



Felix

The Student Newspaper of Imperial College London

NEWS



Physics students asked to be nicer to each other

PAGE 4

SCIENCE



How DNA can help solve our data storage problem

PAGE 12

FILM



Sundance: what this year's line-up says about film

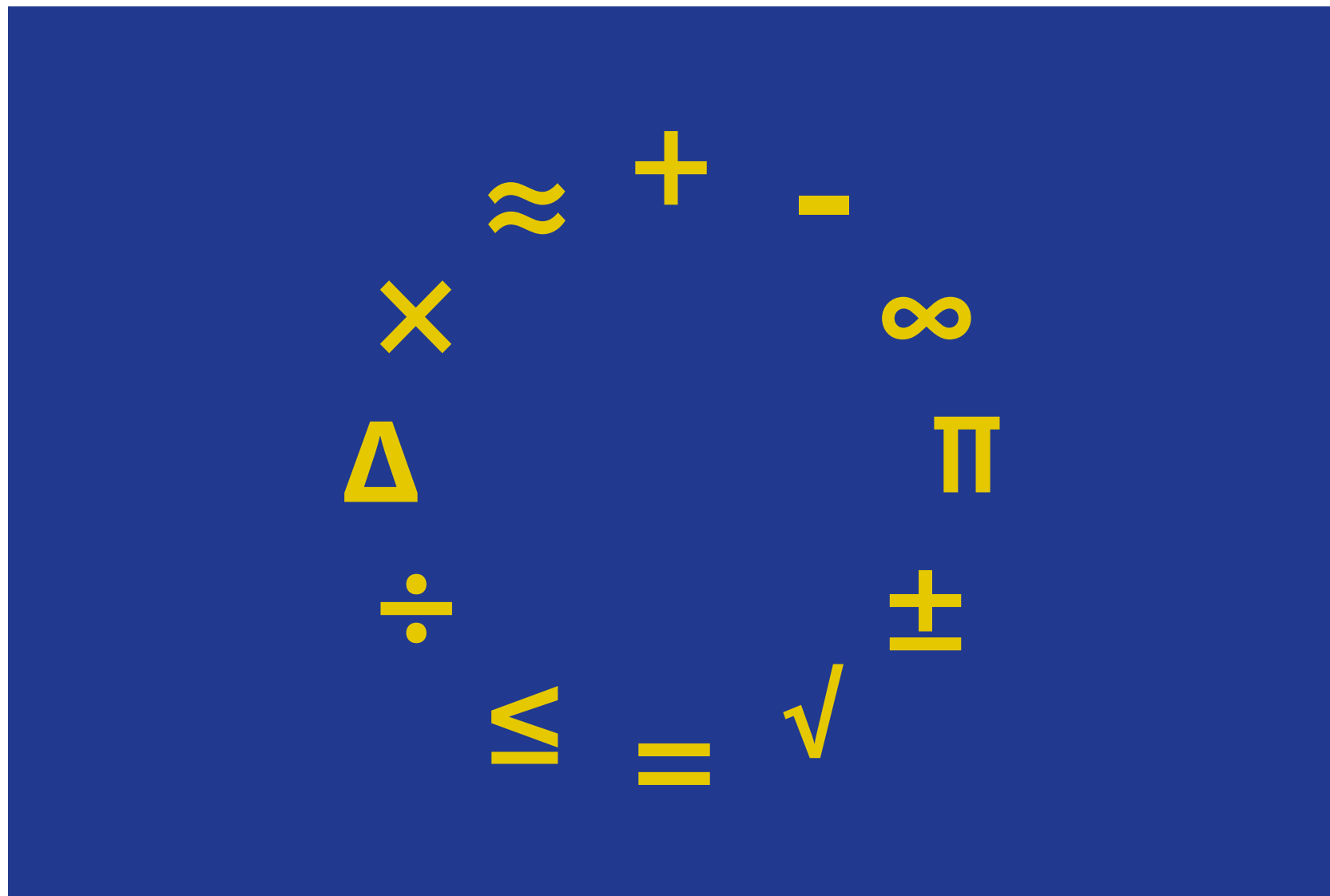
PAGE 25

GAMES



eSports Varsity comes to Imperial

PAGE 32



The new maths lab indicates what a post-Brexit academic world might look like // Felix

New mathematics partnership gives hope to post-Brexit research

NEWS

Joanna Wormald
Deputy Editor

Imperial is opening a maths lab in partnership with a French research agency, offering some hope to post-Brexit academic funding

Imperial has partnered with a French research agency to open a maths lab, which will promote col-

laboration between the UK and France as Britain enters a post-Brexit

"The unit will have equal status to a French lab, meaning academics will have the same funding"

world.

The International Joint Research Unit (UMI – *unité mixte internationale*) is the first research collaboration between the UK and France's National Centre for Scientific Research (CNRS) – Europe's largest fundamental science organisation. The UMI will have equal status to a CNRS lab, meaning academics will have the same funding and resources as their continental counterparts. The focus of their work will be on areas including number theory, mathematical analysis,

biomathematics, and financial mathematics.

"Professor Craster said the unit 'serves as proof these times of uncertainty need not be times of stagnation'"

The UMI will be headed by Imperial's Professor Richard Craster. Speaking to Radio 4's *Today* programme, Professor Craster said: "The new partnership serves as proof that these times of uncertainty need not be times of stagnation."

Professor Craster was not the only person to make an oblique reference to Brexit when commenting on the UMI Abraham de Moivre (named after the French mathematician). The French ambassador to the UK, Jean-Pierre Jouyet, described the UMI

Cont. pg 3

EDITORIAL

CONTENTS

EDITORIAL 2

NEWS 3-6

POLITICS 7-8

COMMENT 9-10

SCIENCE 11-14

MUSIC 15-19

BOOKS 23

FILM 24-27

TV 28-30

GAMES 32-33

TRAVEL 34

FOOD 35

HANGMAN 36-37

PUZZLES 38

SPORTS 39-40

How we can make a difference

We start this week off with a bit of good news: the opening of a maths lab at Imperial, which is a collaboration between French and UK research groups. The International Joint Research Unit will have equal status with its French counterpart, meaning that the academics working there will have the same access to funding as their counterparts across the Channel. It's a little piece of stability, amid the floating sea of awful uncertainty that is Brexit. Three cheers for collaboration!

Elsewhere, however, things aren't looking so bright. This March, it will have been three years since the 'misogyny at Varsity' incident. For those of you who weren't here when it happened – or were, but don't follow sports (don't blame you) – IC Women's Rugby were scheduled to close out the 2015 Varsity with the headline match. It was meant to be a triumphant celebration of women in sport, shaking things up, and making change. Things didn't go to plan, however – the coaches left early, the



Fred Fyles – Felix Editor

food left out for the team was cold and half-eaten, and Imperial staff were overheard making derogatory comments about the players. All in all a bit of a shitshow really.

In response, to this incident and others, the College commissioned an investigation to look into the institutional culture of Imperial. It concluded that there were problems with harassment and bullying, people didn't know where to go for help, and one participant spoke of a culture of misogyny that was so deep as to be in-

grained within Imperial's very structures. It made for depressing reading.

Of course, the College said that lessons should and would be learned from the report. But that was then, and this is now. Has anything changed in the three years since, really? Since coming into this role, I've come into contact with a vast array of people – way more than I had previously in my self-imposed exile to medic-land – and the same topics keep cropping up.

I hear stories of students who have been

made to feel uncomfortable at constituent union dinners, after being forced to recount their sexual experiences, eventually just leaving early; I've spoken to people whose lecturers have told them that women "find science harder", and crack jokes about them being carried along by the men in their group; and I speak to sports players who feel that women's clubs don't get the attention they need to develop or blossom. It happens too often for this to just be a few chance incidents – something needs to be done.

Over the next few weeks, *Felix* will be carrying out a project looking at misogyny at Imperial. If you're interested in making a difference, please complete our online survey – it only takes five minutes, and while we can't promise an Amazon voucher or anything like that, you do get the satisfaction of feeling that you've made a difference, and contributed to something that has the potential to see how we can make Imperial a university for all: <http://bit.ly/2EV3Q6z>

