6% RHP advantage compared to others, while in body-type matched contests residents had only a 9.7% RHP advantage. Similarly, body mass was an important determinant of contest outcome, with larger individuals able to

produce stronger strikes. Telson sparring was used by individuals for assessment and contest settling without death or injury by comparing body mass and RHP. Based on these results and through their analytical methods, researchers were able to conclude that mantis shrimps use the mutual assessment model, ruling out the pure self and cumulative assessment models.

This study resolves controversy around the type of experimental technique to employ when researching contests: a combination of correlational and sequential analysis is recommended, ensuring strong empirical testing that may be used in future contest studies.

How does climate change impact our mental health?

SCIENCE

Juan Ignacio Rubio Gorrochategui
Science writer

In a world where enormous amounts of information are provided nonstop via 24-hour television channels and digital media, it should not be surprising to find that news have a profound effect on mental wellbeing. Accounts of war and extreme poverty are already concerning for a significant part of the general public; however, all these problems pale in comparison to climate change.

Many people cannot avoid feeling some kind of existential angst when they are confronted with images of starving polar bears, melting glaciers, and tiny tropical atolls being devoured by increasing sea levels. Now, new research addresses in detail the different ways people react to global warming, exploring the implications this phenomenon has for public policy in the fight against this challenge.

The study was carried out by researchers at the University of Arizona using a sample size of

342 individuals. They classify the environmentally-concerned segment of the population, as those who are “aware of environmental problems and support efforts to solve them and/or indicate a willingness to contribute personally to the solution” in three categories: egoistic, social-altruistic, and biospheric. Egoistic individuals focus on the effects climate change will have on their own lives; social-altruistic people are more concerned about the impact on the general society, while the biospheric segment is more concerned about the colossal loss of wildlife and habitat degradation that is entailed in a pessimistic climate scenario. Each of the groups both show different levels of stress and anxiety, and express it in different ways. Therefore, their psychological coping strategies and ‘Pro-Environmental Behaviour’ (PEB) show significant differences.

The group whose mental health was taking the biggest toll due to climate change was the biospheric portion. They were more likely to show symptoms of depression and stress, and they had the strongest tendency for

PEB. They were also the most prone to using coping mechanisms in order to reduce their anxiety, e.g. wishful thinking about the relative unimportance of the whole phenomenon. The social-altruistic group, while less psychologically affected by climate change, still showed some degree of ecological coping and PEB. The section of the population which had clearly experienced the lowest levels of anxiety were the one formed by egotistic individuals.

The study stressed that ecological anxiety was not the only variable behind PEB, and that positive ecological coping strategies (e.g. becoming more aware of one’s role in stopping climate change and changing one’s lifestyle on this premise) were much more important. Thus, the article recommends addressing the egotistic segment of the population in future messaging campaigns against climate change, as “approaches that focus on concern for all life on the planet increase the risk associated with delaying climate change adaptation, exacerbating the potential for large-scale negative mental health effects in our society”.



Does the thought of mountains make you calm, or fill you with dread about climate change? // Wikimedia

A handkerchief in time



Don't keep it bottled up // Wikimedia

The Hidden Danger of Sneezing!

SCIENCE

Caroline Wolfe
Science writer

Everyone has someone in their life with an obnoxiously loud sneeze that he or she wishes they would at least try to stifle. As it turns out, stifling sneezes by pinching the nose shut with the mouth closed can actually be dangerous.

Doctors at the Department of Head and Neck Surgery at the University Hospitals of Leicester reported a case of a stifled sneeze so violent that it caused spontaneous perforation of the pharynx – an area of the back of throat – leaving its victim barely able to speak or swallow. This type of injury is most often caused by trauma to the back of the throat, which indicates that the forces produced during a ‘held-in’ sneeze can rival those felt in a blunt trauma to the neck. The man suffered from a perfora-

tion of his pharynx, more specifically his pyriform sinus, which is at a higher risk of rupture due to the lack of a secondary supportive muscular layer. Upon examination,

“He described a popping sensation in his throat followed by neck swelling so severe he could barely talk or swallow”

crackling sounds were heard in the man’s neck all the way down to his ribcage. A CT scan further verified the existence of air bubbles that had penetrated the muscles of the chest, otherwise known as cervical subcutaneous

emphysema. Due to risk of infection, the man was admitted to the hospital where he was tube-fed due to the pain associated with swallowing and administered preventative antibiotics.

Other than a blunt trauma to the neck, spontaneous perforation of the pharynx is thought to occur due to a sudden increase in intraluminal pressure in the oesophagus or pharynx. Infrequently it occurs due to forceful coughing or retching and is rarely caused by holding in a sneeze. Increased intraluminal pressure due to pinching the nose shut and closing the mouth during sneezing can also cause rupture of the eardrum – and rupture of cerebral aneurysms in the worst cases! Doctors warn that sneezing in this fashion is dangerous and should not be done. So, think twice before stifling that fifth-in-a-row sneeze or scolding your friend for a loud sneeze as you just may find one of you two in the emergency room.

The upcoming hair dye revolution

How techniques used in the pharmaceutical industry can pave a new route towards greener, safer hair dyes.

SCIENCE

Sarah Wong
Science writer

My aunt recently dyed her hair black, claiming that it would make her look younger. While her statement is highly debatable, it is certain that fashion consciousness is on the rise, leading to the growth of the hair dyeing industry. However, except for the chemists amongst us, people rarely put much thought into hair dyes. Why should we?

Firstly, there is much more science involved in this industry than you might imagine! Permanent dyes work by coupling precursors with various molecules, so the resultant coloured compounds are trapped in the hair and are resistant to shampoo removal. On the other hand, temporary

dyes simply bond to the surface of hair fibres, so they are easily removed by shampoos.

Whilst I appreciate not all readers are science enthusiasts, the newly generated Hair Dye Substance Database (HDS) is equally fascinating to all – it has opened the door to designing greener and safer hair colourings.

Although hair dyes are relatively safe, this multi-billion-pound industry constantly tries to improve their products by screening for chemicals that may cause allergies. Some chemicals in hair dyes have also been linked to water pollution, so sustainable and safer compounds are always needed. However, the research and development process can be lengthy and expensive, and this is where the database developed by the North Carolina State University can help.

The HDS is a publicly

accessible database that allows scientists to harvest the power of computers to minimise the experimental work required to develop

“The Hair Dye Substance Database has opened the door to greener hair colourings”

alternative hair dyes. This method, where informatic techniques are used to understand problems of chemistry, is known as ‘cheminformatics’.

Cheminformatics is widely used in the pharmaceutical industry to discover new drugs, but little research has been done to investigate its potential in the hair



Sarah's technicolour dream-hair // Wikimedia

colour industry. Hence, the research group in North Carolina creating the HDS via the compilation of 313 hair dye substances. The past and current commercial formulations of these compounds were curated and classified according to their structural and physicochemical characteristics. By employing an appropriate structural-property model, the HDS could help scientists predict toxicity, or skin sensitivity of different compounds.

In short, by manipulating and analysing the large database of information, scientists can filter out the irrelevant molecules early on, and focus resources on the more promising targets. Thereby, the development of new hair colouring products can be faster, cheaper, and more reproducible.

Nevertheless, there are limits to this technology. The computational models may not be able to discriminate strong/weak sensitizers, and the solvent

interaction cannot yet be fully simulated, thus the accuracy of the prediction is not completely perfect. Yet, this study showed cheminformatics analyses are a promising way for a new dye design. Furthermore, scientists can start to modify structures in the dye precursors to generate novel hair colourings with desirable qualities. If proven successful, a similar methodology could be used in designing other types of dyes too.

3 years on...

Misogyny at Varsity



- Players left stranded at the Stoop without transport
- Girls play to empty stadium as coaches leave early
- Sport Imperial staff allegedly overheard: “I don't care how those fat girls get home”

News, Page 5

Felix, 20th March 2015

Has anything changed?

This term, *Felix* is investigating misogyny at Imperial. Three years after Imperial College Women's Rugby was let down at Varsity, we want to know if anything has been done to change the on-campus culture.

We want to hear from you! Take our anonymous survey to tell us about your experience of misogyny and sexism while at Imperial. If you have got any questions, or want to take part in further research, please email felix@ic.ac.uk





Salieri was not a big fan of Wolfgang // Marc Brenner

Salieri versus God : *Amadeus* at the National Theatre

Lucian Msamati gives a powerful performance in a fantastic revival of Peter Shaffer's classic play about envy.

ARTS

AMADEUS



Where? National Theatre
When? Until 24th April
How Much? From £15

Indira Mallik
Arts Editor

Why do good things happen to terrible people? Who among us has not balked at the happiness and success of someone we consider to be objectively odious, absolutely awful? In the late Peter Shaffer's classic 1979 play, the virtuoso composer Mozart's very name – 'Amadeus', "beloved by God" – is an affront to the Viennese court composer Antonio Salieri. Whilst Salieri is assiduously virtuous, having bargained with God to be so in exchange for musical fame, Mozart is his opposite: selfish, infantile, and rude. Yet it is Mozart who is able to compose with seemingly

divine inspiration, setting down fully formed masterpieces on paper with effortless ease even as he cheats and curses and makes a general nuisance of himself. In contrast, Salieri's compositions, though celebrated at Court, are pedestrian. He, by his own admission is cursed only to be "a pair of ears" – alone able to recognise true greatness in Mozart but never able to match it. This he considers a personal betrayal by the Divine Creator, and thus pits himself against his God, vowing to silence Mozart as vengeance.

The play begins as, crippled with guilt in his dying hours, Salieri conjures up the audience as the "ghosts of the future", and confesses his sins, demanding absolution for his plots against Mozart. The years roll back as Lucian Msamati's Salieri rises slowly from his wheelchair and guides us through the backstabbing politics of 18th century Vienna. Msamati gives an arresting performance – at times he addresses the audience directly, else-

where offering commentary of his inner thoughts as his castmates stand in tableau around him or the orchestra, replete with 20 members of the Southbank Sinfonia, strike up. He is a commanding presence on stage, his voice thundering in rebuke to God, able to make the audience hang on the edge of their seats with a sharp remark. His Salieri cuts a tragic figure, a dignified man brought low – though not in material success – by caustic jealousy. Adam Gillen's Mozart offers a stark counterpoint: crass and insufferable, in the first act the young Wolfgang is irritatingly puerile, and Salieri's simmering resentment seems entirely logical. Yet as the play progresses, Gillen is able to suffuse his characterisation with pathos; his Mozart matures and is tempered by the misfortunes that come his way. It is not always a nuanced performance – far from it – but is an ultimately affectionate portrayal of a not altogether likeable character.

Adelle Leonce, as

Mozart's wife, Constanze Weber, is at once defiant and vulnerable, whilst Matthew Spencer brings plenty of comic relief to his role as Joseph II, the Hapsburg Emperor. Alexandra Mathie, Hugh Sachs, and Christopher Godwin all give fantastic performances as two imperious barons of the Court, and the Director of the Opera respectively.

In a production that hardly ever puts a foot wrong, one of the undeniable stars is Matthew Longhurst's direction. Shaffer's script demands a theatrical spectacle, designed by Jon Clark, creates a sumptuously cinematic experience. In one tremendous scene towards the end of the first act we watch as Salieri, upon opening a folio of Mozart's finest compositions, is overcome. Slight modulations of lighting pitch us from reality to the depths of Salieri's tortured mind. At first there is a slow, urgent thrum of the bassoons and trumpet, and the vestiges of the composer's comfortable front room are dragged off into the wings, Salieri is alone on an empty stage with nothing but the music, as the assembled orchestra, standing on an elevated stage, play *Mass in C*

childhood deal with God, the orchestra raise their hands in silent prayer, but they are not simply a reflection of Salieri's thoughts – when he asks them to play an excerpt from his sub-par opera *The Stolen Bucket* the orchestra decline, to great comedic effect.

The inclusion of the orchestra in this startlingly inventive manner, paired with the brilliant lighting, designed by Jon Clark, creates a sumptuously cinematic experience. In one tremendous scene towards the end of the first act we watch as Salieri, upon opening a folio of Mozart's finest compositions, is overcome. Slight modulations of lighting pitch us from reality to the depths of Salieri's tortured mind. At first there is a slow, urgent thrum of the bassoons and trumpet, and the vestiges of the composer's comfortable front room are dragged off into the wings, Salieri is alone on an empty stage with nothing but the music, as the assembled orchestra, standing on an elevated stage, play *Mass in C*

Minor. Then slowly the clarinet and violins join in on the higher notes, and as the majesty of music dawns on Salieri, an imagined Mozart joins the orchestra to conduct them in a frenzy of movement, and Fleur de Bray's crystal clear soprano rises above the instruments in a haunting Kyrie. Little by little, the stage on which the music is being played advances towards Salieri, and great beams of light, growing ever brighter, shine out towards the audience, casting the orchestra in silhouette. Eventually, with a great crash of percussion, Salieri, in both awe and despair, sinks to his knees. We in the audience cannot help but be moved.

This revival is nothing short of an epic undertaking. It may be the story of the self-proclaimed patron saint of mediocrity but Shaffer's brilliance is plain to see. Shaffer is considered one of the best British playwrights of the 20th century. There is no stronger evidence for this than *Amadeus*.

Rita, Sue and Bob Too – an exploration of power, class, and women's voices

Andrea Dunbar's masterpiece has come to the Royal Court at the right time. Despite being written in the 1980s, it has a worrying number of echoes in the #MeToo era.

ARTS

RITA, SUE AND BOB TOO



Where? Royal Court
When? Until 27th January
How Much? From £12

Fred Fyles
Editor-in-Chief

It was the play that nearly didn't happen. After the Royal Court's founder Max Stafford-Clark was accused of sexual misconduct, a decision was made to cancel the upcoming production of Andrea Dunbar's 1982 play *Rita, Sue and Bob Too*, which centres around the relationship between a married man and two 15-year olds in Bradford. The theatre said that putting on the play would be "highly conflictual" given the current climate, which is revealing the grubby undercarriage lurking

beneath the shiny facade of the arts industry. After intense pressure, however, they reversed the decision. It was the right move.

Dunbar was a singular voice in the world of British theatre before her untimely death at 29, and *Rita, Sue and Bob Too* reminds us of this – the actors all seem to relish her verbatim-esque dialogue, which manages to be humorous and heart-breaking in equal

caught up in the plot – they perfectly embody the cruelty that such an age group can engender, as well as the gaping insecurities that are the root cause. Dobson's Sue possesses a disarming sense of confidence, but has to face an abusive father at home, while Atwal's Rita is the more conflicted of the two regarding their situation. Atwal manages to brilliantly convey the yearning for belonging so common at that age – sending out vague smoke signals of her underlying emotions as a means of testing the water, lest she find herself exposed.