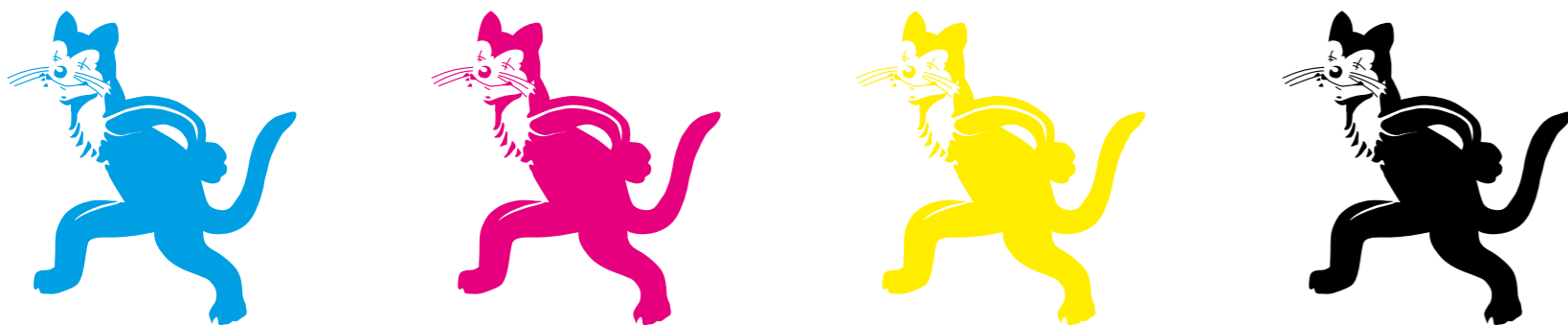


The Felix Team

- Editor-in-Chief**
Fred Fyles
- Deputy Editor**
Joanna Wormald
- News Editors**
Joanna Wormald
- Politics Editors**
Avirup Banerjee
Divyen Vanniasegaram
- Comment Editors**
Alan Perfect
Charlie Titmuss
- Science Editors**
Chris Richardson
Henry Bennie
- Tech Editor**
Tom Mrazek
- Arts Editors**
Indira Mallik
JJ Cheng
Adam Gellatly
- Books Editors**
JJ Cheng
Alice Peberdy
- Music Editors**
Andy Djaba
Adrian LaMoury
Henry Eshbaugh
- Film Editors**
Mikhail Demtchenko
Ashley Luckyram
Mark Aduol
Michael Purdy
- TV Editor**
Andrew Melville
- Food Editors**
Chun Yuan Hii
Alice Davage
Andrada Balmez
- Travel Editor**
Edita Pileckyte
- Puzzles Editor**
Hamish Beck
- Sports Editor**
Imraj Singh
- Copy Editors**
Alex Adler
Ash Pattar
Astrid Zong
Selin Olenik
Rhidian Thomas
Ezgi Ozyilkcan

Felix Office
Beit Quad, Prince Consort
Road
London, SW7 2BB
Tel: 020 79548072
Email: felix@ic.ac.uk
[@feliximperial](http://felixonline.co.uk)
Printed by Mortons Media
Group, Boston Road,
Horncastle, Lincolnshire
Registered Newspaper
ISSN 1040-0711
Copyright (c) Felix 2017

Felix is recruiting!



We want you – yes, you! We're looking for writers, photographers, editors, illustrators, reporters, computer experts and grammar nerds to join our team. No experience needed – we'll teach you everything you need to know. If you're interested, send us an email on felix@ic.ac.uk

NEWS

news.felix@imperial.ac.uk

Undergraduates invited to take part in this year's National Student Survey

NEWS

Fred Fyles
Editor-in-Chief

The National Student Survey, which was boycotted by several other student unions last year, has opened for final year undergraduates.

Students have this week been invited to take part in the annual National Student Survey (NSS), through which they can give feedback about their course.

The survey, which is open to all final year undergraduates, opened on the 8th January, and will run until the end of April. Last year's NSS saw a successful boycott by a number of UK universities, who cited concerns about links to increasing tuition fees.

Last year's NSS results showed a wide range

in student satisfaction, with the Departments of Physics, Chemistry, and Aerospace Engineering coming under heavy fire. Overall Imperial placed 74th in terms of satisfaction, placing it level with Cardiff and Hull. Imperial received particularly poor response for feedback and assessment – overall, fewer than half of physics students surveyed felt marking was fair or feedback timely.

"Last year's NSS saw the Physics Department coming under fire"

In an email sent out to students, Professor Simone Buitendijk, Imperial's Vice-Provost (Education), and Nick Burstow, Imperial College Union's Deputy



Professor Buitendijk has asked final year students to complete the survey online // CC

President (Education), asked final year students to complete the survey online. They said the NSS gives students "a chance to leave a lasting impact on Imperial" after they left the university, and their responses would "help the College see both where it is excelling but also where it can improve".

The NSS last year was marked by a boycott, which saw twelve

universities omitted after they failed to reach a 50% participation rate – the minimum requirement for inclusion. Universities omitted included UCL, Oxford, and Cambridge, with UCL seeing a 30% year-on-year drop in participation. Imperial's final participation rate was 74%, which Buitendijk and Burstow described as "a figure we hope to beat this year".

The boycott was organised in response to concerns that NSS scores would be linked to the Teaching Excellence Framework (TEF), an awards scheme that would have allowed universities to raise their tuition fees in line with inflation. In October, however, Theresa May announced plans to freeze tuition fees at a maximum of £9,250 until 2019.

The NSS is sent out every year to all final year undergraduates at UK higher education institutions. It asks 27 questions across a number of domains, such as "Assessment and Feedback". It is commissioned by the Higher Education Funding Council for England (HEFCE), and undertaken by Ipsos MORI.

New maths unit highlights "importance of international collaboration"

NEWS

(cont.)

as "a great milestone" and emphasised the importance of immigration in connecting researchers and students.

"Mobility is fundamental in science, particularly in mathematics," he said, adding: "Freedom of movement is an essential driving force."

Imperial's President Professor Alice Gast

echoed Jouyet's remarks, saying: "UMI Abraham de Moivre is a testament to the importance of international collaboration and it is a mark of the friendship between France and Britain. We take special pride in the fact that this is the first UMI in the United Kingdom."

Professor Gast has previously highlighted the need for "good immigration policies that enable us to bring in talented people" post-Brexit.

"Professor Craster said the unit 'serves as proof these times of uncertainty need not be times of stagnation"

Since the Brexit vote in 2016, some Imperial staff have returned to their home countries in the EU. Staff still remaining at the College have taken advantage of presentations and one-to-one advice sessions regarding legal support.

Last year, Professor Gast told French newspaper *Le Monde*: "We intend to remain the most international institution. We do not want border controls to jeopardise

this situation. If there are border controls, we will commit to always collaborating with people of talent."

EU citizens make up one quarter of Imperial's staff and one fifth of its student body. In October 2016, Professor Gast announced an annual £100,000 fund to "develop collaborations in Europe which lead to new science and to applications for external funding."

The opening of the

UMI was marked by a symposium entitled *New Frontiers in Mathematics*. Speakers included Fields Medal winners Professor Cedric Villani ("the Lady Gaga of mathematics") and Imperial's Professor Martin Hairer.

More than 2,700 collaborations between Imperial and CNRS researchers have been published in the past five years.

Physics students sent email, reminding them to "conduct yourself sensibly"

NEWS

Joanna Wormald
Deputy Editor

Students were reminded that homophobia, sexism, and racism were not acceptable in the department.

The physics department has warned students to be "mindful of your behaviour and conversations" in a "gentle reminder" to promote respect and courtesy.

An email sent at the beginning of this term told students that the department is "committed to promoting an environment where everyone is treated with respect and courtesy" and urged all students to play their part in doing this.

It goes on to say: "This [showing respect for others] involves

discouraging harassment, bullying and victimisation by making it clear that such behaviour is unacceptable, and supporting those who suffer from it and who are considering making a formal complaint."

"One student said overhearing graphic sexual violence was common"

The email also quotes the physics department's student handbook, warning: "violent, aggressive, drunken, destructive or other undesirable behaviour can be met by a fine or suspension." These punishments may also be incurred by sexist, racist or homophobic behaviour. Felix understands that the email was not



Students were told to contact their tutors if they had concerns // CC

prompted by any specific incident, suggesting no formal complaint has been made at this time.

One physics undergraduate Felix spoke to identified sexism as "a really widespread issue", saying: "The conversations in the computer suite are pretty disgusting, and you can always overhear something offensive. Hearing

conversations about graphic sexual violence is really commonplace."

They also told Felix that "people really love to shit on the department." Over the past few years the Department of Physics has faced a number of problems with student satisfaction: in last year's National Student Survey they came last in terms of

satisfaction, while student unhappiness led to a drop in the league tables last year.

The Department of Physics was this month taken over by Professor Michele Dougherty, who replaced Dr Kenny Weir, the acting Head of Department.

The email concludes by referring students to

details on the College's complaint procedures and a sexual misconduct survey, which closed earlier this week, run by the National Union of Students. Students facing harassment are advised to talk to their personal or senior tutors before taking any formal action.

Student Academic Choice Awards set to officially open nominations this week

NEWS

Fred Fyles
Editor-in-Chief

The SACAs, which had the highest number of nominations ever last year, officially open on Monday

Imperial College Union's Student Academic Choice Awards (SACA)

will have its official launch this Monday, 15th January.

The awards, which the Union describe as the "flagship event for empowering students to recognise, reward, and celebrate excellence among College staff", have been running for the past six years.

College staff can be nominated by students across eight categories, such as 'Best Supervision' and 'Best Support Staff'.

Last year 831 nominations were received in total for the SACAs, the most they had ever received since their inauguration in 2012; 'Best Teaching for Undergraduates' was the most popular category, with nearly 300 nominations received.

Nick Burstow, the Union's Deputy President (Education), described the SACAs as "the best campaign the Union runs."

He told Felix: "I can guarantee that every single

"Nick Burstow, Deputy President (Education), described the SACAs as 'the best campaign the Union runs'"

student here will know at least one staff member they will remember long after they graduate, because of the positive impact that member of staff has had."

"We all know how great we feel when we're congratulated and thanked for a job well done, and we mustn't forget that our teachers and support staff are just the same. It's so important that we take a couple of minutes to say "thank you" and let that

member of staff know we appreciate all they do for us."

Nominees will receive a branded SACA mug, and the shortlisted staff will be invited to the awards ceremony on May 14th.

Nominations may be made online at the Union website.

Vice-chancellor of Bath University asked to leave immediately amid ongoing pay row

NEWS

Joanna Wormald
Deputy Editor

Dame Glynis Breakwell has been at the centre of a long-running argument around senior pay at universities.

The vice-chancellor of Bath University is facing pressure to leave immediately following a controversy over high pay.

Dame Glynis Breakwell made £471,000 in the year up to April 2017, and had received thousands of pounds in benefits in kind, when she announced her retirement last November. She planned to step down from her role at the end of November 2018 and take a six month sabbatical. This would allow her to continue to collect her full salary until February 2019.

After a successful vote of no confidence – the



The bucolic campus of Bath University has been the centre of a debate on VC pay // Wikimedia

second Dame Glynis has faced in recent months – the university's court has urged Dame Glynis to leave immediately. It further said that the university's council had acted beyond its power in granting Dame Glynis the six month sabbatical. The court's role is only advisory and the council may reject its suggestions.

Dame Glynis made headlines when she was

revealed to be the UK's highest paid vice-chancellor. Her salary of £468,000 a year was supplemented by an interest-free loan of £31,000 (which has since been written off) for a car, an allowance for a housekeeper for her £1.6 million Georgian townhouse, and thousands of pounds claimed in expenses. In the past academic year, Dame Glynis had also received

"Bath University's Court has urged Dame Glynis to leave immediately, rather than in Feb 2019"

a pay increase worth more than the annual salary of some of Bath University's employees.

The lengthy row over vice-chancellors' pay prompted former universities minister Jo Johnson to set out plans requiring universities to publish details of staff earning more than £100,000 and justify salaries over £150,000 to the Office for Students (OfS). The

OfS has also attracted criticism lately over the appointment of journalist and free schools advocate Toby Young to its board. Young resigned following a backlash over misogynistic, ableist, and classist remarks made on Twitter and in his columns.

Imperial College London has one of the highest numbers of highly-remunerated employees, with 130 employees above £150,000 per annum.

Professor Alice Gast, the President of the College, was paid £430,000 in 2015/16, making her the second-highest paid head of a Russell Group university. A College spokesperson Felix spoke to last September said: "Imperial is a world top-ten university, offering the very best in education, science, and innovation. Our success depends on attracting world-class talent, and our remuneration reflects that."

Woodward awaiting new cladding, while academic buildings confirmed safe

NEWS

Fred Fyles
Editor-in-Chief

A review of Imperial's cladding has been carried out following last summer's tragic Grenfell Tower fire, in which more than 70 people died.

A review of the cladding used on faculty buildings has confirmed they pass regulations.

The tests, which were ordered by the government following the Grenfell Tower fire, were carried out over the past several months, with assistance from an external consultant. The review found none of the buildings used the composite

cladding that had failed governmental standard.

"College are awaiting test results before replacing Woodward's cladding"

The results of the

review were made available to Felix around five months after Woodward Buildings, in North Acton, was found to have cladding that failed the safety tests. When asked in December of last year, a College spokesperson told Felix they were awaiting tests carried out by the Building Research Establishment (BRE) and advice from consultants before carrying out the replacement. They said:

"We expect to have the results from these tests early in the new year and will take all necessary steps."

The review was unable to identify the exact specifications and origins of the polycarbonate panels used to build the greenhouse atop the Roderic Hill building. A spokesperson for the College said polycarbonate "often contains some form of additional fire retardant",

and the panels usually have a "reasonable" level of flame resistance. The greenhouse, which is not part of Roderic Hill itself, was established in 2012 as part of Imperial's investment in plant sciences.

The tests were ordered following the tragic Grenfell Tower fire, which began on the 14th June 2017, and spread rapidly through the 24-storey structure, leaving 71 people dead.

NEWS

news.felix@imperial.ac.uk

Imperial physicist recognised in Blavatnik Awards for young scientists

NEWS

Joanna Wormald

Deputy Editor

Dr Claudia de Rham was awarded a Finalist title, in the first year the awards were open to UK scientists.

An Imperial physicist has become one of the first people from the UK to win the Blavatnik Awards, which recognise outstanding young scientists under the age of 42.

Dr Claudia de Rham was awarded the Finalist title in the Awards'

Physical Sciences & Engineering category, in the first year the awards have been open to entrants from the UK. She will receive a \$30,000 cash prize and a medal in a ceremony to be held this spring.

"Dr de Rham said winning the prize was a 'huge honour'"

Dr de Rham thanked the Blavatnik Foundation, which established the awards in 2007, for the "huge honour" of winning the prize. She said: "My area of research is theoretical physics with an emphasis on gravity and

cosmology. Our findings are always more of a fundamental nature, with little prospect of practical applications.

"I am therefore delighted to see this fundamental research being recognised within the physical sciences and engineering community, as I believe it is essential for the development of society."

The Blavatnik Awards' citation for Dr de Rham's work said: "It [Dr de Rham's research] has revolutionised our understanding of the nature of gravity, founding a new field of study that connects cosmology with particle physics and the nature of spacetime itself."

Dr de Rham credits her work to collaborators, giving particular thanks

to Dr Andrew Tolley at Imperial's physics department and Professor Gregory Gabadadze at New York University for their teamwork.

"Collaboration and sharing ideas is the single most important aspect of our research," said Dr de Rham. She added: "I will use this prize to continue

nurturing my existing collaborations as well as foster further collaborations with young scientists worldwide."



Dr Claudia de Rham is one of the first UK scientists to win the award // Imperial

Mental Health at Imperial

What help is available at College?

Features, page 9 and 10

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

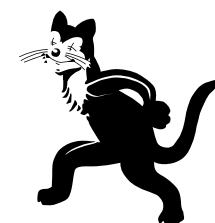
Felix, 20th March 2015

3 years on...

Has anything changed?

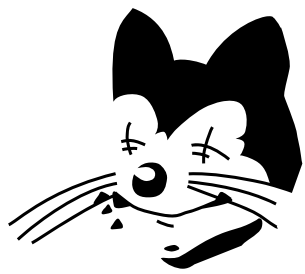
This term, *Felix* is investigating misogyny at Imperial. Three years after Imperial College Women's Rugby was let down at Varsity, we want to know if anything has been done to change the on-campus culture.

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



POLITICS

felix@imperial.ac.uk



Palestine: apartheid, ethnic-cleansing & discrimination

Friends and comrades of Palestine deliver a fighting response against the Felix article published last November about the Israel-Palestine debate.

POLITICS

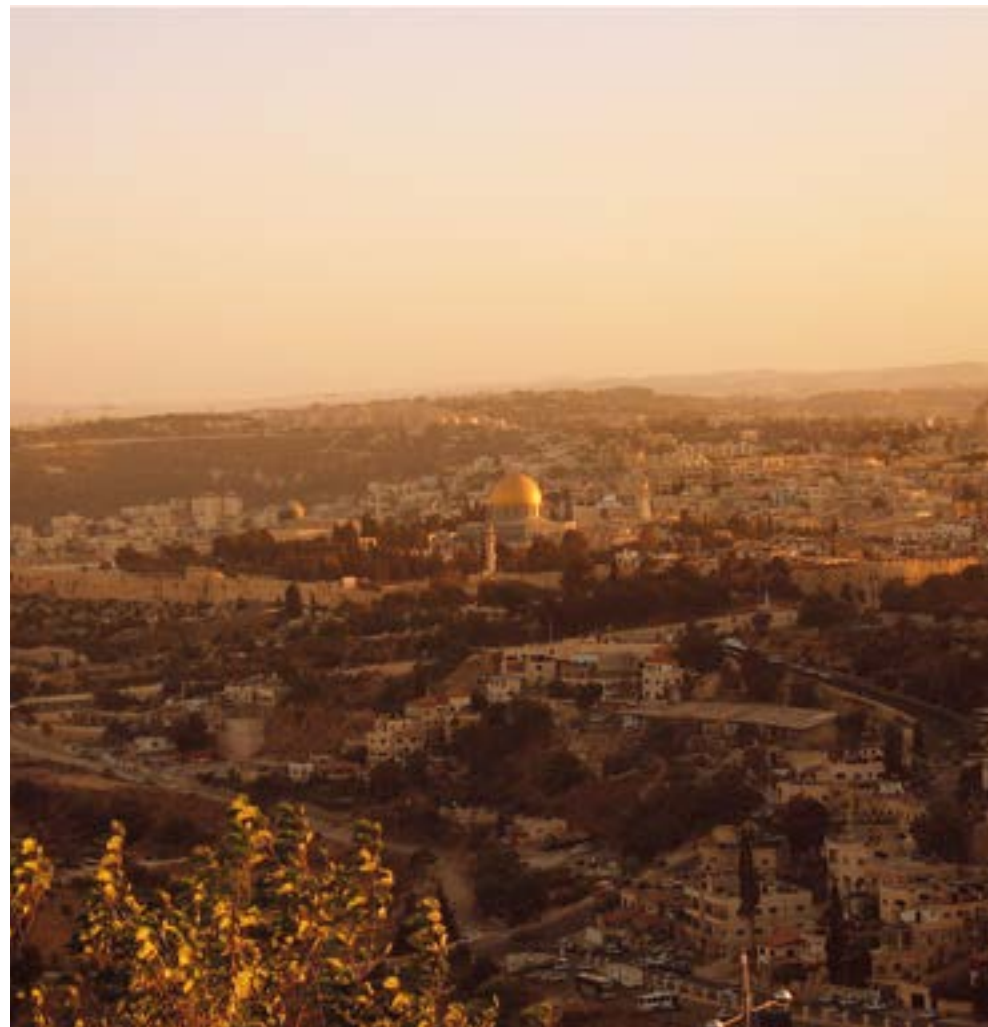
IC Friends of Palestine

Politics Writers

In today's 140-character world, it's all too easy to blur the line between fact and fiction, and apply false assumptions leading to fallacious beliefs".