Between them there's Bob, played by James Atherton: a young man trapped within a marriage he dislikes, he knows how much (or little) attention he needs to pay to Rita and Sue to get them involved. Within the cramped car in which his character has sex with Sue and Rita, Atherton is able to bring a sense of physical comedy

"The actors all seem to relish Dunbar's dialogue, humorous and heart-breaking in equal parts"

measure. Gemma Dobson and Taj Atwal are brilliant as the two schoolgirls



Rita, Sue and Bob Too is a chillingly-topical play // Richard Davenport

to the role, providing the audience with plenty of conflicting emotions as we begin to sympathise with him.

Before the house lights went down, the woman behind me mentioned the film version of *Rita, Sue and Bob Too*. Directed by Alan Clarke in 1987, the film was described by my neighbour as "a bit of a light romp". The version we watch is anything but. Director Kate Wasserberg is well aware of the conflicts and tension at the heart of Dunbar's text. This becomes most apparent near the beginning of the play: as Bob takes Rita and Sue back home, he begins to ask increasingly inappropriate questions, before eventually having sex with each of them in turn. Atherton, Dobson, and Atwal all make use of the four small chairs that serve as the set, contorting themselves against each other as Bob's buttocks jerk up and down. It's a

funny scene, in the way we instinctively laugh at wibbling bottoms. But then the house light slowly come up, and the scene drags on for an uncomfortably long length of time. Go on, Wasserberg seems to be saying, look, and laugh if you can.

What seems shocking and daring about Dunbar's play is not so much the sexual aspect – indeed, it was based partly off her own experiences, and the current wave of accusations of misconduct show us that men taking advantage of women in lesser positions of power has never gone away – but rather the way she centres the working class voice, specifically those of women. Besides Sue and Rita we've got Bob's long-suffering wife Michelle (Samantha Robinson), and Sue's mother (Sally Bankes), as well as Rita's single mother – mentioned but never glimpsed. Through this cast of characters,

Dunbar is able to portray the chilling nature of a life of gradually receding opportunities: for Rita and Sue, the most important thing is to not get pregnant. As Sue's mother hauntingly "I was 23 years old when I had my first. I felt trapped. When you've had a baby it's not a thing you can put to one side and say 'I'm going to the pub tonight'. That freedom is gone".

The Royal Court's *Rita, Sue and Bob Too* is not an enemy of the #MeToo movement. Far from it. It might be one of the cultural artefacts that proves the best response to the current climate. Through raising up the voices of disadvantaged women, exploring the invisible traps that keep them engaged within a cycle of tragedy, *Rita, Sue and Bob Too* provides us with a generous, difficult, complex, brilliant exploration of power in its many forms.



Gemma Dobson, Taj Atwal, and James Atherton as the central cast // Richard Davenport

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Hello darkness, my old friend: First Aid Kit's *Ruins*

MUSIC

RUINS

Artist: First Aid Kit. Label: Columbia. Top Tracks: The Fireworks; Hem of Her Dress. For Fans Of: Laura Marling; Lykke Li. 39 minutes

Simran Kukran
Music Writer

The sad Swedish sisters are back with their fourth album, ten songs of crooning harmony and synth. *Ruins* is a breakup album so pure and candid it'll have you crying into your ice cream about heartache that hasn't even happened yet. The work is anything but stripped back – as with any of First Aid Kit's albums the produced, polished vocals

are the star of the show. Johanna and Klara Söderberg use their well-loved accessories of camp-fire guitar and synth, but add a twist of more keyboard and bass, setting tracks in this album apart from any other. Written while vocalist/guitarist Klara was mourning the end of a relationship, *Ruins* is beautifully bitter, a reflection on, what hindsight shows was, an inevitable ending.

The album opens with the tinny keyboard riff of 'Rebel Heart', quickly providing a sinister backing for the frustrated vocals. "Why do I keep dreaming of you? / Is it all because of my rebel heart?". The repetitive rhythm feels reluctant and pained. This sentiment, that Klara should know better and be able to control her emotions,

permeates the whole album. On Fleetwood Mac-meets-ABBA 'It's a Shame', she confesses

"A breakup album so pure and candid it'll have you crying into your ice cream about heartache that hasn't even happened yet"

"Sometimes the night cuts through me like a knife". 'Fireworks' is a clear highlight of the album and we are pulled

along on a lamenting 50s waltz with 80s guitar and keyboards. "Why do I do this to myself every time? I know the way it ends."

The self-berating continues on 'Postcard' "I went and broke my own goddamned heart". The jaunty percussion mirrors more constructive reflection. It is difficult to let go, and some connection is yearned for, albeit snarkily. "Send me a line to everything you've left behind". The album was recorded in Portland and the American influence is clear, especially on the plucked strings of 'To Live a Life'; even the accents become more American, and Klara is "on the interstate drinking cheap wine" with gloomy synth. The band's Swedish folk-pop roots are back on the bouncy 'Wild Sweet Love' and warbling 'Distant Star'. Title track



"I don't know what to do with my hands." // Columbia

'Ruins' is perhaps the single closest to previous album *Stay Gold*, but with a tone too defeated. 'Hem of Her Dress' starts to bring resolution, with a folksy almost-acapella la-la singalong and applause to finish. Finally, the

exhausted 'Nothing Has to Be True' delivers final mourns: "Oh, I thought you were home" and brings closure in the form of a percussion crescendo, bringing a cathartic end to a well contained body of work.

Today's Empires, Tomorrow's Ashes is still relevant

MUSIC

Henry Eshbaugh
Music Editor

Margaret Thatcher famously referred to herself as practicing "conviction politics" in the months before her 1979 rise to the office of Prime Minister. She holds no candle to Winnipeg-based thrash-punk band Propagandhi, an all-vegan band so dedicated to environmentalism that they organize tours to minimize their carbon footprint. But it's not all kale and tofu; the group is staunchly committed to hands-on activism for a number of anarchist and radical-Left causes, donating songwriting prizes

to humanitarian projects and filling their lyrics with anticapitalist, anti-imperialist sentiments. Eat it, Maggie.

The band released its seminal work, *Today's Empires, Tomorrow's Ashes*, on February 6, 2001 – 17 years old in the next two weeks. Thematically, the album centers around American cultural hegemony in the wake of the Cold War, taking the position that cracks in the foundation of power imply an inevitability to the crumbling of the empire. This is prescient: undoubtedly the image of American society has declined in recent years (with the presidencies of Bush and Trump being no help for the country's reputation and consequent influence in the world at large, especially with

respect to social values and political mores). With domestic issues from the opioid epidemic to stagnant wages, and Agent Orange being the face of American diplomacy, the US finds itself taking more and more of a backseat role in world affairs, a far fall from the influence once wielded.

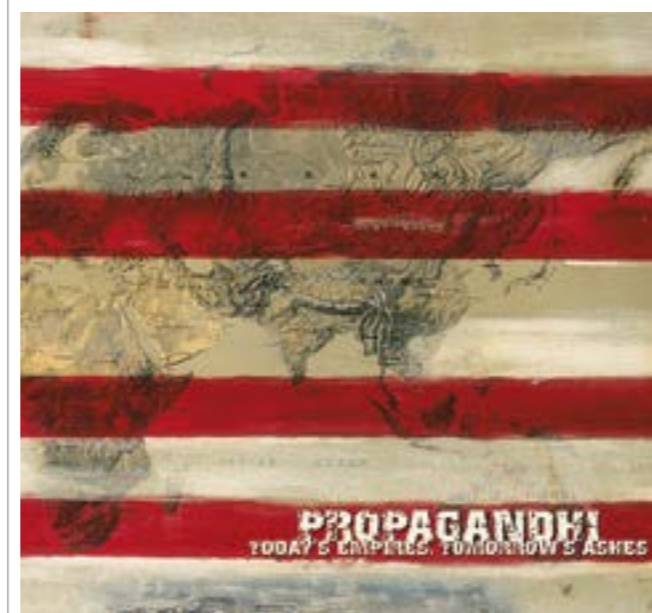
Today's Empires, Tomorrow's Ashes point fingers at the dark underside of US power. FBI programs to suppress dissident groups ('Who the Fuck Needs COINTELPRO?'), women's rights ('Ladies Night in Loserville', where a female narrator taunts the misogynists with the sexually-liberated refrain "I fuck to cum / Don't lay your repressed shit on me"), and immigration ('Fuck the Border') are

all on the chopping block. The subjects are still topical: perhaps it is a sad commentary that the same radical statements made near two decades ago are still radical today. Whatever the political reading, the lyrics are in lucid prose, and are worth a read.

Musically, the album thrashes. Propagandhi is possibly the most technical punk band in the business, and this album features musicianship in spades. The grooves on this album are, through and through, mad; drummer Jord Samolesky deserves a special shout-out for his vibrant toms work. The guitar lines are intricate works of blow-the-roof-of-punk rock art, glimmering for mere seconds before disintegrating into more power-chord thrash.

To conclude, *Today's Empires, Tomorrow's Ashes* is a powerful statement by a passionate band about issues that are still very much primary in the public consciousness, brimming with

thrash-punk goodness reinforcing the album's core thesis: here today, gone tomorrow. *Ashes* is a classic album that isn't to be missed.



Meet me in the fucking pit, nerds. // Fat Wreck Chords

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Ode to an ambience, straight Frahm bald Nils

The nimble fingered German electronic producer, Nils Frahm, has returned with a gorgeous new album, and a freshly shaved head.

MUSIC

ALL MELODY

Artist: Nils Frahm. Label: Erased Tapes. Top Tracks: The Whole Universe Wants To Be Touched; Sunson; #2. For Fans Of: Anything else on Erased Tapes. 74 minutes

Jack O'Brien
Music Writer

Nils Frahm stands out to fans of ambient music as an electronic producer and pianist ready to fill your brain with a tantalising fusion of classical composition and electronic reverb. He is an artist who since the mid-noughties, alongside his esteemed record label Erased Tapes, has brought forth sounds seemingly from other worlds. *All Melody*, his most recent album, is a continuation of his eclectic and nuanced music history, and stands up as an innovative and stylised album of its own.

All Melody starts extremely well. 'The Whole Universe Wants To Be Touched', a beautiful first track, uses a sumptuous arrangement of choral vocals to immediately lull the listener into a calm sway, before smoothly progressing into calm electronic chords reminiscent of his previous album, *Spaces*. It merges sweetly into the more upbeat second track, 'Sunson' to create a lovely 15 minute opening.

What is most compelling about this beginning is its satis-

faction of one of Frahm's key talents: his ability to blend classical themes and arrangements into an avant-garde expression, only to then lift it seamlessly into a more accessible, galvanised form. He merges the initial vocals into a thematic warp, that then gives way to a rich, bouncy, electronic sound.

An understated ambience is then established and perpetuated in the follow up track 'A Place', before Frahm shifts to familiar territory on 'My Friend the Forest'. Here, Frahm seems to revisit his work on one of his subtler albums, *Screws*, and pours out a tentative and melodic electronic piano piece. Amongst this composition lies the familiar clicks and clacks of his piano, recorded as such to preserve the mechanical feeling of the instrument. The lamenting notes that dance out of his fingers are heartrending and delightful.

By the album's midpoint, Frahm has very much created a sense of journey or want thereof, a feeling perhaps best termed in his native tongue as

lust. Tracks like 'Human Range' and 'Forever Changeless' tinkle by and draw the listener deeper into the music, before reaching towards a rather epic middle portion of the

"Turning the erratic nature of experimental ambient music into more layered and formulaic tracks that edge towards beautiful crescendos"

album. Looping, sweeping songs like the titular 'All Melody' and '#2' ascend to wonderfully euphoric moments. The progression of these tracks is fantastically immersive, but what is most incredible is Frahm's tendency to build a track up with increasing ferocity, blessing us with a few ecstatic moments, before shifting musical focus in the pursuit of new sonic variation. He creates moments of ecstasy and leaves them behind in pursuit of a new sound, mid track. The feeling created is one synonymous with that experienced when listening to classical



Fresh trim // Alexander Schneider



All Melody is out today // Erased Tapes

music. I found myself mourning the transition of certain musical sections into others, desperate to hold onto a known and rewarding sound. But, despite this, the exchange of a beautiful moment for the pursuit of a new one drives the piece into a fulfilling complexity. Frahm seems to be fully aware of this, building his songs to a climax before changing direction, offering reflective mid points to the listener and novel musical pathways for explore.

Despite this heaped praise, the album is not perfect. There are times when tracks feel drawn out, and sometimes the ambient sounds created seem to merely act as filler between compositions. The final track, 'Harm Hymn' is

perhaps the worst. The album is screaming for a more powerful ending, another blissful moment or delicate piano tug at the heart, yet instead it stalls with a rather boring collection of warps. It begs for a bang or even a fade, but instead plateaus. Tracks like 'Fundamental Values' and 'Momentum' also seem rather plain when compared to earlier moments. It is at these latter points when the album is dullest, melodically at its weakest, and most contextually directionless compared to its vivid and exciting beginning.

All Melody has a lucid texture and a beautifully unique feel. It combines many of the skills demonstrated on previous albums like *Spaces* or

Screws to create something genuinely moving, providing a beautiful ambience in which to soak up transcendent vibrations. Frahm excels at turning the erratic nature of experimental ambient music into more layered and formulaic tracks that edge towards beautiful crescendos, and offers an intersection between classical and modern approaches to create something accessible yet artistically challenging. *All Melody* is a brilliant culmination of his excellent repertoire as a pianist and an electronic producer and provides a stimulating, immersive listen. However, it loses some of its grace towards the end, causing holistic damage to an otherwise flawless album.

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Ten projects from the past year that prove we still

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Asad Raja
Music Writer

Today's release of Migos' *Culture II* marks the start of, what will hopefully be, another year of refreshing and inventive mainstream trap projects. Last year was very content heavy for the genre, yielding more than a few projects that provided optimism in the sound's longevity and continued progression.

HNDRXX
Future

From his last few projects since *DS2*, it was clear that Future's extreme comfort in mainstream hip-hop were bringing a complacency and repetitiveness to his sound. *HNDRXX* however, was Future's attempt at changing up his chart-topping formula whilst achieving the same results by focusing more on singing and melody. And, for the most part, the project delivered. The production is often sweet-sounding or playful with Future slowing his flow appropriately, coming off more introspective and humble ('My Collection', 'Coming Out Strong', 'Neva Missa Lost', 'Sorry') or happy-go-lucky ('Incredible', 'Testify', 'Fresh Air'). Of course, this wouldn't be a Future project without a handful of forgettable filler-tracks and, in places, it is very evident that the singing thing isn't exactly his forte (it gets particularly bad on 'Use Me'). However, at its best, *HNDRXX* raises hopes for melodic trap.