When we opened the *Felix* edition containing an article entitled "A response to those who criticise the Balfour Declaration", we were eager to read on: an opinion most likely opposing our own, and written by two Imperial students – thus presumably logically thought out and supported by evidence. What better way of challenging one's own beliefs? Unfortunately, we got as far as the second paragraph before we began to find misrepresentations of well-known statistics alongside unsubstantiated arguments and sweeping generalisations throughout the article.

Because the authors will not hear from us what Zionism is, then let's take a closer look at Theodor Herzl's proposals for a Jewish homeland – the very same man that coined the idea of Zionism. Herzl himself stated that antisemitism could not be defeated or cured, only avoided, and that the only way to avoid it was the establishment of a Jewish state. These claims were made by him after witnessing the blatant anti-Semitism that was present at the Dreyfus



Jerusalem is the centre of a long-running political argument // Pixabay

case in Paris. Beginning in late 1895, Herzl wrote *Der Judenstaat* (*The State of the Jews*). The book argued that the Jewish people should leave Europe either for Argentina or, preferably, for Palestine, their historic homeland, if they wished to. Herzl then negotiated with the British regarding the possibility of settling the Jews on the island of Cyprus, the El Arish region in the Sinai Peninsula in Egypt, and Uganda. So, quite clearly, the establishment of a Jewish homeland in Palestine specifically was not his utmost priority, since, although he mentions Argentina or Palestine

as choices, he generally refers to the location of

"Palestine and Jerusalem are holy sites of three religions, hence none should have a larger claim over the others"

the state as "over there" in his book, and considered four other possible areas.

The land of Palestine was one of his choices due to historic ties with the Jewish religion; but this is not something surprising, since all three Abrahamic religions have historic ties with the land of Palestine – it's the place where Jesus Christ was born, died, and buried, and where the Prophet Mohammed is said to have travelled to from Mecca, and then ascended to heaven from the Al Aqsa Mosque (located in Jerusalem). Palestine and Jerusalem are holy sites of the three Abrahamic religions, hence none of them should have a larger claim over this land than the other two. This is

something acknowledged by Herzl himself, as well as Arthur Balfour when he signed the declaration. So we return back to the same question posed in the initial article: Why is it then, that Palestinians have suffered ethnic cleansing, and exist as second class citizens in the state in Israel?

What the authors of the response to our article

"There are countless cases of random searches and detentions being carried out in the late hours of the night"

have answered is a pure blatant denial of these facts, ignoring the stories of displaced families living in refugee camps, or children in Gaza with no access to clean water or electricity because the supply is being cut by Israel when they please. There are countless cases of young Palestinian boys and girls being attacked by illegal Israeli settlers, checkpoints that only Palestinians have to go through in order to carry out daily activities such as going to work, and random searches and detentions carried out at late hours of the night.

Palestinians are being held in prison without trials or accusations

(including those who are underage), torture tactics are being carried out during interrogations, there's a ridiculously long list of discriminatory laws existing against Arab citizens in Israel, the separation wall is twice as tall and four times longer than the former Berlin Wall, and yes, ethnic cleansing did happen, it's called Al Nakba – in 1948 750,000 Palestinians were forcibly displaced from their homes, with another 300,000 refugees being displaced after 1967; as of 2015, for the UN Relief and Works Agency for Palestine Refugees (UNRWA) mandate there are 5 million Palestinian refugees.

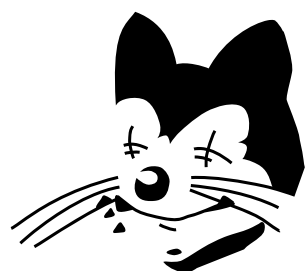
So no, these are not "sweeping generalisations" or "buzzwords" these are facts, that the writers purposely chose to ignore because it suited their political agenda. Every single listed violation of human rights above has been well-documented, so if you will not take it from us, the oppressed, maybe sources like Humans Right Watch, UNRWA, Unicef, Haaretz, and Wikipedia will be valid enough.

And since the authors cited people that have experienced the South African Apartheid, maybe they will find Nelson Mandela's view on the conflict relevant: "we know too well that our freedom is incomplete without the freedom of the Palestinians."

Ed: An online version of the article, with links to references, is available from felixonline.co.uk

POLITICS

felix@imperial.ac.uk



Innovation will save us from an economic death

We can return to long-term economic prosperity if we take a few lessons from the laws of thermodynamics.

POLITICS

Tom Hall

Politics Writer

The global economy is stalling because of a lack of innovation. Beyond computers, there is no longer a revolutionary mentality towards technology. You can see it in our psychology: we call ourselves the developed world, as if all great strides have already been made. Granted we depict our visions of the future in Hollywood movies, but – beyond improved CGI – these visions largely haven't changed.

If you look beyond the Internet and beyond superficial design, we have done little more than incrementally improve in recent decades. Aeroplanes are still largely recognisable from their 1960s blueprints, and while energy has flirted with both nuclear and renewables it remains dominated by fossil fuels. This is because well-established sectors are typically concentrated with a few large companies.

These behemoths, despite what their recruitment marketing may tell you, prefer incremental improvements rather than industry-destabilising innovations. These companies are risk-averse – they have shareholders to please and investing in innovation carries risk, particularly in abstract and uncertain areas.

Economics borrows its mathematical foundations from thermodynamics and so a simple thermodynam-



The economy needs to be driven by innovators // Creative Commons

ic analogy should serve to illustrate how this lack of innovation is leading to staleness:

“Beyond computers, there is no longer a revolutionary mentality towards technology”

In thermodynamics, where you have temperature differences, heat will flow from the hotter object to the colder object until they reach equilibrium. To apply this to economics, we can simply refer to technology differences; hot companies are technologically-advanced

whereas cold companies are lagging. Heat transfer occurs as the colder company imitates away all the hotter company's technological breakthroughs until we reach equilibrium.

The end state in thermodynamics is called the heat death of the universe, when the whole universe is at the same temperature and there is no free energy to be exploited. Similarly, under this analogy, an economic heat death would be a state of perfect competition, a market made up of undifferentiated companies with undifferentiated products competing on price.

Profits in a perfectly competitive market are minimal: airlines on average made a profit of \$0.37 per \$178 ticket in 2012. With such low profits, there is little money to reinvest into the company. Funding gets cut for research and

development projects, while improvements to services and facilities start getting cut too. To make higher profits and avoid economic sterility, you must dominate an industry.

There are two ways to dominate a market through innovation. The first is a Google: produce a product magnitudes better than your rivals as Google did with their search engine. The second is an Amazon: create an entirely new market, as Amazon did with online retail. What both have in common is disruption; while not essential, it is perhaps a reason why innovation has been limited to internet-based start-ups. Once on top though and in a dominant position, it becomes even more important to keep on innovating, otherwise all your advances will be imitated away.

Industries such as

management consulting and investment banking offer great value in well-oiled economies but they rely on technological breakthroughs for their survival. In the absence of advances, they are merely catalysts to this state of equilibrium, this economic heat death. Consultancies often work to restructure a company, streamlining it to reduce costs, make savings, and unlock profits. There is however a finite limit to this process and gains

“For long-term prosperity we need innovators, creators, and entrepreneurs – people with a revolutionary mentality”

become increasingly marginal without technological innovation.

Investment bankers make money off bets, predicting when a company is under- or over-valued. In this eventual state of perfect competition, all companies are undifferentiated and correctly valued, meaning there is no more money to be made. To start unlocking money again, there needs to be technological breakthroughs that destabilise an industry.

Though it may be tempting in times of

economic struggle to focus on short-term livelihoods by securing positions in these or other long-established industries, it does not guarantee long-term prosperity. For that we need innovators, creators and entrepreneurs, people with a revolutionary mentality, those that see the future as being created, not imagined. This is certainly a riskier pathway as you must forge it on your own – recreating what someone else has already done will earn you nothing. With risk, however, comes reward and those that are successful are often more handsomely rewarded for their boldness.