Huncho Jack, Jack Huncho
Travis Scott and Quavo

This collaborative effort between trap's heavy weight champ and its current poster child was highly anticipated. The project as a whole is solid, held back by a few moments where the pair lack chemistry or an idea sounds unfinished. However, at their best, Travis and Quavo each ride the beat seamlessly and complement each other nicely with ad-libs and vocal layering. The stand out feature of this project is its production. Mike Dean comes through with some of the most effective trap beats of the year ('Huncho Jack', 'Go', 'Saint Laurent Mask', 'Moon Rock', 'Where U From'). 'How U Feel' samples 'The World II' by Shigeo Sekito, recognisable immediately from its use in Mac Demarco's 'Chamber of Reflection'. This is a particular stand-out moment and accurately demonstrates how the sound of modern day trap can truly transcend its stereotypes. Quavo's triplet flow really shouldn't work over this sample...but it just does. *It really does.*

The Booty Tape
Ugly God

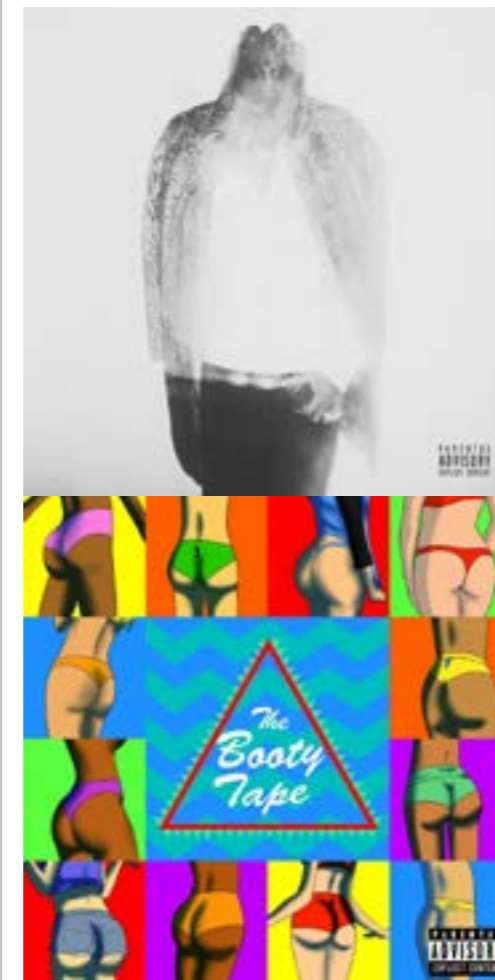
It would seem that memes and hip hop are becoming increasingly symbiotic. Ugly God stands as testament to that. This, his debut project, is packed full of hilarious punchlines and ridiculous musings. Something about the project makes each song sound like the intro track of a debut Ugly God album that this is not. That is not even meant in a bad way, and it is clear that Ugly God meant for this, ensuring that the project does not

overstay its welcome at a brisk 23 minutes. The dream trap production and purposefully stupid subject matter make this a very entertaining project, perfect for winding down to. It has been evident for a while now that there is room in trap for music that is not at all challenging to listen to, with lyrics that flow past listeners, leaving no lasting impression. Take this scenario and make the artist self-aware to the point that they feel comfortable sharing their weirdest and most immature thoughts (without going full Lil Dicky) whilst making beats similarly loose and nonchalant, and you might just have something. Better to rap about stupid shit than to rap about shit stupidly.

Pretty Girls Like Trap Music
2 Chainz

If *Views* was a trap album, this would be it. *Pretty Girls Like Trap Music* was one of the most accessible and coherent sounding hip hop albums of 2017 and serves as a testament to what a no-brainer the mellow trap sound is today. Indeed, it feels as though, despite the production being decidedly trap influenced, it was very necessary for 2 Chainz to remind us in the title that this is indeed a trap album. The big-ticket features on this thing all deliver very agreeable verses or hooks, giving the mainstream hip-hop listener exactly what they would expect and prefer from each guest – Quavo, Travis and Swae Lee each come through with a catchy hook as opposed to fire bars; Nicki and Drake each confidently deliver a relaxed yet boastful verse; on 'Bailan', Pharrell

does his 'Happy' thing as opposed to his left field N.E.R.D. thing. This really pays off for the most part with the album staying consistently listenable, but never boring (with the exception of 'It's A Vibe', which sounds like one long hook). The

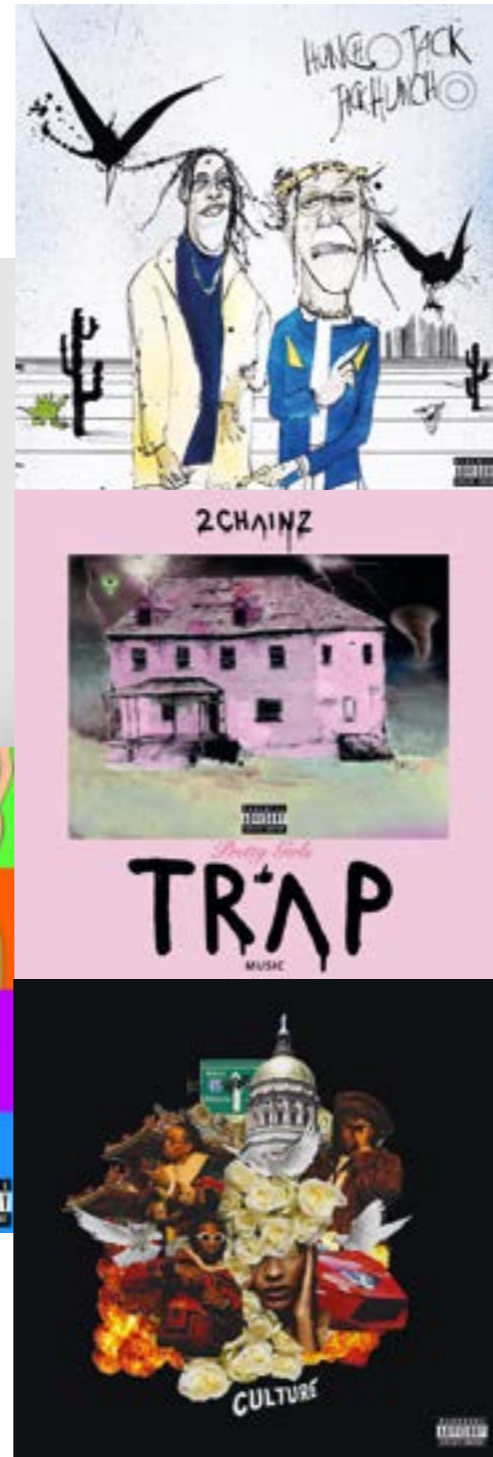


production does many favours for this album, creating a coherent, cool mood with switch-ups and intricacies that keep the listener on their toes. The album is a perfect example of what a high quality pop-trap album should sound like.

Culture
Migos

Culture serves as a masterclass on how to make trap bangers. Song after song on this album, Migos use their triplet flow, perfectly timed ad-libs and watertight back and

That's right, we've got another



(Clockwise from top right) *Huncho Jack, Jack Huncho*; *Pretty Girls Like Trap Music*; *Culture*; *The Booty Tape*; *HNDRXX* // Capitol; *Universals*; *Quality Control*; *Asylum*; *A1*

forth to create memorable hooks and catchy verses. Their versatility is also proven on this album; the three-headed beast that is Migos can go from aggressive and braggadocious ('T-Shirt', 'Bad and Boujee', 'Slippery', 'Deadz') to more reflec-

tive and subdued when the beat guides them that way ('Big On Big', 'Brown Paper Bag'). This album sounds like a glory lap from Migos, and a well-earned one too. Since they achieved major commercial breakthrough with the release of 'Bad

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haven't reached peak trap just quite yet

fucking list for you. Fucking sue us.



(Clockwise from top left) *Beautiful Thugger Girls*; *Playboi Carti*; *Without Warning*; *Luv Is Rage 2*; *Droptopwop* // Atlantic; *AWGE*; *Sony*; *Atlantic*; *Atlantic*

and Boujee', they have only honed their craft for topping charts whilst still placing emphasis on the trap culture they helped to shape. The album title says enough.

Beautiful Thugger Girls
Young Thug

Young Thug's cadence has always been one of his main selling points. On *Beautiful Thugger Girls*, his vocals really shine. The instrumental and

often country-influenced trap beats are very sweet and intoxicating and these vocals perfectly complement them. The range in pitch and the often beautiful melodies he brings to songs, whether in his singing or rapping or the thing in between

like *HNDRXX* will only go so far in attempting.

Playboi Carti
Playboi Carti

This, Playboi Carti's debut mixtape, exemplifies how simplicity, repetitiveness, and ambience can make cloud trap immediately hypnotic and addictive. Everything is minimalistic, including Carti's vocals. He fills pockets in the spacey production with adlibs or a line repeated five or six times. The stand out tracks on this project, 'Magnolia' and 'dothatshit!', both perfectly encapsulate the "Carti sound" that this project owes its success to. Carti's rhymes float effortlessly inside, rather than on top of, fluid beats that were designed to be indescribably incomplete without his presence. This results in a blissful daydream aesthetic, painting the backdrop to the ultimate trap utopia of sex, money and drugs with no accountability to ruin it, only charisma and entitlement.

Droptopwop
Gucci Mane

As the undisputed godfather of trap, with upwards of 70 projects since 2005, one wouldn't blame Gucci Mane if he were all but out of new ideas. However, as proven by *Droptopwop*, this is not the case. There isn't a moment on this project where Metro Boomin doesn't lay down a flawlessly cold and often sinister sounding production. On each track, Gucci Mane rises to the occasion with his bars, sounding confident and calculated. His flow consistently occupies a lot of space, somehow sounding slow and kind of graceful

even when fast paced and aggressive. When rapping about the gang lifestyle he knows so well, Gucci shows us that lyrical content in trap can be insightful and mature. He takes this a step further on tracks such as 'Helpless', 'Finesse The Plug Interlude' and 'Dance With The Devil', sharing the darkest corners of his insecurities and perversion, laying himself bare in a way that makes the listener almost uncomfortable considering his butch image. This project is the sign of a huge second-wind in Gucci's career.

Without Warning
21 Savage, Offset,
Metro Boomin

Without Warning is probably, technically speaking, the best trap project of 2017, brilliant for many of the same reasons as *Droptopwop*. One of these reasons is Metro Boomin, the essential powerhouse of almost all top quality modern trap albums. With this project, he comes through with similarly chilling and gruesome production, making 21 Savage feel right at home as he delivers mercilessly menacing and murderous bars. That is not to say that this project is so fierce that it is off-putting, indeed the cut-throat sound is sufficiently off-set by Offset, who brings a more upbeat energy and flair to the table. Still, there is surprising cohesion between all three forces. The rigorous craftsmanship in the production is obvious all through the project but particularly shines on the ominous sounding 'Nightmare', complete with what sounds like a xylophone melody from a child's haunted toy box. 21 Savage and Offset are both similarly

uncompromising in each of their verses, making for a project teeming with bangers.

Luv Is Rage 2
Lil Uzi Vert

Simply put, this is the most futuristic sounding trap project to have been made in recent years, packed full of ideas that exemplify the infinite potential for trap to bring a unique sound to the hip-hop landscape. On *Luv Is Rage 2*, Lil Uzi creates a universe, of which he is the superhero. With unforgivably theatrical production that challenges the listener and an inimitable vocal style that rides it in the most unconventional and beautifully careless manner, Lil Uzi takes us soaring above the homogeneous trap sound played to death in clubs and on the radio. The first high point of this album comes in the form of 'Feelings Mutual'; a show stopping production builds to a magnificent apogee of orchestral synths, cutting and dropping to perfectly match Lil Uzi's impassioned cries that mourn the unspeakable pain of a lost love. 'XO TOUR Llif3' is similar but this time the track serves as a more unhinged and reckless sounding ballad. The lyrics are heavy, focusing on love, life and death, immediately cathartic to scream out the way Uzi does, his vocals bouncing off the beat. Simply put, this project is experimental, tragic and triumphant but passionate all over. In places, sounds and lyrics become imaginative to the point of obnoxious ('Early 20 Rager') but that can be forgiven in a heartbeat when the genius of the album's best moments is considered.

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Greg Barker's Obama doc *The Final Year* is an exercise in hagiography

The exploration of Obama's last year in office is greatly lessened by a refusal to criticise.

FILM

THE FINAL YEAR



Dir: Greg Barker. **Starring:** Barack Obama; John Kerry; Samantha Power; Ben Rhodes. *89 minutes*

Fred Fyles
Editor-in-Chief

There are many terrible things about Trump's ascension to the presidency, which – despite the cries of those who say it was an 'inevitable' side effect of the rise in identity politics – still comes as a shock, a full year on from his inauguration. But one aspect of his rise to power which, while nowhere near as tragic as his decision to withdraw from the Paris Agreement or his attempts to gut health insurance coverage, will go on to have an impact in the future is the effect it has on the legacy of Barack Obama.

“The arrival of Trump – crashing down like a bequipped orange meteor – has smoothed out potential for criticism of Obama”

While the Obama years were marked by an increasing reliance on drone

warfare and a war on whistleblowers, the arrival of Trump – crashing down like a bequipped, luminously-orange meteor of trash – has smoothed out the potential for criticism. We now view Obama's presidency as the halcyon days, when there was a president who was calm, eloquent, well, and cool. As a result, our view of his two terms as president does not allow room for nuance, a trap into which Greg Barker's documentary *The Final Year* falls.

Filmed over the last twelve months of Obama's presidency, the film focuses on a few loyal staff members who formed the core of his foreign policy unit: US Ambassador to the UN, Samantha Power; Secretary of State John Kerry; White House staffer Ben Rhodes, who advised on the Iran Nuclear Deal; and – for brief periods – Susan Rice, the National Security Advisor. All are united in their wide-eyed belief that the Obama Doctrine on foreign policy has, or had, the potential to dispel the strong-man image of America on the world stage in favour of a kinder, gentler form of politics.

And thus we follow the team around the globe: Kerry attempting to heal the US's relationship with Vietnam, drawing to a close a career that has seen him move from war hero to anti-war demonstrator to political giant; Power listening to Nigerian mothers whose daughters have been kidnapped by Boko Haram; Rhodes reflecting on the momentousness of the Iran Deal. We even have an interview with the president

“While we have an interview with the former President, nothing truly valuable is revealed through it”

himself, although nothing truly valuable is revealed.

This is the main issue with the film: any problems that might have existed during Obama's presidency, or any internal tensions between members of the team are merely hinted at, is never revealed.

The last 20 minutes of the film are the most illuminating, as Trump moves from joke politician to legitimate candidate to president-elect – Powers watches the election night

with other female UN ambassadors in one of the most affecting scenes in the film – but doesn't tell us much more than the reaction these seasoned, intelligent professionals have to the thought of Trump in the White House: horror at the potential he has to undo their work.

Ultimately, *The Final Year* tells us very little about the Obama presidency, or the legacy it will leave. We are given a surface-level look at

the lives of his staff, with real exploration eschewed in favour of a film that, at times, reads like a 'greatest hits' montage of a dying age of normality.

All too often, Barker sands down the edges of what could have been a fascinating film, veering instead into mere hagiography.

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Loveless, Phantom Thread, and The Shape of Water could all be taking home awards come March // Altitude; Universal; Fox Searchlight

The Shape of Oscars

Film Editor Ashley Luckyram reacts to landmark nominations for first-timers Greta Gerwig and Jordan Peele, as Phantom Thread and Paul Thomas Anderson ghost into the reckoning.

FILM

Ashley Luckyram
Film Editor

While not as glamorous as an affair at the Dolby Theatre in the Spring, the announcement of the Academy Award nominees is nonetheless an anticipated event. Streamed live from the Samuel Goldwyn Theatre in Beverley Hills, announcers Tiffany Haddish and Andy Serkis had some surprises up their sleeves on this Tuesday lunchtime. Let's take a look at the shocks and snubs in the major categories; and where the Oscar races stand ahead of the handing out of golden statuettes on March 4th.

Best Picture Heading To Fox Searchlight

Fox Searchlight is having a year to remember,

with two of their pictures, *The Shape of Water* and *Three Billboards Outside Ebbing, Missouri* going head-to-head for a number of the biggest awards, including the most coveted prize of all: Best Picture. *The Shape of Water* has led for nominations at most of the major awards ceremonies this season, and continued this trend by raking in a whopping 13 nods, a total bettered only by *All About Eve*, *Titanic* and last year's *La La Land* in Oscar history. It won the Producers Guild of America and Critics' Choice Movie Award for Best Picture, putting it in good stead to go all the way with the Academy. *Three Billboards* will have a say on that though; having won the notoriously Oscar-predictive Audience Award at the Toronto International Film Festival and picked up the Golden Globe earlier this month, Martin McDonagh will be pleased with his film's haul of seven nomina-

tions, if a bit miffed that he was snubbed for Best Director.

"The Shape of Water has come into the race strong, with a record 13 nominations"

The Post all there. Focus Features will almost have as big a grin on their faces as Fox Searchlight, with *Darkest Hour* building on strong BAFTA representation to score well here, as well as a pleasantly surprising nomination for the much-deserving *Phantom Thread*, which received some of the best

reviews of the year only to be ignored by all the major guilds. Paul Thomas Anderson's romantic period piece is peaking at just the right time for voters, and Focus' release strategy much be commended. *Mudbound*, *The Big Sick*, *The Florida Project*, *Wonder Woman*, and *I, Tonya* were all locked out.

Acting Awards: A Foregone Conclusion

The Screen Actors Guild Awards are the strongest predictors for Academy success, and with those being handed out a couple of days before the Oscar nominations are announced, we are robbed of a little excitement as we already know who will win.

Best Actor nominees - Daniel Day-Lewis (*Phantom Thread*), Timothée Chalamet (*Call Me by Your Name*), Daniel Kaluuya (*Get Out*) and Gary Oldman (*Darkest Hour*) - were already locks, with Oldman the

heavy favourite to win for his portrayal of the early part of Winston Churchill's premiership. The fifth slot was between Golden Globe winner James Franco (*The Disaster Artist*) and screen legends Tom Hanks (*The Post*) and Denzel Washington (*Roman J. Israel, Esq.*). Franco was the front runner for that last slot but sexual misconduct allegations appear to have derailed his campaign, with Washington stepping in as the Academy's snubbing of former darling Hanks continues.

Frances McDormand (*Three Billboards Outside Ebbing, Missouri*) is a sure thing to pick up her second Best Actress win, while Saoirse Ronan (*Lady Bird*), Margot Robbie (*I, Tonya*) and Sally Hawkins (*The Shape of Water*) were always guarantees for acknowledgement. Annette Bening (*Film Stars Don't Die in Liverpool*) was once again given the cold shoulder to allow the Academy to give Meryl

Streep (*The Post*) her customary nomination.

Initial Supporting Actor favourite Willem Dafoe (*The Florida Project*) was expectedly nominated, while new front runner Sam Rockwell (*Three Billboards Outside Ebbing, Missouri*) and Christopher Nolan (*Dunkirk*). Turns out we didn't know shit. Golden Globe winner Del Toro and fellow Directors Guild of America nominee Nolan booked their seats at the Dolby Theatre with little fuss. After the clamouring of numerous men and women in the film industry and the general public, riding the wave of momentum provided by the #MeToo and Time's Up movements, Greta Gerwig (*Lady Bird*) followed up her National Board of Review win and Directors Guild nod to become only the fifth female nominee for Best Director in history, and first in almost a decade. Similarly, Jordan Peele (*Get Out*), another first-time director, became only the fifth black

Your Name.

TV stalwarts Allison Janney (*I, Tonya*) and Laurie Metcalfe (*Lady Bird*) will do battle for the Supporting Actress award, with Janney widely anticipated to come out victorious. Mary J. Blige (*Mudbound*) and Octavia Spencer (*The Shape of Water*) had been fairly good shouts for nods and duly delivered. While Hong Chau (*Downsizing*), Holly Hunter (*The Big Sick*) and Kristin Scott Thomas (*Darkest Hour*) had hoped to be in with a chance, Lesley Manville (*Phantom Thread*) has come storming through late on for an icy and powerful turn that goes toe-to-toe with the great Daniel Day-Lewis, so much so that she may even be a surprise winner.

Best Director Proves Surprisingly Unpredictable

Well, well, well. Heading into Tuesday, we knew who three of the Best Director nominees would be: Guillermo Del Toro (*The Shape of Water*), Martin McDonagh (*Three Billboards Outside Ebbing, Missouri*) and Christopher Nolan (*Dunkirk*). Turns out we didn't know shit. Golden Globe winner Del Toro and fellow Directors Guild of America nominee Nolan booked their seats at the Dolby Theatre with little fuss. After the clamouring of numerous men and women in the film industry and the general public, riding the wave of momentum provided by the #MeToo and Time's Up movements, Greta Gerwig (*Lady Bird*) followed up her National Board of Review win and Directors Guild nod to become only the fifth female nominee for Best Director in history, and first in almost a decade. Similarly, Jordan Peele (*Get Out*), another first-time director, became only the fifth black

director in history to earn an Academy Award nomination. Regardless of whether you think Gerwig or Peele deserved their spots ahead of BAFTA nominees Denis Villeneuve (*Blade Runner 2049*) and Luca Guadagnino (*Call Me by Your Name*) or Golden Globe nominees Steven Spielberg (*The Post*) or Ridley Scott (*All the Money in the World*), they did earn the highly predictive Directors Guild nominations; so their nods weren't entirely unexpected, especially given the pressure to reward more female and ethnic minority filmmakers, and the growing diversity in the Academy voting pool. So then the five Directors

"Greta Gerwig's nomination reflects the current climate of Hollywood"

Guild nominees, Del Toro, Nolan, Gerwig, Peele and McDonagh, were the five Oscar nominees, and everyone lived happily ever after. BUT WAIT! Surefire choice Martin McDonagh was left out. Not for another guild nominee, not for another BAFTA nominee, and not for another Golden Globe nominee. No, in his stead is Paul Thomas Anderson for *Phantom Thread*, a completely out-of-left-field but justified decision. The last couple of years have shown a shift in previous voting trends, with old steadfast predictors being thrown out the window by the younger and more diverse Academy voting pool. While they have been attributed for earning Gerwig and Peele selection amongst the elite, no one seemed to anticipate

that they would plum for Anderson, a man who is to many of them their generation's Kubrick.

Original Screenplay Far More Competitive Than Adapted

Oscar stalwart James Ivory's script for *Call Me by Your Name* will win come March - there isn't any competition. In the end solid efforts from *Mudbound*, *The Disaster Artist*, *Molly's Game* and *Logan* made up the rest of the nominees, but it almost feels as though one could have desperately scribbled down the ingredients from the back of a bottle of Heinz tomato ketchup on a napkin five minutes before the nominations went out and still been in with a chance of an Adapted Screenplay nod. In stark contrast the Original Screenplay category is hotly contested. Greta Gerwig (*Lady Bird*), Jordan Peele (*Get Out*), Martin McDonagh (*Three Billboards Outside Ebbing, Missouri*) and Guillermo del Toro & Vanessa Taylor (*The Shape of Water*) collected their projected nominations, while Emily V. Gordon & Kumail Nanjiani's *The Big Sick* managed to gazump Paul Thomas Anderson's National Board of Review-winning *Phantom Thread*, even amidst the latter's startling success. Other hopefuls from *The Post*, *Dunkirk* and *I, Tonya* were rightly left out, though would surely have been amongst the nominees were they competing in the adapted category.

Best Foreign Language Film Wide Open

This is always a tough category to predict. The Academy has a very bizarre and convoluted way of voting, involving bands of films that are then drawn into a shortlist partly by popular vote and



Lady Bird has garnered five nominations // A24

partly by the decree of an executive committee, from which five nominees are then chosen (see what I mean when I said 'convoluted'). *Loveless*, *A Fantastic Woman* and Palme d'Or winner *The Square* all picked up their expected and deserved Foreign Language Film nominations. Golden globe winner *In the Fade* and Angelina Jolie's *First They Killed My Father* were both shut out. One would have expected superb Israeli entry *Foxtrot* to jump in. Yet instead, the also well-received *On Body and Soul*, and the little-seen *The Insult* made the cut. It's a five-horse race from here on out.

Auteur-Driven Blockbusters Dominant Technical Categories

Big budget fayre often sees its best chances of Oscar success in the technical categories, where they can be rewarding for their astonishing visual effects and sound mixing. This year saw a number of directors, many of whom have proven themselves

on the indie circuit, take their meticulous visions to the tentpoles. Denis Villeneuve (*Blade Runner 2049*), Rian Johnson (*Star Wars Episode VIII: The Last Jedi*), Edgar Wright (*Baby Driver*) and Matt Reeves (*War for the Planet of the Apes*) will be pleased to see their films pick up five, four, three, and one nomination respectively. Another big budget scorer in the awards with Best Picture and Best Director nominations. Nolan's *Dunkirk*, also breaking into the higher end of the awards with Best Picture and Best Director nominations.

The Best Cinematography nominations matched up to the American Society of Cinematographers nominations, meaning Rachel Morrison (*Mudbound*) at long last became the first woman to be acknowledged in that category. That was part of wider success for Netflix, with the streaming network finally cracking the Academy on its way to four nominations (the Academy in general has been more accepting in recent years, and super-

hero flick *Logan* also got a major category nomination for Adapted Screenplay, only the second of its kind after Heath Ledger's Supporting Actor win for *The Dark Knight 9* years ago). Unfortunately for Morrison, she will have to wait for a win, as it is surely now Roger Deakins' time. Forget the likes of DiCaprio, Pacino, Scorsese, and Bridges having well overdue wins; this is Deakins' 14 nomination, and his stunning work on *Blade Runner 2049* is heavily favoured to see him break his duck.

After landmark work in his past collaborations with Paul Thomas Anderson in *There Will Be Blood*, *The Master* and *Inherent Vice*, Jonny Greenwood (*Phantom Thread*) finally earns a long outstanding nomination for Original Score. The Radiohead guitarist is up against veterans Hans Zimmer (*Dunkirk*), John Williams (*Star Wars Episode VIII: The Last Jedi*) and Cater Burwell, while Alexandre Desplat (*The Shape of Water*) is the narrow favourite.

FILM

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The Post – confessions of a news editor

Steven Spielberg's prestige drama is nothing short of professional, but lacks frisson and excitement.

FILM

THE POST



Dir: Steven Spielberg.
Script: Liz Hannah; Josh Singer. **Starring:** Meryl Streep; Tom Hanks; Sarah Paulson; Bob Odenkirk. 116 minutes

Fred Fyles
Editor-in-Chief

Not content with getting his grubby hands all over the American presidency, Donald Trump has now invaded the world of cinema, albeit indirectly. Just as we have now entered the ‘post-Weinstein’ era, we have also entered into the ‘Trumpian’ age of cinema: now all films that come out need to be measured up against the impact the orange troll has had on the American psyche. Films that eschew political commentary – such as *The Shape of Water*, whose prominent position in Oscar nominations led Peter Bradshaw to describe the list as ‘cautious, comfort food’ – are accused of ignoring the realities outside for something indulgent; those that hit us over the head with dark messages about the Trump presidency, meanwhile, such as *The Final Year*, are seen as simplistic.

And then there is *The Post*: Steven Spielberg’s prestige drama about the unveiling of the Pentagon Papers by *The Washington Post* has been acclaimed by many Goldilocks-like film critics as ‘just right’ for the level of scorn it directs at the Trumpian White House. Numerous commentators have seen links between



Did you know that Meryl Streep invented journalism? // Universal

the political landscape depicted on screen – the hostile, paranoid 1970s, during which Nixon was itching to prevent state secrets about the futility of the Vietnam War from getting out – and today’s atmosphere – equally hostile, equally paranoid, and with a penchant for just ignoring the news rather than suppressing it. Despite taking place nearly 50 years ago, many have said that it might as well have taken place in 2017.

Except... it really couldn’t. *The Post* is a film completely in thrall to the 1970s, and – in particular – to the newspaper industry as it was then, a world of clacking typewriters and hot metal typesetting. It’s in this milieu that Spielberg focuses on his two central characters: Katharine Graham (Meryl Streep), the publisher of *The Washington Post*, who

took on the role following her husband’s suicide; and Ben Bradlee (Tom Hanks) the paper’s editor who is keen to make it more than just a small-time outlet. Luckily, that opportunity lands right on his desk, when a copy of a secret government study into the history of the Vietnam Conflict – called the ‘Pentagon Papers’ – is given to his news team. The papers, which showed that the government knew that the war was unwinnable, had been published in *The New York Times* until they were prevented from doing so by the government. And so Graham and Bradlee are faced with a single immense decision: to publish or perish.