Today's face of innovation is arguably Elon Musk: his companies include Tesla, SpaceX, SolarCity, The Boring Company, Neuralink, Hyperloop, and more. Though his cult following may present him as divinely blessed, the success of these companies is instead enabled by thousands of innovators. If there is something to be learnt from Elon Musk, it is that his vast number of projects are evidence that opportunities to innovate still exist.

If we are to reinject dynamism into our economy, then we need to be bold and start taking risks in our career choices. At Imperial we have great scientific foundations and exposure to cutting-edge technology, putting us in prime position to be the innovators and the entrepreneurs of the future. So, let's be bold and let's be ambitious!

COMMENT

comment.felix@imperial.ac.uk



Why faith schools are just grammar schools by another name

The government has committed to remove the cap on selecting students by faith, so faith schools are poised to make a comeback, but they have the same problems as grammar schools.

COMMENT

Charles Titmuss

Comment Editor

Faith schools are about to become a major topic of conversation in UK politics. The new education secretary, Damian Hinds, has committed to remove the 50% cap on the number of students belonging to a certain religious denomination at a school. It is thought that this would benefit primarily Catholic schools, due to elements of Canon law that prevent Catholic schools from turning potential Catholic students away. Therefore, there have been no further openings of any other Catholic schools in protest at this law. A Department of Education spokesman stated that the reason the cap should be scrapped is due to the fact that Catholic and CofE schools consistently perform at a higher level than other schools. It is worth pointing out that the same cannot be said for Muslim and some Jewish schools of which there have been new openings since the 50% cap was introduced 10 years ago...

In opposition to this proposal are the previous education secretary and Ofsted, who have stated that by allowing schools to select 100% of their intake by faith it will not only deny parents access to good local schools, but will also lead to increasing segregation that has been nicknamed “education apartheid.”

Personally, as an atheist,



Books are educational// Wikimedia

I am totally opposed to faith schools in general, as I do not believe that faith should play any part in the running of a state. Faith, in my opinion, should be a deeply personal thing that you do not project onto others and therefore is not present in the running of schools or the selection of pupils for schools. That does not mean to say that I rule out encountering religion in a school environment – in fact, I positively encourage it – but it should be taught in such a way as to be totally impartial and discuss the social moral and ethical implications of each religion separately.

If I was being radical,

then a further proposition I would make would be to prevent children from practicing religion until they are old enough to adequately understand it. I believe that certain variants of faith foster an unhealthy and backward view of the world that is not productive in today’s society. If Theresa May is serious about ensuring that British values are at the core of the curriculum then she will have to address the fact that many variants of faith today do not embrace these values. Therefore it seems counterproductive on her’s and the government’s part to take this step, but this probably stems

from a lack of clear ideas on exactly what British values are and what they stand for, due to the divisive nature of the idea of British values.

I imagine instead that the main reasons for the push towards faith schools is purely due to the pushback on grammar schools. Theresa May went into government with the grand plan to expand grammar schools throughout the nation, because she believes that they encourage social mobility despite all evidence to the contrary. However, the implications of encouraging grammar schools have solely resulted in a large scale failure to better

provide social mobility or higher quality education for people in the area, often resulting in extra provision in areas that did not require it, leaving the state of chronic under-provision in other areas unresolved. It also did not help that there was significant stigma attached to grammar schools from when the decision was made to abolish them, which made the proposal more unpopular.

I believe that the motivation that Theresa

“The push towards faith schools is due to the pushback against grammar schools”

May has for pioneering faith schools is under the mistaken belief that they will benefit pupils by providing a higher quality of education without acknowledging the role a highly selective intake plays in ensuring how good a school is, similar to the way a grammar school works. When she makes this assumption that a better quality of school would provide a significant amount of social mobility fails to factor in that the majority of Catholic parents are likely to have significant social advantages and thereby the cause of social mobility would not be advanced. Then

again May may not care about social mobility, and instead about catering for the needs of Conservative voters, who have pushed for these selective schools that are solely beneficial to them.

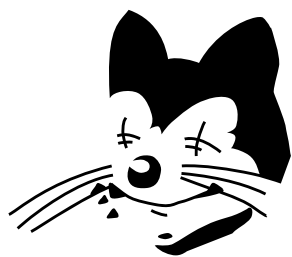
It may also be the case that this is being carried out in order to appease certain more conservative members of her party, such as Jacob Rees-Mogg, who has spoken out against the 50% limit. In light of the current difficulties with Brexit, it may be seen as a sop to those members of her party dissatisfied with the current negotiations, appeasing them with more safely right wing policies.

The idea of education as the battleground makes sense from an election point of view, as it will strengthen May’s appeal to her Conservative base and those most affected by it will be least likely to vote. It also allows for the creation of a quasi-grammar school system without the massive opposition, as there is significantly less opposition to faith schools, which are accepted as a key element in the British landscape. The opposition is likely to come from less popular people such as intellectuals, humanists, and atheists such as myself, and with everyone concentrating on Brexit and an ineffectual opposition it is likely that this policy will go through relatively unchallenged.

It is only by resisting policies such as this that social mobility can be achieved. Otherwise this is the perfect crime against the children of the future.

COMMENT

comment.felix@imperial.ac.uk



Why Macedonia is relevant again

Grumpy Bastard turns his sights to the history of Macedonia. Yes, you heard right: Macedonia. Don't ask, just enjoy it.

COMMENT

Grumpy Bastard

Comment Writer

Macedonia as a country has a very proud and ancient history. Originally the home of the Mycenaean Greeks, after their demise, Philip of Macedon arose to kick the shit out of Athens and Sparta and then bequeathed his army to his son. Better known as Alexander the Great, he was then able to beat the living hell out of Darius of Persia. This was unfortunately over 2000 years ago, and Macedonia has quietly sat on the sidelines of history ever since. Now, of course, the time for Macedonia to make its triumphant return has arrived!

The reason for this return to glory is simple. Yes, Greece is now united

and the *sarissa* is no longer a revolutionary invention capable of winning battles against any equivalent power. It is no longer the time for a group of noble companions to gallop across the plains of the Middle East and trample all in their path. For a country that isn't allowed to use

"Fake news means true power now lies with Goran, the fake news editor in the city of Veles"

just Macedonia due to an ongoing dispute with the dead economic power of Greece, the Macedonians – or more accurately the

residents of the former Yugoslav Republic of Macedonia – have discovered a revolutionary new weapon and a new people to conquer. The weapon is of course fake news and the victims are gullible members of democracy's everywhere.

Yes, the Macedonians are now the world famous purveyors of articles designed to fool readers into believing a different reality that more closely conforms to their beliefs. Forget *Black Mirror's* crazy technology and Kremlin stooges attempting to hack the American election, in today's day and age it is important to remember where the true power in the world lies: with Goran the fake news editor in the small city of Veles. Want someone to believe in a paedophile ring centred around a pizza restaurant? Goran's your man! As long as you're prepared to pay

good money, teenagers with an internet connection will happily write a reality that more closely resembles your beliefs that you can share with your easily manipulated and gullible friends and family.

It really is remarkable that a people trodden down so far after generations of a communist dictator's rule have bounced back to truly understand

what democracy is really all about: lying, but lying convincingly.

The thing I am possibly most impressed by is the fact that they really get what people want to believe down to a tee. I mean there are some great satirical news sites such as *Southend News Network* (Milos Yiannopoulos' favourite) but I don't feel they reach a wide enough audience to qualify as

truly influential. Macedonia though, managed to make amazing things happen, such as getting people to believe that Donald Trump would make a good president or that banning people from Islamic countries would have a significant impact on terrorism. What a nation!

Glorious, relevant Macedonia!



A true symbol of power in the modern world //wikimedia

New Year, New News!

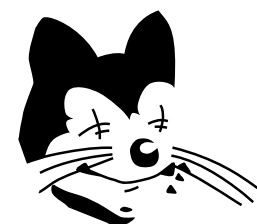
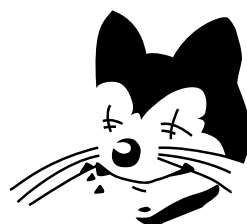
Felix are setting up a weekly newsletter, delivered straight to your inbox. Get all the best news, culture and sports every week.

Get the cat on the go!



Felix

WEEKLY



SCIENCE

science.felix@imperial.ac.uk

Can writing a to-do list really make you fall asleep faster?

Insomnia is a big problem for many, but new research suggests that by writing down what we've got to do, we can get better quality sleep.

SCIENCE

Sarah Wong
Science Writer

Everybody has one of those nights where you stare at the ceiling in the dark, thinking about the books that you have to return by Friday, the present that you have to get grandpa for his birthday next week... the list goes on and on – and you just cannot sleep!

If you can relate, this article may hold the solution.

Insomnia is a common problem in the modern world. Whilst mental health issues or light exposure from our phones may impact how fast we can fall asleep, one common cause of poor sleep is the worry posed by upcoming tasks in the future.

These unfinished tasks are shown to have a high level of cognitive activation, such that thoughts can pop up automatically at various times during the day.

To combat this phenomenon, it was shown that bedtime writing may help you to fall asleep faster. In cognitive behavioural therapy (CBT) for insomnia, therapists will often ask patients to write a 'worry list' to unburden anxieties. However, it was unclear what exactly you should write about in order to help you sleep.