Spielberg surrounds this with a whole retinue of creative packaging, adding in subplots about Graham’s relationship with the American establishment, and *The Washington Post*’s imminent

public offering. Spielberg decides, however, to keep most of the focus on the central pairing, and it’s a wise choice, since it can be difficult to care about the surrounding baggage. Streep and Hanks are similarly supported by one of the most star-studded casts I have ever seen in a film – particularly good turns come from Carrie Coon, Sarah Paulson, and Alison Brie, who draw attention in a way that is impossible not to notice.

With *The Post* we have a director at the top of his game, working with two of the most well-respected actors; all three are industry veterans, and as a result *The Post* never feels anything short of professional. From the three act structure to the moving speeches, it hits all the notes you would expect it to along its two-hour runtime. The main issue is, however, that the subject matter is simply not as

exciting as we might hope it to be. Unlike *Spotlight*, another drama centred around contentious stories – in this case the sexual abuse scandal that rocked the Catholic church in Boston – *The Post* is focussed on the process of publication, and not on the inner workings of journalism. The team at *The Washington Post* go to no great pains to uncover the papers – they are simply dropped in the office one day – meaning that the main decision is simply whether or not they’re going to risk litigation and publish. And they do – a fact that I believe the vast majority of the viewers will enter the cinema knowing. As such, *The Post* is starved of the oxygen of frisson and intrigue that made *Spotlight* so successful. Long scenes are taken up with Graham agonising about what the right thing to do would be, meaning

that once the papers have been published we’re treated to a whistle-stop tour of the ensuing legal battle – while skipping over the fact that Daniel Ellsberg, the official who leaked the papers, was sentenced to 115 years in prison.

While *The Post* is certainly a well-made film – well-acted, well-shot, well-scored – it fails to reach the levels many had hoped it would. Spielberg has attempted to wrap a traditional investigative journalism film around a structure that is actually about publishing. One of the main risks is that the investors will pull out and Graham will have to sell the company; one of the main goals is to elevate *The Washington Post*’s standing to more than a local paper. The result is an enjoyable watch that leaves little trace in the imagination.

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TELEVISION

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From high-school comedies to dark police dystopias

Anime is much more than it might appear at first. TV writers and anime enthusiasts Mingrou Xie and Pavan Inguva take you through their top picks for all tastes.

TV

Mingrou Xie
Pavan Inguva
TV Writers

Japanese manga and anime has something for everyone: enchanting soundtracks, remarkable aesthetics and animation, nuanced and thought-provoking storylines, and more. As a media form, it has always been bold and refreshing, pushing the boundary on plots, character development, and artistic styles to great effect. The industry's ability to be dynamic and vibrant is evident in the sheer variety and quality of series ranging from the highly popular and lengthy trinity: *Naruto*, *Bleach*, and *One Piece*, to the more warm-hearted and cutesy short series about high school romance *Tsurezure Children*. The

following anime series are a sample of what we feel offer insightful perspectives to life and society – enthralling works that are worth a watch.

MY TEEN ROMANTIC COMEDY SNAFU

Director: Kei Oikawa. 13 episodes

I started this anime series half expecting a typical sappy high school rom-com (which I enjoy as a guilty pleasure). But instead it was a witty and incisive social commentary analysing the nature of human relationships and conceptions of the self. This is one of the few shows where I would have to take a break in the middle of an episode because the dialogue would get too real.

We are greeted by the

main character Hachiman Hikigaya, a curmudgeon loner with a 'twisted' world view, who immediately sees the worst in people and any situation he is placed in. To help rehabilitate him, his teacher forces him to join the school's volunteering club whose sole member prior to this was Yukino Yukinoshita, an attractive and multitalented loner who alienated herself after seeing people's jealousy of her beauty and talents. This club is a bit unique in that it gets requests from the other students, and the club helps the requester to reach their goals. Examples of such requests include guidance on baking, organising events, and even asking a girl out. Each episode showcases the club's activities and the interaction between our two loners and a host of other characters, each with different attributes, such as Hikigaya's sister

or Yui Yuigahama, who after being the first character to request the club's service decides to join as a member.

The character evolution is well done, and it is quite endearing to see both Hikigaya and Yukino develop a sense of humanity. Hikigaya's initial methodology for helping – whilst seemingly expedient – usually incurs a high personal cost which he is willing to bear and/or often involves working with darker aspects of people's psyche. However, he gradually sees that it doesn't work out or that he unknowingly hurts his friends by his self-immolation, causing him to change. Even ancillary characters have deeper sides shown throughout the show, collectively helping the viewer become emotionally invested in the show. **PI**

MOBILE SUIT GUNDAM 00

Director: Seiji Mizushima. 50 episodes

The *Gundam* franchise spans a few decades and still produces excellent shows. *Gundam 00* is the 11th series, and ran from 2007-2009, with a total of 50 episodes spread over two seasons. Set in a post-fossil fuel world, three power blocs form, each with a space elevator equipped to harness solar power in space. Countries previously dependent on fossil fuels see their fortunes change, further destabilising a world rife with sectarian or drug

violence. Considering the possibility of bringing violence into space at a stage where mankind is beginning to explore the cosmos, Celestial Being, a non-state actor with four disproportionately powerful gundams, seek to stop all wars. As is with all *Gundam* shows, if you can find a HD version of this, you are in for a visual

"The Gundam franchise spans a few decades and still produces excellent shows"

treat, with outstanding animation and high-voltage battles involving interstellar fleets and overpowered mechas.

The show remarkably weaves together threads from a multitude of dimensions: pernicious effects of war, human evolution, contact with extra-terrestrials, energy politics, the rule of law, and the abuse of power. The way characters (conventional militaries, Celestial Being, and other non-state actors and civilians) are developed in terms of their backstories and how they progress during the series serve to point out the different motivations for engaging in various courses of actions during conflict. The sheer diversity of people who have experienced different aspects of conflict serve to make the complex affair of conflict more relatable.

Take Setsuna, the main *Gundam* pilot, who was a child soldier brainwashed into killing his parents or Andrei Smirnov, a soldier who resents his father for having killed his mother due to a tactical decision (both his parents were in the military). On a larger scale, I enjoyed how the show discusses big ideas, such as the appropriate outlook humanity needs to grow as a species or how power is used/abused by different people and how can we address it. With such smooth storytelling across the scales, it makes for a profound and enjoyable show to watch. **PI**

MUSHI-SHI

Director: Hiroshi Nagahama. 46 episodes

Mushi-Shi is one of the best examples of storytelling through an anime or cartoon series. The storyline, artwork, choice of music, and the character development are well done, and work together harmoniously to delight the viewer. The series consists of 46 episodes spread over two seasons – season one released in 2005 and season two in 2014.

Mushi are a kind of primordial and ethereal life form. They interact with the world as much as any animal or plant would. However, the show takes on a supernatural and surreal angle as the Mushi are only visible to a handful of people, many of whom are not even familiar with them, or

TELEVISION

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– an anime for all seasons

their interaction with the normal world is unusual and mythical. There are a group of people called Mushi-Shis who are trained in the ways of the Mushi and how to counteract the effect of potentially harmful Mushis. The show follows Mushi-Shi Ginko, who is unable to remember anything before the age of ten and tends to attract Mushi to his location. As such, he is a wanderer, and most of the time he serves to drive the plot forward as the show focuses on the interaction of people with the Mushi.

Each episode is self-contained and typically starts with someone or a group of people interacting with the Mushi in an unideal manner, often to their detriment. Ginko then comes along and helps the people work through the seemingly mysterious ways of the Mushi and generally helps to establish a suitable equilibrium. I quite enjoy how the show does not shy away from tragic endings where appropriate and it makes the overall situation a tad more realistic, as neither joy nor tragedy are forced. In the abstraction of the surreal, *Mushi-Shi* often brings in heavy ideas, giving the

"Mushi-Shi often brings in heavy ideas, giving the viewer food for thought on many issues"

viewer food for thought on issues such as the nature of the choices we make or how we interact with that which is outside

of us. **MX**

TATAMI GALAXY

Director: Masaaki Yuasa. 11 episodes

Ever dreamt of a rose-coloured campus life – exciting club activities, a lovely girl/boyfriend, and more? Ever wanted to redo your university choices, erase those regrettable Facebook pictures, and start everything all over again?

Well, *Tatami Galaxy* (Yojouhan Shinwa Taikei) is almost like a satirical commentary of that dream of yours. It's about a bitter university student (his name remains unknown throughout) who is continually thrown back in time to repeat his campus life, as each time he regrets how he has lived it. A set of over-the-top and extremely lovable characters surround him in his 'quest', including his devilish and only friend Ozu who seems to thwart his every effort, and eighth year student Higuchi with his mysterious acts.

The anime is immensely quirky, bearing unique colour schemes reminiscent of textile prints, and humorous dialogue – more often than not a blunt and matter-of-fact monologue by the protagonist. Frequent anime watchers will find it a breath of fresh air, whereas newcomers get to enjoy the more artsy side of anime. The opening song is also absolutely adorable in my opinion.

There is one downside, in that some viewers might consider the constant repetition of the same scenario boring, but I personally felt that each story was unique and enthralling. All in all, the

anime keeps your imagination active thinking about what the protagonist (or maybe you, yourself?) could have done to better colour his campus life.

Fellow students, grab the opportunity dangling in front of your eyes. This anime will definitely brighten up your monochromatic campus life!

P.S. If you can't get enough of the animation, watch *Yoru ha Mijikashi Arukeyo Otome*. It is helmed by the same staff that did *Tatami Galaxy*, and features several well-placed references to the anime. **MX**

PSYCHO PASS

Director: Naoyoshi Shiotani; Katsuyuki Motohiro. 33 episodes

With screenplay by the famous Gen Urobuchi (screenwriter of *Puella Magi Madoka Magica*) and character designs by Akira Amano (mangaka of *Katekyo Hitman Reborn!*), *Psycho Pass* is a thought-provoking psychological thriller through and through.

Set in the near dystopian future, everyone is assigned jobs and statuses based on their Crime Coefficient, or tendency to commit a crime. The start of the story sees a new officer, Akane Tsunemori, joining the Public Safety Bureau, which oversees 'neutralisation' of people with high Crime Coefficients. Slowly, through different encounters and several freaky incidents, she discovers the darker side of what she once thought was a perfect societal infrastructure.

Perhaps some of you might be reminded of the drama series *Person of*



Tatami Galaxy makes use of bright visuals throughout // Masaaki Yuasa

Interest. *Psycho Pass* is that and more—it raises questions about morality, society, and humanity. If your Crime Coefficient remains low, does it mean what you're doing is not wrong? Should you always protect the law? Is it right to judge a human's worth by their tendency to commit crime? Should relationships be influenced by Crime Coefficients?

Unfortunately, *Psycho Pass* drags out the storyline in some places, and the illustration can be shaky towards the end. However, the storyline is gripping, and will take you on a whirlwind ride through what it means to be human and to be 'right'. **MX**

FULLMETAL ALCHEMIST BROTHERHOOD

Director: Yasuhiro Irie. 64 episodes

An eight year old classic, *FMA* still deserves a shout out. If alchemy, conspiracy, and camaraderie sound like your cup

of tea, this is the anime for you. In a country where the principle of Equivalent Exchange underlies alchemy, two brothers' journey to find a solution to regain their body and limbs lost to human transmutation, a forbidden alchemy. Along their adventures, they uncover the secrets behind the country and reach a horrific conclusion about the alchemy they have been taking for granted.

"An eight year old classic, Fullmetal Alchemist still deserves a shout out"

I found the anime truly riveting. One of the questions the anime raises – what of equal value to your desired result would you sacrifice? – is pertinently raised in different characters' goals in the story, and you can see how their behaviours change as different scenarios

present themselves. That is just one of the messages conveyed through a blend of well thought out characters and intricate storylines.

Other highlights of the anime include an amazing soundtrack (openings and endings especially), and that it stays true to the original manga's art style and storyline. For those who like the typical shounen style of action and friendship, *FMA* has plenty of it, yet manages to maintain a good balance between action sequences and thought-provoking moments.

Although the anime tells instead of shows at several points, and has one too many flashbacks for my liking (probably because it is a long series), it is otherwise a very good anime. Definitely give it a watch!

(If you prefer to skip the flashbacks, you can try the manga instead, which is more succinct. The mangaka, Hiromu Arakawa, also has two other good series under her belt: *Silver Spoon* and *The Heroic Legend of Arslan*.) **MX**



My Teen Romantic Comedy SNAFU has a deft way with character development // Ai Yoshimura

The Leadership Elections 2018



Nominations for the 2018 Leadership Elections open next Wednesday 31 January. Hundreds of positions will open for a range of leadership roles across Imperial.

Whether you want to be an Academic or Wellbeing Representative, Liberation & Community Officer, a Student Trustee, a leader of your favourite Club or Constituent Union, or take on a full-time role as Felix Editor, this is your chance.

Nominations close at midnight on 25 February and voting begins at noon on 02 March.

Submit your nomination now at imperialcollegeunion.org/elections.

Summer Ball 2018



You may have noticed a new feature in the Union building. We've installed a new charge box, a handy phone-charging unit which will become your best friend when you're going through that dreaded battery crisis. The charge box sits right across from the ATM at the entrance on the ground floor.

There are four units available and you can charge your phone for up to 30 minutes at a time.

If you have any questions or comments please email Matt Blackett at dpfs@imperial.ac.uk.

For feedback, email union@imperial.ac.uk

Imperial Award 2018



The great thing about studying at an international top ten university is that you'll all graduate with a deep, fundamental knowledge of your chosen disciplines, but you'll also have to prepare for your professional lives as the leaders of tomorrow.

The Imperial Award has been designed to help you prepare for this by formally recognising your personal achievements and your personal development through self-reflection. You'll come out the other end with a portfolio that will help you provide evidence of how you have developed specific personal attributes, valued by society and employers. Success in one or more streams of the Award will earn you extra lines on your graduation transcript.

Register now: <http://www.imperial.ac.uk/students/imperial-award/>

Varsity Fest



Imperial Medics and Imperial College London sports teams will soon be going head to head in the 16th instalment of VarsityFest!

The festivities begin with Water Polo at Ethos on Friday 23 February, followed by Hockey at Harlington on Wednesday 28 February. Join us at Heston on Saturday 3 March for a full day of fixtures. Aside from the thrills of the matches, there will be plenty of other activities: live entertainment, face painting, food and drink stalls and more!

Showcase and Headline matches are decided by you! The options you can vote for are Men's Rugby (1st Team), Netball (1st Team) and Kabaddi. Visit bit.ly/2DEf2Za to cast your vote!

TRAVEL

travel.felix@imperial.ac.uk

Exploring Copenhagen (the happiest place on Earth!?)

Many European countries pride themselves on their (culturally) rich and famous capital cities. After spending a weekend in Copenhagen, **Elina Michaelidou** shares some tips and tricks to make the most of this beautiful city in a short time.



The famous Nyhavn harbour is a treat for the eyes, not so much for the wallet // Pixabay

TRAVEL

Elina Michaelidou

Travel Writer

This time two years ago, I was on my way to a spontaneous trip to Copenhagen. The spring term had just started, and on Friday of week one, we hopped on an Uber to go to the airport as quickly as possible. I finished my last lecture of the day at 6pm, and the flight was to depart at 8.45pm. I had to hurry back to my room, get my stuff, and leave. This was the beginning of a weekend in Denmark. We were delighted to find out that it was snowing there!

Day One

As we had limited time in the city and wanted to see as much of it as we could, we decided to go on a walking tour. It was a free walking tour in English that departed

from the City Hall and lasted about 2.5 hours. It was freezing and snowing outside (-2°C) but we had a 30-minute break in a warm café near Nyhavn, the famous harbour in Copenhagen. We ate quickly and then headed out to the snow for more photos.

The highlight of the tour was the Little Mermaid, a small bronze sculpture inspired by a fairy-tale by H. C. Andersen. We also passed Amalienborg, the residence of the Danish royal family, where we learned the reasons the Danes are considered the happiest citizens, despite not seeing much sun and paying huge taxes. (Hint: it's because they receive many services for free. For example, medical treatment).

You can find these kind of tours in different European cities (we took one in Kraków as well), and they are really good if you want something cheap. Although they are named "free", you are expected to give a tip at

the end, based on how much you liked it. But again, it will cost less than going on a proper walking/sightseeing tour. Another advantage of such tours is that the guide wants to make a good impression to get more tips, so you can assume that he/she will be friendly, funny, etc. My advice on tipping is to give half the amount you would give on a paid

tour per person.

In the afternoon, we visited the Guinness World Records Museum, an interesting small museum featuring information about worldwide records. After that, we walked around the city centre and then returned to the hotel, as it was as cold as -6°C at night, the lowest temperature I had ever experienced.

Day Two

On our second and last day, we decided to visit the Tower of Christiansborg Palace for the views across Copenhagen. The weather was nice: it was sunny and everything was covered in snow, and we could enjoy some great views. The entrance to the tower was also free.

Our next stop was Christiania, in the area of Christianshavn. The district has its own interesting story with hippies and conflicts between the locals and the government that is worth keeping in mind before visiting. After that, we collected our luggage from the hotel and headed to the airport. The quickest and cheapest way was by train.

In general, Copenhagen is an expensive city, but with a bit of planning and a few free attractions in mind, you can see a lot for less. Of course, there are many more things to do: there are many interesting museums and palaces to explore, and don't forget the Tivoli Park, Copenha-

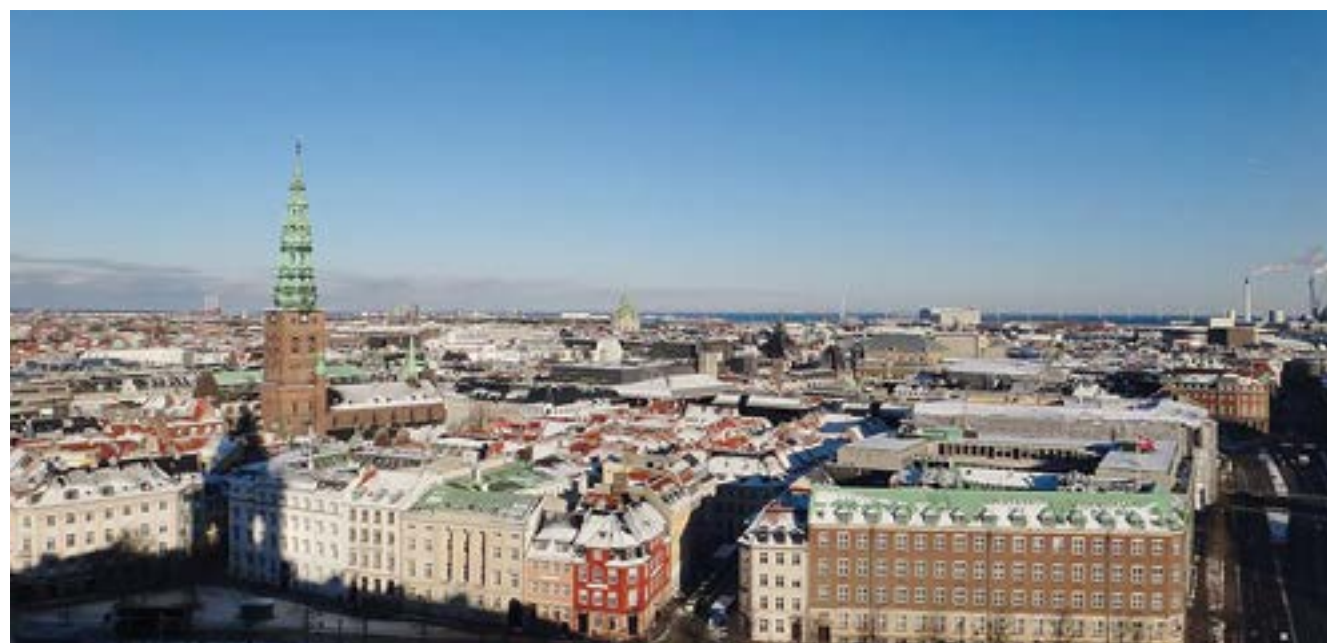
gen's most known amusement park. Unfortunately, even though our hotel was five minutes away from the park, it was closed for winter.

"The Danes are considered the happiest citizens, despite not seeing much sun and paying huge taxes"

Fun Fact

There are more bikes in Copenhagen than people! Copenhagen is a bike-friendly city and renting a bike is the cheapest way to move around.

Ed: For more travel stories and tips, visit Elina's blog at empnefsysandtravel.com



The view from the Tower of Christiansborg Palace // Elina Michaelidou

FOOD

food.felix@imperial.ac.uk



These pictures are making me pretty hungry // L'Antica Pizzeria da Michele

Worth the hype: L'Antica Pizzeria da Michele

Food writer *Bláithín Dockery* looks for the best pizza in the world... could it possibly be in Stoke Newington?

FOOD

Bláithín Dockery
Food Editor

Pizza is a food most students are far too familiar with. It's difficult to resist such a perfect food that satisfies all cravings, particularly when there seems to be some version of a pizzeria on every corner. But it is important to remember Pizza's glorious roots – Italy.

For a long time it was true that no-one could make a pizza quite like the Italians; however, it seems that a number of ambitious young chefs were aware of this fact and actually travelled to Italy to learn from the great masters. As a result the pizza market has changed dramatically in the past few years, with the likes of Pizza Pilgrims and Franco Manca serving up Neapolitan-style pizzas in multiple locations around London. The success

of such establishments shows that we will always hunger for pizza, but the real question is how they compare to a true Italian pizzeria. Fortunately that is where L'Antica Pizzeria da Michele steps in. A direct import from Naples – the birthplace of Pizza – L'Antica promises to bring the best pizza

“A direct import from Naples, L'Antica promises to bring the best pizza from Italy to the rather modest Stoke Newington”

from Italy to the rather modest Stoke Newington. L'Antica's original

location has been a local favourite since opening in 1870 (!) and recently amassed a major following due to its cameo in the 2010 Julia Roberts film *Eat, Pray, Love*. With this natural publicity, L'Antica merely had to find a new location and wait for the pizza/film lovers to arrive. And that is precisely what happened – but is it really worth the hype?

First Impressions

After trekking all the way to Stoke Newington we arrived at a very unassuming looking restaurant, quietly announcing its presence with a small light blue sign. The inside was also very understated, with a cafeteria-style decor rather than a proper dinner restaurant. The walls were rather bare and white, painted with quotes from *Eat, Pray, Love* and Italian sayings. At the back a large stone pizza oven was visible, with chefs bustling around it, speedily making the

pizzas. A waiter approached us and we were told that we would have to wait 15 minutes for a table. Bearing in mind that it was rather early (around five pm) I was quite surprised that it was already so busy, but I managed to contain my hunger and wait patiently until we were shown to our table. We were brought upstairs to a small room with a similar vibe to the downstairs, although it was less buzzy.

The Food

The menus stuck to two classics, Marinara or Margherita, demonstrating L'Antica's attention to creating something perfect. I decided to go for a Margherita. The pizzas arrived relatively quickly and were piping hot with a rich breadly smell. They had a classic Italian Neapolitan look: slightly charred basil on top of a bright red sauce and a golden crust with flecked dark spots. I could hardly

hold myself back so I pulled out a slice and took a bite. The tart tomato sauce was the first flavour that burst into my mouth. I could really taste the fresh sweet tomatoes, and almost felt transported to

a summer's day in Italy. The mozzarella was soft and rich balancing the soft, warm crust. Overall it was a real Italian experience and certainly filled my pizza craving.

Worth the hype?

Sadly no. Although L'Antica Pizzeria da Michele serves up gorgeous authentic Italian pizzas the hype surrounding the restaurant was rather exaggerated. Despite the number of years L'Antica has spent perfecting their recipes and sourcing the finest ingredients, the competition for Neapolitan Pizza is really heating up, so it may be more difficult to justify travelling to Stoke Newington when there's a Franco Manca round the corner!

Price

£7.90 for a Pizza Margherita

Best part

That perfect tangy tomato sauce

Worst part

Location

FOOD

food.felix@imperial.ac.uk

Exams have finished: here comes the emperor!

FOOD

Andrada Balmez
Food Editor

If you feel like you need to celebrate because you've just finished your January

exams, we've got you covered! Felix knows that going out is the best kind of celebration, but here are some (not-so-easy, but DELICIOUS) recipes you can enjoy on a lazy Sunday. If you don't trust

me, one of them was the favourite of Franz Joseph – so take his word for it, not mine.

Kaiserschmarrn

You will need...

- 6 eggs
- 380 mL milk
- 200 g flour
- 3 tbsp granulated sugar
- Raisins
- Vanilla sugar
- Rum
- Lemon rind
- Pinch of salt
- 50 g butter
- Icing sugar
- Cinnamon

1. Separate the eggs and start mixing the yolks. Add the milk, some vanilla sugar, rum (a bit!) and grated lemon rind – the more, the better, in my opinion. Mix some more. Once you got a homogenous composition, add the flour and mix until you get a smooth dough.
2. In a separate bowl, beat the egg whites with the granulated sugar and a pinch of salt until it starts forming firm peaks – this is way easier with a hand mixer; if you don't have one, you can try doing it just with some well-placed manpower, but I cannot imagine you succeeding. Fold the beaten egg whites into the dough mix – use a spatula and be patient; if you hurry too much, you will end up ruining your work.
3. In a pan, let the butter melt and when it starts bubbling, pour in the dough and after couple minutes, add the raisins over the top. Even though they are in the original recipe, they are, in my opinion, optional – but that's just because I really don't like them.
4. Cook until the underside is light brown and then turn over with a spatula and keep cooking until golden brown.
5. Now, time for the really fun part! It's time to tear it into small pieces (use your imagination for this, but remember that it's hot and you probably still want to use your hands afterwards). When you are proud with your result, add some granulated sugar on top and caramelize under the grill at a high heat.
6. When served, dust with icing sugar and cinnamon. You can eat it with marmalade, honey, or my favourite, maple syrup with ice-cream (I know somewhere out there an Austrian has died of shock because it is normally served with baked plums or fruit compote, but...).

Marillenknödel

You will need...

- 300 g low fat quark
- 200 g flour
- ~60 g butter (room temperature)
- Vanilla sugar
- 1 egg
- Pinch of salt
- 10 small apricots
- 10 sugar cubes (if you want them extra-sweet)
- Breadcrumbs
- Butter
- Cinnamon powder
- Icing sugar

1. Mix the room temperature butter with the vanilla sugar and a pinch of salt until it gets creamy.
2. Stir in the egg, the quark, and the flour until you get a malleable dough. I know I say it all the time, but you might need to adjust the quantities a little bit so your dough is not too sticky or too hard.
3. Wrap the dough in film and let it rest for 30 minutes at least – time to play some games, isn't it? No!
4. While the dough sits, you should take the stones out of the apricots and replace them with the sugar cubes – just imagining all the sugar melting when you start cooking them makes me drool a little bit.
5. On a floured surface, shape the dough into cylinders with a diameter of ~5cm and then cut it into slices. Flatten the slices in your hand, then place the apricot into the dough, press it around and seal well – and you will use your first attempt to see exactly how big the next slices should be. In the end, they should look like dumplings.
6. In a saucepan, bring some water to boil. Place the dumpling in water and allow to simmer for 10-15 minutes – stir from time to time, so they don't stick to one another.
7. In a separate pan, melt the butter. Add the breadcrumbs and cinnamon, and fry until golden. Add sugar and stir gently. Turn off the heat and add the dumpling into the prepared mixture. Roll it around so the breadcrumb mixture sticks to the dumpling.
8. Finally, dust with icing sugar!
9. P.S. It's ok if for your first try the dumpling fall apart, but they shouldn't. this will happen if the dough was not prepared perfectly!

FOOD

food.felix@imperial.ac.uk

So, why do people become vegetarian? The logic behind the lifestyle choice

Ever wondered why your friends are opting out of the midnight chicken nugget run? Wonder no longer - a Felix Editor has irritatingly questioned her friends about their eating habits so that you don't have to...

FOOD

Alice Davage
Food Editor

As a very keen meat-eater, I have always found it hard to relate to vegetarians. I grew up as part of a household who rarely ate a vegetarian meal. While eating out, I once witnessed my sister requesting her steak as rare as the chef can legally cook it. The smell of burgers at the campus Farmers' Market almost makes me drool, causing me to resent my pre-prepared salad. Simply put, I don't plan on giving up eating meat anytime soon. The thought is scary; I would crave the taste too much. I am therefore forever impressed by the people who manage to make such a dramatic lifestyle change and endeavour to discover why they chose to. Over time, through discussions with friends, I have learned that there are many diverse reasons people are/become a vegetarian and am constantly surprised when I uncover a new one. So, I sent out a bunch of surveys to vegetarian friends to quiz them about their reasoning and ask about any hurdles they faced (or are perhaps still facing) along the way. This article is a summary of the feedback I received and focuses on people who chose to give up eating meat, as opposed to having been vegetarians since birth (usually for religious or cultural reasons). To the people I pestered to fill

these out: thanks for being such good sports – you're great.