To answer that question, scientists from Baylor University in Texas recruited 57 healthy volunteers for a one-week sleep study. Half of the

group were asked to write down a list of tasks they had completed in the past few days, while the other half were asked to scribe a to-do list for errands that they have to run in the next few days.

Both writing activities required five minutes before bed, and the time needed to fall asleep was measured using overnight polysomnography – a machine that measures brain activity.

Surprisingly, though many would suspect writing a to-do list prior to sleeping would cause more worry, as you would be reminded of all the things you need to do in the coming week, the reverse is true! Participants who wrote down a to-do list fell asleep faster

“Unfinished tasks are shown to have a high level of cognitive activation, such that thoughts pop up automatically”

than those who made a 'have-done' list.

The explanation behind this effect is still debatable. The most compelling hypothesis suggests this activity allows you to offload worries, therefore reducing the amount of time needed to fall

asleep. Completed tasks in the past are not worrisome, hence do not need 'off-loading', so writing a list has no impact.

The quantity of writing is also important, as volunteers who completed a longer to-do list fell asleep faster than those who had a shorter to-do list. Contrarily, people who wrote a detailed account of their past activities needed more time to fall asleep. This can be explained by various reasons. One explanation is that

“Making lists allows you to offload worries, therefore reducing the amount of time needed to fall asleep”

busier people may have a longer completed-task list, and may find it more difficult to sleep as they have higher stress level. A second explanation suggests that thinking of past events can lead to the activation of thought processes for future events. For instance, if you think of the PowerPoint you made yesterday, it may prompt you to think about the presentation for next week, therefore triggering more worries.

Though this potentially

opens a new door to a free and easily administered sleep, larger studies are needed to conclude whether this could help people with insomnia or mental health issues. Nevertheless, next time you are unable to fall asleep, rather than writing your diary, get a pen and start writing a to-do list instead!

DOI: [10.1037/xge0000374](https://doi.org/10.1037/xge0000374)



STUDENT ACADEMIC CHOICE AWARDS

LET'S REWARD EXCELLENCE IN ACADEMIC & SUPPORT STAFF

Nominate staff members in the following categories:

- ▲ Best Tutoring
- ▲ Best Teaching for Undergraduates
- ▲ Best Graduate Teaching Assistant
- ▲ Best Feedback
- ▲ Best Support Staff
- ▲ Best Teaching for Postgraduates
- ▲ Best Supervision
- ▲ Best Innovation

Every nominee gets a coveted SACAs mug!

Nominations close 11 February 2018. Go to: imperialcollegeunion.org/sacas

imperialcollegeunion.org



Say it with DNA – how our genetic code could hold the key to our data storage problems

We're generating more data than ever before, but where are we going to store it? Some scientists are pinning their hopes on using the building blocks of life to help solve the issue.

SCIENCE

Varshit Dusad

Science Writer

Data has been hailed as the oil of this century. Just like oil, entire industries rely on data analytics to develop consumer-centric products, which are nowadays in constant demand. Google Search, Facebook Recommendations, and pretty much everything else on the Internet has become part of new 'Data Economy'. Every single day a large mass of data is created and stored: a joint research project by Seagate, the world's leading hard drive manufacturer, and IDC analytics, predicts that the total amount of data worldwide will reach 163 Zettabytes (ZB) by the year 2025 – a tenfold

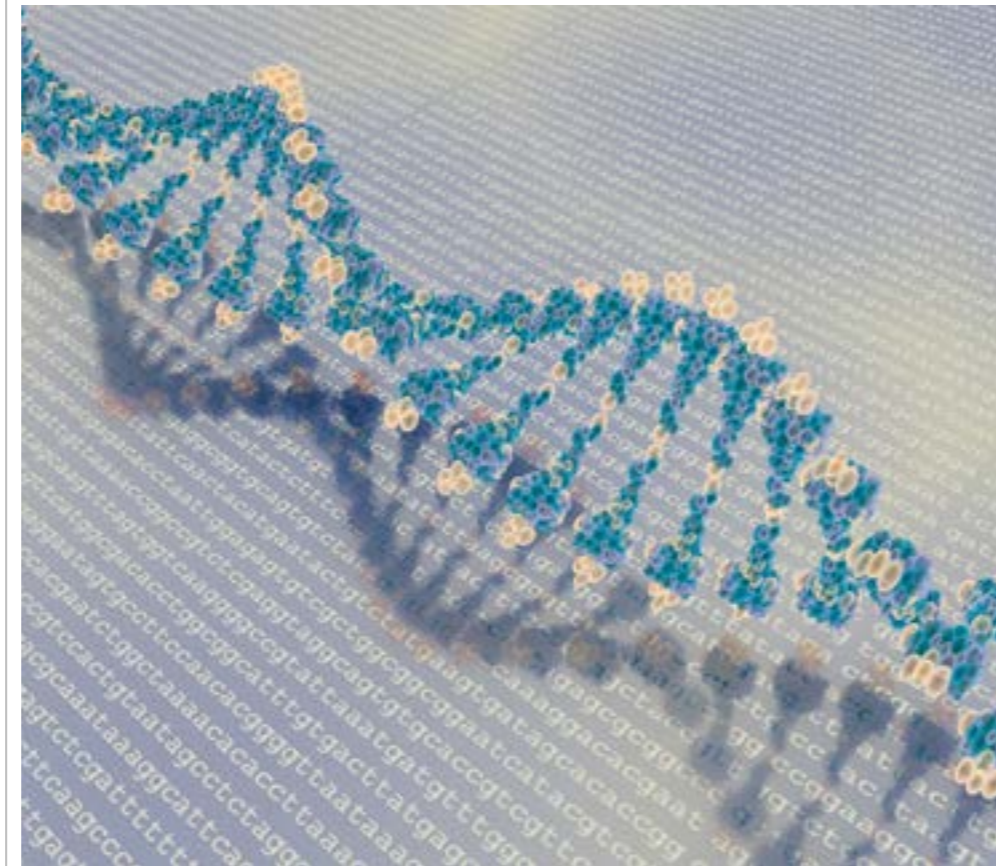
increase from the 16.1 ZB generated in 2016. To put into perspective, one ZB is equal to a trillion GB. This is an explosive rate of data generation! Much of this data is managed by few large tech giants like Google, Facebook, Amazon, and Microsoft,

“Entire industries rely on data analytics to develop consumer-centric products”

who store it inside giant data servers. But they keep running out of additional space, at least when using the conventional

measures. The solution? Recently there has been an interest in replacing magnetic tapes and silicon-based hard drives with DNA, which could be the next generation of storage.

Though you may find it surprising, using DNA for information storage is not as strange as you may think. Nature has always used DNA to encode all of life's genetic information, and the latest research has used its innate properties to store digital information. In 2012, the Church lab at Harvard University displayed the potential of DNA as storage platform by encoding a 53,426 word book, eleven JPG images, and one Javascript program using next-generation DNA synthesis and sequencing platforms. Digital information is stored as strings of binary digits (bits) holding only the values as zeroes



Three cheers for DNA // Flickr

and ones, while genetic information is stored in a sequence of four chemical bases – Adenine, Guanine, Cytosine, and Thymine. In both cases, it is the sequence and rules of interpretation which encode the information. By mapping the bits to base sequences, one can transfer digital information to its chemical equivalent. To access the information, the DNA is sequenced, and sequences of eight bases used to retrieve the digital information.

What advantages can this bring? Well, one gram of DNA can store 215 petabytes (PB). While conventional hard drives last for an average of 5 years, DNA is far more resilient – in fact, it is one of the most stable chemicals found on Earth,

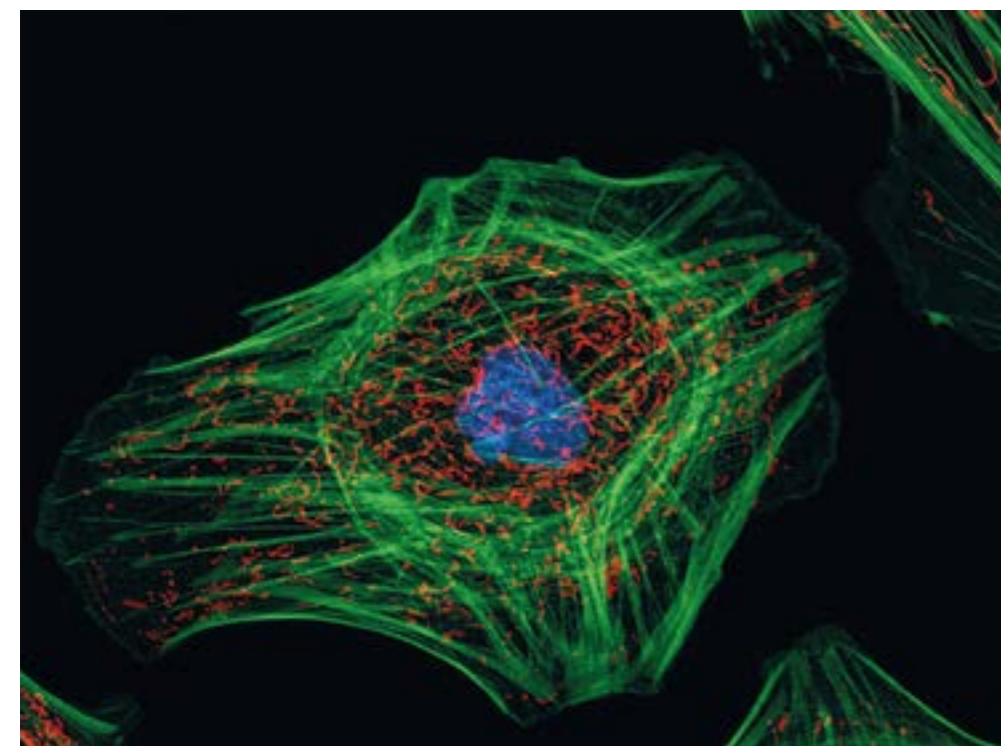
being found preserved in remains thousands of years old, despite harsh conditions. Some have even called DNA apocalypse proof! If humanity suffers a disaster, then future generations will be able to access the information stored on DNA memory sticks to recreate our civilization.