Environment

The most consistent reason people became vegetarian, everyone I quizzed mentioned it, is the environment. Considering that the vast majority are Imperial students and thus likely to be more aware of environmental issues than the average person, this is not entirely surprising and probably not representative of humanity as a whole. A wish to reduce their carbon-footprint by removing animals, particularly red meat such as beef, from their diets, is a major driver. Animal husbandry uses far more resources than

“Reducing their carbon-footprint by removing animals from their diets is a major driver”

crop farming, including energy, land, and water. In the long term, plant-based diets are therefore far more sustainable and will help reduce the rate at which the planet is spiralling into climatic disaster. Vast energy usage is unfortunately a by-product of modern life, and is in many ways logistically difficult to cut down on. However, we do not need to be wasting so



Don't these fruit and veg baskets look yummy... Nah? I'd rather have a burger too // Flickr/just1snap

much energy on food production, because animal husbandry is entirely avoidable. After all, some cultures and religions have been doing it for millennia.

Health

Others chose to change their diets due to health benefits. One person mentioned that eating meat simply doesn't "agree" with their body and switching to a plant-based diet has helped alleviate their problems. The omission of meat and fish from their diets has forced others to be more creative and re-structure their meals around this. As a result of shaking up habits, people think about what they are eating more and make a conscious effort to ensure that the food they are preparing is nutritionally balanced, possibly more so than before they became vegetarian. In answer to those of you who frequently ask

(I have been told) "but what about protein?", it's actually easier to eat the recommended amount than you might think: a serving of chickpeas for example, contains almost half of the protein an average adult requires per day. And of course, to fill themselves up people often end up munching on more vegetables, which is rarely a bad thing health wise (cheap too!)

Animal Welfare

Some people simply don't like killing animals. The food industry has tried to increase the quality of life of livestock through initiatives such as "Free Range", but this only works to an extent; they are still being raised to ultimately satisfy our desire to eat meat, which many consider unethical. There is an argument that animals eat animals (excluding herbivores), and so humans are "natural" in this regard. However,

we consider ourselves "superior" to other organisms due to our capacity to think critically and have feelings such as compassion driving our actions. If this is the case, then we should be able to reason with ourselves and overcome the instinct to eat meat that many animals possess, leading them to hunt and kill other animals.

Final Thoughts

Initially, the plan for this article was to explore some of the reasons why people choose to be vegetarian using information and opinions from the surveys I sent out; I am sure that this topic could be taken into further depth and I have merely skimmed the tip of an iceberg here. This was never meant to be a piece of propaganda designed to convert meat-eaters into vegetarians, which is an ulterior motive that I fear people may accuse a veg-

etarian writer of having. However, I have found some of these arguments rather compelling and on reflection I might try and cut down on my own meat consumption. I certainly don't plan to go cold turkey (excuse the pun) or ever completely become vegetarian for that matter. But I have been informed that practising vegetarianism, at least in the UK, is fairly easy, mainly due to good substitutes such as Quorn and Linda McCartney products (that apparently some people prefer), and because lots of restaurants have a few vegetarian options on the menu nowadays. Personally, I am a fan of the cheap and easy supermarket frozen veggie burgers, for example Indian-spiced spinach and lentil. If eating these instead of "real" burgers more often can help slow down climate change while simultaneously sustaining my bank balance, then hey, why not?



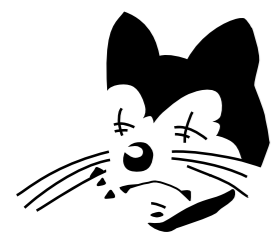
#leadthechange

STAND

**Nominations for The Leadership Elections 2018
open Wednesday 31 January.**

Hundreds of roles leading every aspect of Imperial student life
Whether you want to be an Academic or Wellbeing
Representative, Liberation & Community Officer, a Student Trustee
or a leader of your favourite Club - there is a position for you.
There are also roles in our Constituent Unions, and full-time
positions as Felix Editor or Officer Trustees. This is your chance
to become an Imperial student leader.

Nominations close 25 February. Stand for a position at:
imperialcollegeunion.org/elections



Hangman



Bitcoin. Bitcoin everywhere // Wikimedia

Imperial endowment fund revealed: mostly Bitcoin

HANGMAN

Negafelix
Editor-in-Chief

An analysis of the investments by Imperial has found that the vast majority of them are in cryptocurrencies.

An analysis of Imperial College London's endowment fund by *Hangman* has found that roughly 97% of all the College's assets are currently tied up in cryptocurrency. The discovery has caused a range of opinions across campus, from excitement to the chilling suspicion that the College

is now worth literally nothing.

The analysis, undertaken by Negafelix, *Hangman's* Editor-in-Chief, was performed on data obtained from a series of Freedom of Information acts asking for the history of the College's endowment fund investments. While just last year the fund was valued at around £ 250 million, and was invested in a wide-ranging portfolio, including gold mines, fracking companies, and Greene King breweries, the 2017 fund consisted of 12,557 bitcoins, 66,810 ethers, and 110,284,514 Cardanos. After sitting down with members of Imperial's DoCSoc, who patiently explained what a cryptocurrency was multiple times to the *Hangman* team, the analysis revealed

that these investments made up £240 million* nearly the entirety of the endowment fund's assets.

The remaining investments, which total a mere £1.2 million, have been

"The findings have led to the suspicion that the College is now worth literally nothing"

invested in a wide range of business ventures, including darts companies, lawn flamingo manufacturers, and Stonegate – the company that owns the

Fulham Slug.

The news was welcomed by a number of students, who felt that it showed the College was looking forward into the future. Thomas Rhidian, the Union's Ethical Arbitrator, said that the move to cryptocurrency was morally right: "it's about time we completely divested from large corporations like Shell or Imperial Tobacco, which are just making ourselves and the planet sicker. I always say 'better to have no money than dirty money', and I am glad the College is taking this on board, making a symbolic investment in products that are essentially completely pointless and worthless."

Michael Lim, an MBA student from the Imperial College Business School, said that the investment

was "sound": "yeah, I read this article in *Forbes* about this a few months back – cryptocurrencies are definitely a safe bet. There's no limit to how high they can climb."

"One student at the Business School said there was no limit to how high Bitcoin could go"

A number of staff, however, were concerned about the move, citing the increased financial pressure this puts on College: "I was quite concerned

when I got my paycheck last month, and it was all in something called 'Ethereum'" one academic from the Faculty of Medicine told us, "and then we were emailed telling us our pensions were being converted to Bitcoin. I had a look online at what this all means, and now I am absolutely fucking terrified for my future and financial stability."

When approached for comment, a member of DoCSoc's committee told *Hangman*: "Oh my god, I am not going to explain how Bitcoin works to you another time. And stop asking us where the fucking mines are."

*All figures relating to cryptocurrency valuation are correct at the time of writing, meaning they are probably incorrect at the time of reading.

HANGMAN

negafelix@imperial.ac.uk

Students launch legal case against College, saying exam timetable is "literal torture"

HANGMAN

Negafelix
Editor-in-Chief

A class action suit has been launched, claiming that the timetables breach the European Convention on Human Rights.

Imperial College London is gearing up for a court battle next month, as a group of students are taking them to court over their exam timetables, which they

describe as "literally a form of torture".

The legal battle was launched earlier this week,

"Students called the timetable 'a form of mental torture designed to break spirits'"

after Faculty of Natural Science undergraduates

were emailed out their examination schedules for the summer term. A group of students numbering nearly 50 – mainly physics undergraduates – immediately launched a class action suit against the College, arguing that the structure of the timetable breached article three of the European Convention on Human Rights, which prohibits torture.

In a statement issued earlier this week, the group said: "it is clear that what Imperial is engaging in here is an illegal, hostile, and cruel move. Giving us five exams in five days is a form of mental torture,

designed to break our souls and spirits. It's a cruel and degrading form of treatment – what we might expect in a dictatorship, or during ACC night, but certainly not from a university faculty".

The newly-appointed Vice Provost (enhanced coercive interrogation techniques), Thom Yarmouth, told *Hangman* that the timetable was "completely appropriate": "here at Imperial, we pride ourselves on world-leading research, which allows us to supply the global community with cutting-edge technologies. We also sometimes

have to do things like teaching undergraduates, which is a job we take very seriously. By liaising with governmental experts in the UK and USA, we have found that, through these "special methods of questioning", candidates give up much more information that they would otherwise, meaning they are more likely to perform well on the exam."

Students questioned the methods used by the College: "Yes, putting this much pressure means I cram as much information into my head as I can," said Harry Courtney, a final year physicist, "but

when the exam period is over I have difficulty fitting back into civilian life. Last year I forgot my own name, all I could think about was the Dirac notation"

When asked about whether she thought Imperial were practicing torture, Gertrude Bloom, a second-year biochemist, told *Hangman*: "are you talking about those big light-up straw things they have in the Union Bar now? I saw someone being force-fed a VK through one last week – is it a form of waterboarding?"

The case is set to go to trial on the 17th February.



ARIES

This week you're the *Felix* Editor, and you're pleased your editorial team has set up a dartboard in the office. You're not sure about having your face on it though.



TAURUS

This week you decide to broaden your gastronomic horizons. Now you'll be eating at Fusion and the Union.



GEMINI

This week you're on level five of the library when they close off access. Well, guess you live here now.



CANCER

This week you're a sabbatical officer, and you can't wait for the Leadership Elections. Finally, someone you can pass this curse onto!



LEO

This week the frustrations of Union Council are magnified by the fact attending meant you missed yoga. You punch the wall in 568 and shatter your hand.



VIRGO

This week you're the Union Bar, and you're embarrassed that your venerable history has been disgraced by the addition of giant fucking light-up straws.



LIBRA

This week your holiday goes awry when you confuse Mykonos for Davos. Turns out you can't wear beach casual to international meetings.



SCORPIO

This week you're so desperate to get out of labs you somehow manage to haul the mass spectrometry machine to the Union's waste amnesty.



SAGITTARIUS

This week you throw your full weight behind the UCU's planned strike action, and encourage academics to strike throughout the month of May. Can't fail exams if they're cancelled.



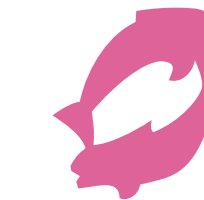
CAPRICORN

This week you won't stop talking to all your friends about the Oscar nominations, and what they mean for the industry. You have got no friends.



AQUARIUS

This week is the week you realise that you should have really knuckled down about four months ago. Oh well, there's always next year!



PISCES

This week you're the Horoscopes Writer, and you've finally written enough of these fuckers to go home.

CLUBS & SOCIETIES

felix.clubsandsocieties@imperial.ac.uk

IC ASTRONOMY SOCIETY (ASTROSOC)

Whether you are an amateur astronomer, an expert of the night sky, or simply want to give stargazing a go, Astrosoc is the place for you! Here, you can meet like-minded people, discuss and learn about astronomy (or just about anything), and, of course, have fun!

We organise a wide range of events, with the most frequent ones being our famous fortnightly observations. Our telescopes are high-end but easy to control, and we are more than happy to teach anyone who would like to use them. Once you get the hang of it, you are free to explore with the telescopes yourself. The picture shown next to this article was taken by a member of the society during an observation, so there is a lot to see out there, even in London! With the craters on the moon, star clusters and nebulae, the clouds on

Jupiter, and even the rings on Saturn, we can assure you there is no lack of stellar objects at which to marvel. This term, following suggestions from our members, we now start the observations earlier, at 6.30pm. This means that you don't have to wait around for long after lectures, and of course there is no need to stay up late to see the wonderful night sky! Our next observation evening, in collaboration with Science Fiction Society who will bring some space-related TV shows, will be held on the 30th January. It will be up on the eighth floor common room of Blackett Laboratory, fully equipped with three telescopes as usual – do feel free to bring your own camera along to take some photos. And not to mention the snacks and hot drinks we serve without fail!

Another series of our popular events are the regular guest lectures, where we invite top astronomers as speakers to give talks on a wide range of topics, from spacecraft



Come along to Astrosoc and enjoy the beautiful night sky with views like this // Nathaniel Gallop, Astrosoc member

missions to astrophotography, and even black holes! We have had great positive feedback and

they are well-attended, so we would encourage anyone with an interest to come along and listen in!

For an upcoming guest lecture, we have invited Dr. Roberto Trotta from the astrophysics group of

Imperial College to give us a talk on cosmology, which will be held on the 19th of February. There will be time after the talk to have a chat with the speaker, and to enjoy the refreshments provided.

Other than observations and talks, we also organise regular visits to observatories and museums. Just this year, we have done trips to the Greenwich Observatory, and to Mill Hill Observatory currently managed by UCL. Do not worry if you've missed those – there will be more next academic year so make sure to come along!

Do follow us on Facebook or drop us an email for more detailed information about the upcoming events, and you are more than welcome to come along even if you are not entirely sure yet – no membership is needed to try out our observations and guest lectures!

We all look forward to seeing you!

New Year, New News!

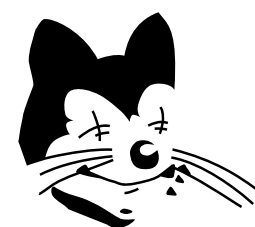
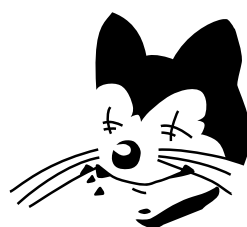


Felix

WEEKLY

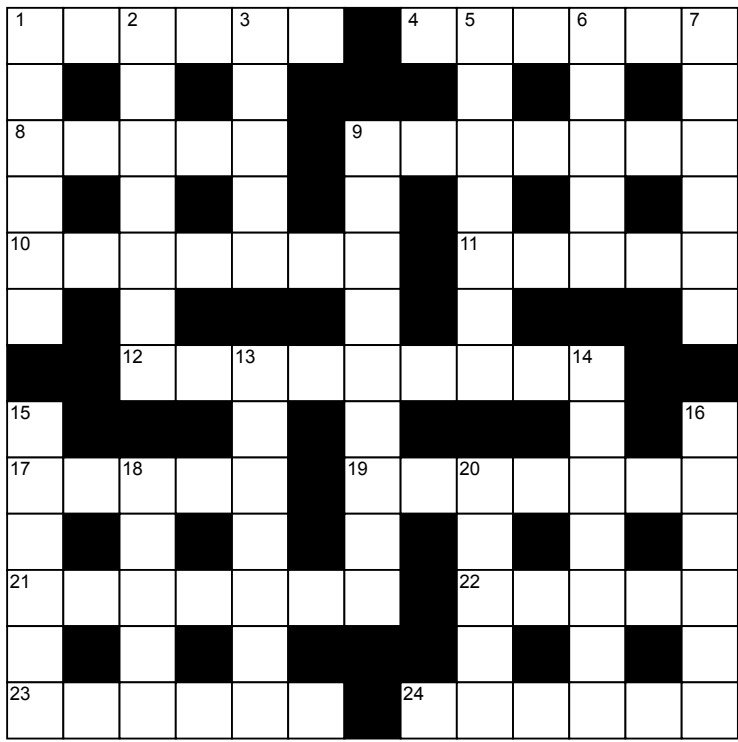
Felix are setting up a weekly newsletter, delivered straight to your inbox. Get all the best news, culture and sports every week.