So, why is DNA storage not yet mainstream? Because both the steps of chemically synthesizing DNA and sequencing are slow processes – very slow compared to the lightning fast information storage and retrieval we are used to. Furthermore, the sequencing process is error prone, with the error increasing with increasing lengths of DNA. The other issue is that sequencing is a linear, end to end process and, without a

robust encoding scheme, it is very challenging to retrieve make data

“Why is DNA storage not mainstream? Because both synthesising and sequencing DNA are very slow sequences”

randomly accessible. For example, if you wanted to find a key passage on a book written on DNA then you will have to read



The nucleus is the powerhouse of data storage // Flickr/ZIESS Microscopy

it all and can't simply skip to the passage of interest. Smart primer design might help with this, but only works well in a minority of cases.

The challenges have not deterred Microsoft from investing. In an interview with *MIT Technology Review* last year, Microsoft unveiled their plan of developing “proto-commercial system in three years” which can be used at their data centers. Though they can't be used for quick retrieval of information, they can act as valuable back-up for archived data. In July 2016, Microsoft, in collaboration with University of Washington, stored 200 megabytes of data in DNA, including a music video. 200 MB

might appear much lower than what is desired, but the real limit is cost, and not science. According

“In July 2016, Microsoft and the University of Washington stored 200 megabytes of data in DNA, including a music video”

to the estimates by MIT Tech review, the project would have cost US\$ 800,000 were supplies

bought from the open market. To reduce cost, Microsoft partnered with Twist Bioscience, a synthetic biology start-up. Twist Bioscience, using their proprietary synthesis technology, provides rapid and cost-effective DNA on demand to Microsoft for their data compression ambition.

Though Microsoft may be the only tech giant ringing DNA-based storage's praises, academics remain excited by the possibilities. Dr. Nick Goldman at European Bioinformatics Institute is driving research to make DNA data storage reliable and competent. In 2013, a year after Church's proof of concept, he developed an improved strategy to encode digital data

into biological text. His technique had an error checking procedure to ensure that data can be both reliably encrypted as well as interpreted. Using this they were able to store 739 kB of data on DNA and retrieve it with 100% accuracy! Their encryption included all 154 of Shakespeare's sonnets, a 26-second audio clip of Martin Luther King's “I have a dream”, and the classic paper on the structure of DNA by Watson and Crick. The latest research, published last year, from the joint efforts of Columbia University and the New York Genome Center, was able to push the envelope even further by encoding an operating system, movies, and other such files

amassing to a total of 2.14 GB which they were able to retrieve perfectly. The future may well be written

“The latest findings are collapsing down the barriers between the IT revolution and the biotechnology revolution”

in DNA. Nick Goldman has even bet on it! At the

2015 World Economic Forum, he wagered a single bitcoin: The Davos Challenge, as it is called, is to decode the bitcoin encrypted in the vial of DNA distributed to the audience. The winner shall claim the hidden bitcoin if it is found before 21st of this month.

The current century witnesses two major revolutions – the information technology revolution and the biotechnology revolution. Both of them have changed the world in unimaginable ways. With these latest findings, the boundary between these distant fields is breaking down and the future is bright with remarkable possibilities.

Connect with Conservation – de-extinction dilemma

SCIENCE

Steve Allain

Science Writer

You may be aware that there are currently growing efforts to clone long-extinct animals such as mammoths, which would be sure to put a smile on John Hammond's face. There is a growing consensus in the scientific community that we should use similar technology to resurrect recently extinct animals. There are a number of criteria a species must fit into, in order to be selected as a potential candidate, including preservation of viable genetic material and the existence of suitable habitat for reintroduction. We are not talking about a mosquito

in amber here; instead, the species for which such a project could be viable are those that have become extinct within the past 100 years. There may be potential along the way to learn more about

“Current efforts to clone long-extinct animals are sure to put a smile on John Hammond's face”

developmental processes, which may help to inform future medicine. Two examples from Australia highlight the current efforts to resurrect a previously lost species.

As an Amphibian Biologist, I could not help but pick this first example – the gastric brooding frog (*Rheobatrachus* spp.). There were two closely related species that were discovered in the latter half of the 20th century, shortly before they became extinct. They acquired their name from the unusual behaviour exhibited by the females incubating their eggs: they would swallow the fertilised eggs and convert their stomach into a frog nursery, before regurgitating fully-formed froglets approximately six weeks later. During this time, the mother shuts down all function of her stomach and does not eat until her brood have developed. In 2013, scientists in Australia successfully created a living embryo from preserved genetic material, with the next goal being the production of an



One of the last photos of a living Tasmanian tiger // Wikimedia

embryo that can survive to the tadpole stage.

The second species is the Thylacine or Tasmanian tiger (*Thylacinus cynocephalus*), which was a marsupial predator hunted to extinction by mankind. They were already on a bounty when they were put on their head, but

it certainly did not help things! The Australian Museum in Sydney began a cloning project in 1999 with efforts still ongoing, using ethanol-fixed tissue from a handful of specimens. There are deep ethical questions that need to be addressed with such projects, but hope-

fully one day passenger pigeons will fill the skies once again, and species extinction will be a thing of the past. If we have the means to restore a species, especially one that disappeared due to our direct actions, surely we have an obligation to do so.

SCIENCE

science.felix@imperial.ac.uk

Organoids are *Nature's* method of the year

SCIENCE

Alisha May
Science Writer

For almost a decade, researchers have been investigating the possibility of using stem cells to form organoids: three-dimensional, multicellular assemblies that mimic the structure and function of organs. Organoid models have now been established for multiple organs, including the brain, liver, and kidney, using adult or pluripotent stem cells. More primitive tissues, for example the optic-cup, have also been established as organoids, opening up new avenues for the study of eye formation.

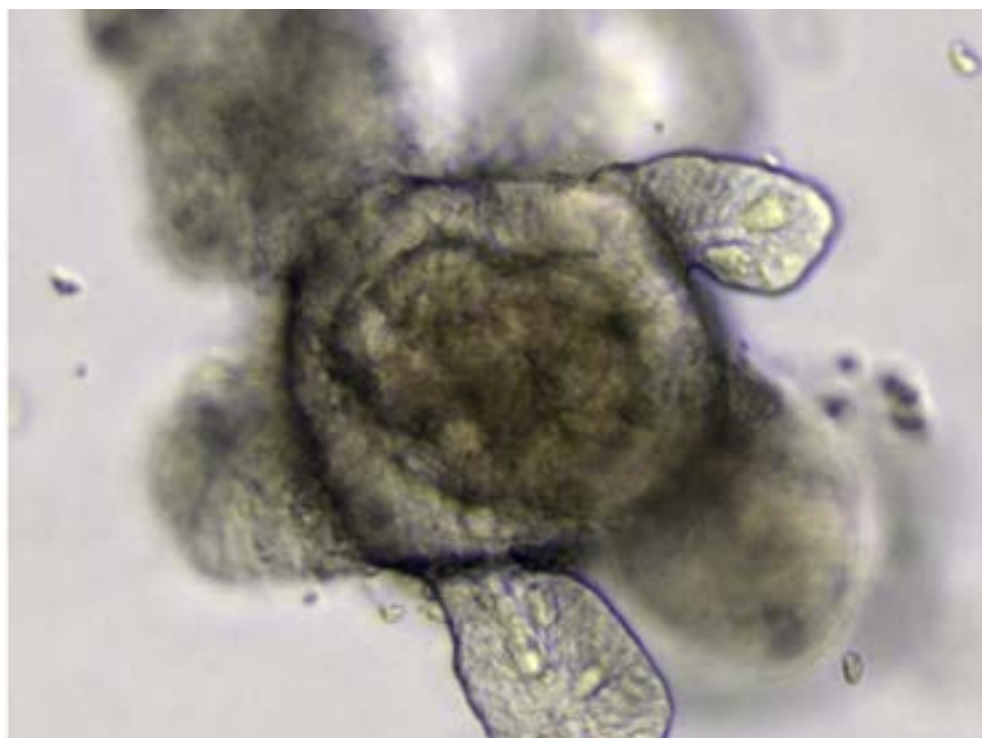
Developmental biologist Yoshiki Sasai and his group established this optic-cup organoid from a three-dimensional culture of mouse embryonic stem cell aggregates. This stem-cell derived retinal epithelium was observed to spontaneously form

epithelial vesicles, the flexible distal portion of which folded inward to form a shape resonant with the embryonic optic cup. It is an excellent example of how organoid development often strongly resembles natural embryonic development *in vivo*, giving researchers the opportunity to study developmental processes and organogenesis (the development of organs).