Get the cat on the go!



PUZZLES

fsudoku@imperial.ac.uk

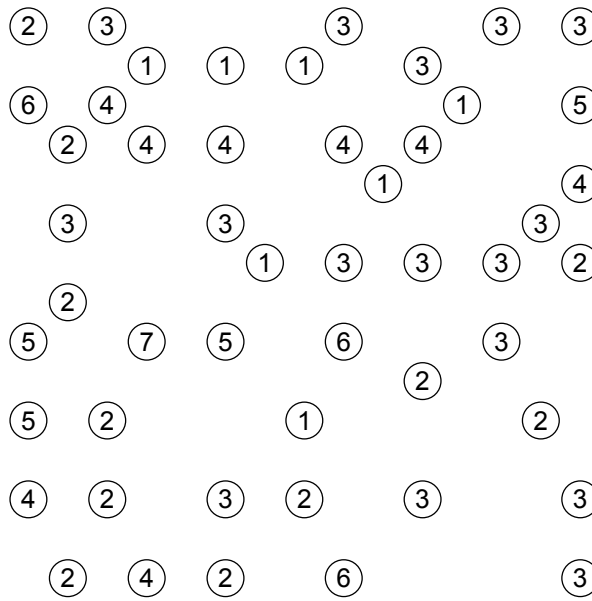


Across

- 1. Noisy quarrel (6)
- 4. Self-possession, coolness (6)
- 8. Questioned (5)
- 9. Terrible energy drink (7)
- 10. Section of a book (7)
- 11. Freight (5)
- 12. Religious leader (5,4)
- 17. Out and out (5)
- 19. Resurrect (7)
- 21. Bank employees (7)
- 22. National fruit of Pakistan (5)
- 23. Spinach addict (6)
- 24. Appraise (6)

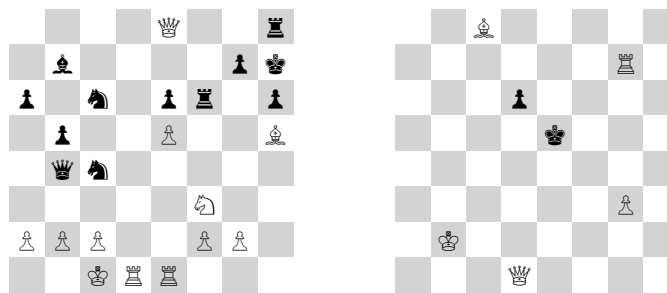
Down

- 1. Debacle (6)
- 2. Socially uncomfortable (7)
- 3. Inspect accounts (5)
- 5. Obelix's love (7)
- 6. Exterior (5)
- 7. Accept a loan (6)
- 9. Fat Tuesday (5,4)
- 13. Theft (7)
- 14. Progress (7)
- 15. Barney (42)
- 16. Despicable (6)
- 18. 17th century Bitcoin (5)
- 20. Seductive women (5)



Bridges

Connect all the circles with single or double bridges. The numbers indicate how many lines leave each circle. No lines can cross and all circles must have a path between them.



Chess

White to move first in both problems. Forced checkmate in five moves in the left problem and two in the right.

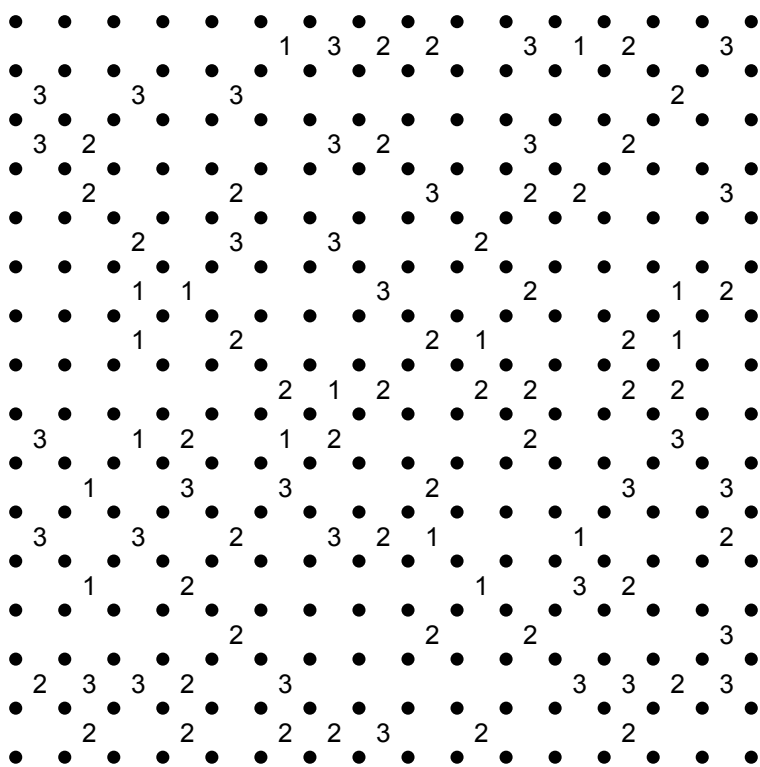
FUCWIT

1	Nonogram of Ketamine	205
2	Q	148
3	Puzzle Snuggle Cuddle Couple	144
4	TioUdin	141
7	Doctor Sudokwho	103
8	Luncheon Pals	102
9	OK	99
11	Imperial Stormtroopers	87
13	Abelian Grapes	63
18	Straight outta Skempton	40
21	Wreck-It Ramrod	28

Send in your solutions to *fsudoku@imperial.ac.uk* before midday Wednesday!

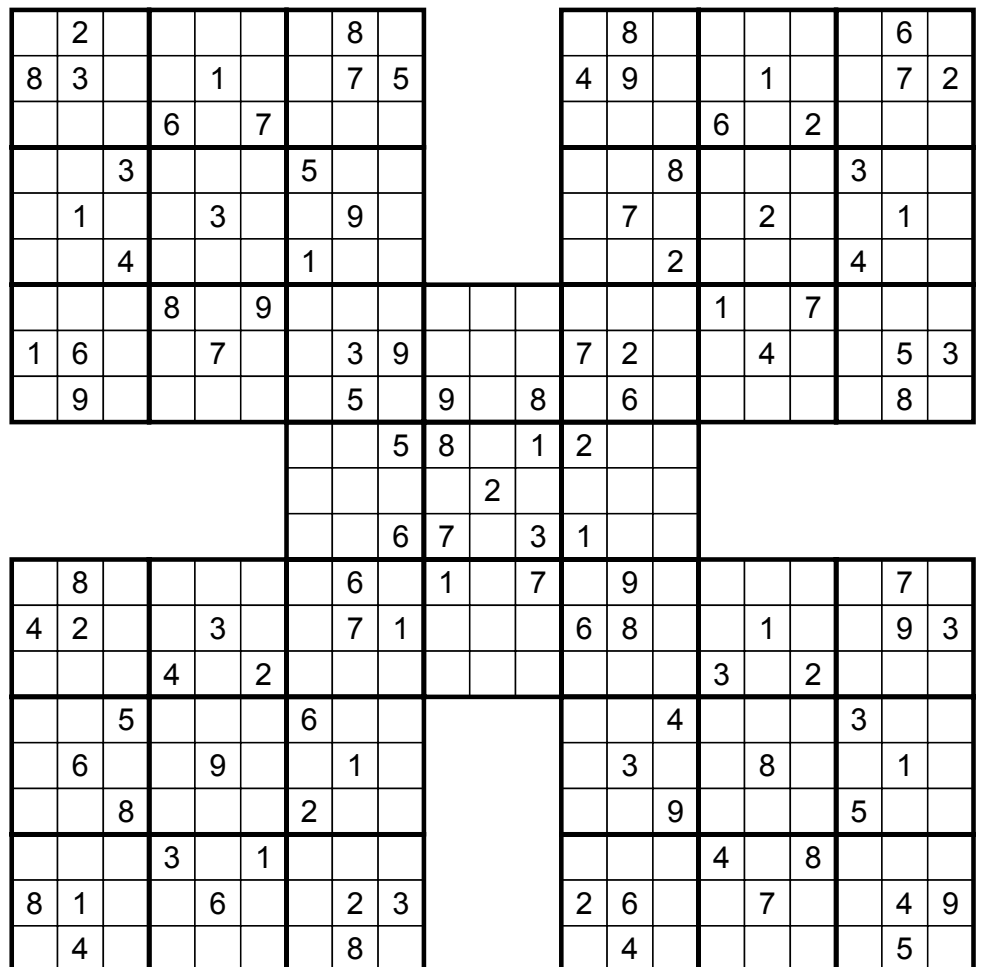
Points Available

Crossword	4
Bridges	2
Chess	6
Slitherlink	3
Samurai Sudoku	4
Total	19



Slitherlink

Draw a single, non-crossing loop by connecting adjacent points. The number in each cell indicates how many sides are closed.



SPORTS

sport.felix@imperial.ac.uk

ICURFC: New year, same old 2s

Rugby return this year, scoring an impressive victory against RUMS.

SPORTS

Nick Ustaran-Anderegg
ICURFC Press Officer

7	36
RUMS 2 nd XV	ICURFC 2 nd XV
XV	V

Last Wednesday saw the first match of the year for Imperial 2nd XV against RUMS (UCL medics) 2nd XV. This was an opportunity to continue with our winning form from before the holidays, and also to prove to coach LJ that the fitness work we had done before Christmas had not been completely undone. The match kicked off and IC instantly put RUMS under pressure. We set the tone in defence early on, with some big hits coming in from Will Bolton and happy George Nicholas. Harry Brady didn't take long to injure an opposition player, and due to their lack of subs

they were down to 14 men. Poor discipline was preventing us from taking hold of the match. A neat backs move opened up a hole for Jack Fraser, who ran over in the corner for the first try of the match. 5-0 to Imperial. After some nice offloads between the

"We set the tone in defence early on, with some big hits coming in"

forwards, we managed to get into their 22. A couple of simple passes later, I found myself going over the whitewash. Fraser converted and made the score 12-0.

Not wanting the match to be too easy, naughty Elliot Quigley took it upon himself to even up the numbers. He put in a malicious dump tackle on one of their players and was

given ten minutes on the sidelines to reflect on his actions. Half-time came and went, and soon Elliot was allowed back onto the pitch. We knew we could be playing better. A dangerous scrum, five metres from the opposition try line, gave the forwards an opportunity to show everyone how big they were. The RUMS pack was driven back over their try line and Elliot touched down on the ball for an easy try. 17-0. A scrum on the halfway line allowed the backs to show what they could do. A perfectly executed 'whitey' ended up with the ball out wide. Hugo Koide decided that the 3v1 was too risky, so he took the ball into contact and got tackled. Luckily, Sam Ha was there in support for the offload and some quick hands put Sorrell over in the corner. A conversion from Dan Kirrane made the score 24-0.

Complacency at having secured a bonus point for scoring four tries got the better of some of us. RUMS were able to run



The rugby boys, satisfied with their victory // ICURFC

"After the restart, our forwards showed their dominance again"

through a dog leg in our defence and score their only try of the game. After the restart, our forwards showed their dominance

again by breaking tackles and pulling off some incredible offloads. Particular mention has to be given to Tom Johnston, who managed to draw in their outside centre and winger, one of which he was pretty much giving a piggyback to, and then pass it out the back to Hugo – without looking. Even their players were in disbelief. Hugo took the ball into contact, again deeming an overlap too risky. Powerful running from our forwards

allowed us to get close to their try line, and sneaky Elliot dived through the middle of a ruck to score his second try. Dan added the extras to make it 31-7. A now-tired RUMS team kicked off again to us, and some more good hands down the wing quickly allowed Sorrell to score his second try, making him the second team member eager to avoid scoring a hat-trick. Final score 36-7 to Imperial. Sylvia is back.

ICU 3rd XV achieve distinction

The team come away from the London Irish Merit Tournament with 2nd place.

SPORTS

Andy Jespersen
Imperial 3rd XV

With no league fixture, the ICU 3rd XV made their way down to the London Irish for a merit tournament. Winning two of their three games, they earned just that. The University of Arts

broke the trend as always, arriving fashionably late and five players short. The opportunity was realised to volunteer Louis Benson to play for UAL – Si-Woo Kim kept him company. A 12-aside game ensued, with space to run on both sides. UAL made the first mark, but within a minute ICU's debutant Sam Muirhead had got one back, breaking through the UAL line from his own half to score. Within three

phases of the restart, ICU had lost possession and Si-Woo Kim was breaking ICU ankles, wherever he pleased. Luckily, he offloaded the ball to Benson, from whom possession was quickly turned over. In the broken play that followed, the ball ended up in Joao Pereira's hands on the other side of the pitch to score the try. Now UAL legs were tiring, and turnovers became a regular occurrence.

Although their fullback was still running hard and fast, he could do nothing to stop Hicks and Rudman both running in to score to finish them off. The final score was 24-10.

In the second game of the tournament ICU put up a strong showing against a University of Chichester side four leagues above them. Despite ICU's efforts, they let in two tries and UCRFC won 10-0. In the third and final game

of the day, ICU faced the University of Portsmouth. This was a breeze, relative to the games beforehand. From kick-off, ICU walked it up the pitch. The first successful chip and chase of the day, forced the Portsmouth fullback to carry the ball into touch. The resulting line out, saw Connor Crook carry the ball over the line. Portsmouth were already tiring. Within two phases of kick-off, Morgan Ball

had broken through in the ICU half and offloaded to flanker-turned-flyhalf Jespersen to do the leg-work and score the try. Somewhere along the line Rudman managed to get on the score sheet again, in a rare manoeuvre to avoid hat-trick avoidance. The game ended on a bittersweet tone as Portsmouth ran in a try to finish it all 19-5. All in all, it was a good day out.