Some methods for generating organoids from embryonic stem cells involve providing cells with minimum differentiation information and enabling them to self-organise. Other methods provide stem cells with signalling that is known to result in the differentiation into specific cells types. Regardless of the method employed, the resulting organoids can be used to increase our understanding of human processes and development, including disease. Organoids are especially useful for the study of genetic disorders that exert their malignancy

in utero, and do not have accurate animal models. Cerebral organoids were recently used to model aspects of lissencephaly, a brain disorder in which the brain itself does not exhibit the usual folds seen in the cerebral cortex. This research identified a mitotic defect in glia, a cell type important in human cortical development.

While being an incredibly useful tool, organoids are far from the perfect models for study. A significant issue that arises from the use of *in vitro* organoids is the lack of a vasculature to sustain growth and development of organoids past foetal stages. It is not yet possible to introduce functional blood vessels into petri dish organoids, and current research is only able to link organoids to a circulatory system by transplanting them into live animals. Perhaps in the future, more complex *in vitro* organoids will arise, with researchers eventually being able to grow entire human organs.



An intestinal organoid, viewed under a microscope // Wikimedia



"Siri, find me a picture of science" // CC

Are robots the future of tissue regeneration?

SCIENCE

Caroline Wolfe
Science Writer

The applications of robots span many disciplines – far beyond what one might see on BBC's *Robot Wars*. Robots themselves have long had several applications in the medical field, but only recently have researchers demonstrated the effectiveness of their use for tissue regeneration. At Boston's Children's Hospital, researchers conducted a proof-of-concept study using a tissue-regenerating robot on the oesophagi of five pigs. The robot consists of two motorised rings and an external control unit; as it is only attached to the oesophagus, it does not affect other organs. The motorised attachments, in the form of rings sutured to both ends of the oesophagus, place traction forces on the tube via a control unit external to the body. The magnitude of traction forces can be adjusted using this programmable control unit, and the robot

pulls the oesophagus in both directions either with more or less force. A skin-like barrier surrounds the device to protect the motorised unit from various bodily fluids. It is widely known that mechanical forces and mechanotransduction in cells play an important role in tissue growth, and this robot looks to take advantage of that knowledge.

During this study, researchers increased the ring separation distance by 2.5mm each day, in all five pigs for either eight or nine days. This separation strained the oesophagus, and therefore induced mechanical forces. After the 2.5mm separation each day, the mechanical forces on the oesophagi were measured. Following ring separation, these forces immediately increased proportionally to the separation distance, and exponentially decayed in the day following separation, indicating tissue proliferation. The oesophagi lengthened with increasing ring separation distance, as the circumference and thickness of the muscular layer surrounding the oesophagi were

maintained, showing that lengthening, as opposed to stretching, was indeed occurring. On average, the pig oesophagi lengthened by 77%. This result is ground-breaking, as the right amount of force needed to be applied to tissue to promote growth is as of yet unknown.

In vivo tissue engineering is typically done using cell-seeded scaffolds, which induce cell proliferation, but may fail due to lag-time of vascularisation or the hosts immune response. Robotic implants for tissue regeneration mitigate these challenges. Due to this novel tissue-generating robot, oesophageal atresia and short bowel syndrome – two conditions that are usually birth defects which cause years of discomfort – may have found their cure. This novel application is a potential replacement for otherwise invasive, risky surgeries with long recovery periods. The team plans to next test the device on large animal models before moving on to clinical trials in the future.

MUSIC

music.felix@imperial.ac.uk

We are all still humans

Last term, Felix named Humanz as one of the most disappointing albums of the year. Not happy with that, Sabina Nowakowska tells us why Gorillaz is more than just a band, but an ideology.

MUSIC

Sabina Nowakowska
Music Writer

2017 saw a lot of big album releases and a lot of comebacks. Probably the most anticipated return (at least for me) was Gorillaz. Expectations were huge, and the hype-building skills of the Gorillaz team were proven to be beyond compare.

The anticipation had already begun to accumulate back in 2016 when Jamie Hewlett and Damon Albarn let slip in interviews that a new Gorillaz album was in the works and would, in fact, be out soon. Their famed avatars (2D, Murdoc, Russel, and Noodle) started appearing in the media, and updates on their lives were slowly unveiled, bridging the gap between phase 3 and the incoming phase 4. Everyone was getting ready for the big comeback. However, 2016 soon came to an end leaving the impatient fans with no new music from the world's favourite virtual band. It was exactly one year ago – January 19th, the day before Donald Trump's inauguration - when we finally heard the first Gorillaz song since 2012, 'Hallelujah Money', featuring one of the most promising and original new artists around – Benjamin Clementine. Murdoc and his crew started creeping into the collective consciousness, using all possible platforms of expression. From posts on social media, interviews, Spotify playlists through videos and smartphone app to murals, posters and secret

gigs. They had everything covered.

As always, the team behind Gorillaz pushed technological limits to bring their ideas to life. This time around, apart from cool animations and even a 360° video, they also created a portable, eco-friendly recording studio and produced an augmented reality app The Lenz which showed Gorillaz-related content whenever you pointed your smartphone camera at something magenta. What's more, 2D and Murdoc even gave their first ever real time animated interview, blurring the boundaries reality and fiction. In the world where avatars are given so much importance and cartoon characters are not only present in the show business, but become influential

“They're a brand, an industry, a one of a kind popcultural phenomenon.”

politicians – Noodle, 2D, Murdoc and Russel seem more real and relevant than ever before.

Gorillaz have always been more than just music – they're a brand, an industry, a one of a kind popcultural phenomenon. But let's talk about the album itself. On the 28 April 2017, the wait was finally over and *HUMANZ* dropped. While some fans immediately loved it, others were a bit disappointed (see *Felix*



It's the moments we relive, it's the moments like this // Sabina Nowakowska

issue 1678). I would not call it a masterpiece; there were a couple of songs that didn't quite match the standard of hits like 'Clint Eastwood' or 'Dirty Harry'. Nonetheless, there were many great tracks (e.g. 'Strobelite' or 'Charger') and the album overall was received well. Accusations of having too many guests on the record and not enough Damon made by some fans are rather pointless. Gorillaz has always been a collaborative effort and the musicians involved changed over the years. Collaboration lies at the heart of *HUMANZ*. The title says it all – *HUMANZ* is about the humanity crisis we're going through. And it's not just represented in the lyrics; the album carries the message non-verbally. Juxtaposition of individual human voices and rich, warm sounds of gospel choirs, with machine generated music resulting in a good quality, cohesive album is itself a metaphor of a human race that can

find its place in the artificial world and work as one.

Despite dealing with tough issues, *HUMANZ* ends with a positive message. You may say that finishing the record with words "We got the power to be loving each other no matter what happens" is rather infantile. I agree. We've heard slogans about coming together

“We've heard slogans about coming together and sharing one love a million times by now, but when Gorillaz say it, I actually believe them”

and sharing one love a million times by now. But when Gorillaz say it, I actually believe them, because they support their statements with action. It is the most apparent in their live performances. Seeing this diverse group of people coming from various musical backgrounds, young and old, black and white, famous and unknown, rappers and singers putting on a fantastic show at the O2 Arena on 5th December 2017 was truly uplifting.

The gig was wonderful. The band, smiling at each other, dancing, spontaneously hugging and simply having lots of fun on stage, proved that the coexistence is possible and even enjoyable! The long setlist included old hits ('Feel Good Inc.'), new bangers ('Andromeda'), great renditions of slightly forgotten tracks ('Every planet we reach is dead') and homages to iconic artists who are no longer with us ('Stylo'). With two drumkits, all

sorts of electronics and a multitude of other musicians on stage, the sounds were extremely powerful and kept the crowd going for over two hours.

The show culminated with the beautiful 'Demon Days' from their 2007 classic, leaving the audience with a big red sphere on the screen and the choir repeatedly chanting "To the Sun!". The song is still relevant after a decade. It gives hope and acknowledges that to cope with hard times, it is important (but difficult) to stay optimistic: "In these demon days it's so cold inside / So hard for a good soul to survive / (...) Pick yourself up it's a brand new day / so turn yourself round / Don't burn yourself, turn yourself / Turn yourself around into the Sun".

With that in mind we can enter 2018 hoping for some good changes in our lives and in the world around us. But above all waiting for the rumoured next Gorillaz album!

MUSIC

music.felix@imperial.ac.uk

What's the Story? (Brotherly Furore?)

Nine years after Oasis' acrimonious split, the Gallagher brothers are still at it, desperately clamouring to be the better sibling. With a new solo album out from each, Ziyang Fang gives his verdict on who came out on top.

MUSIC

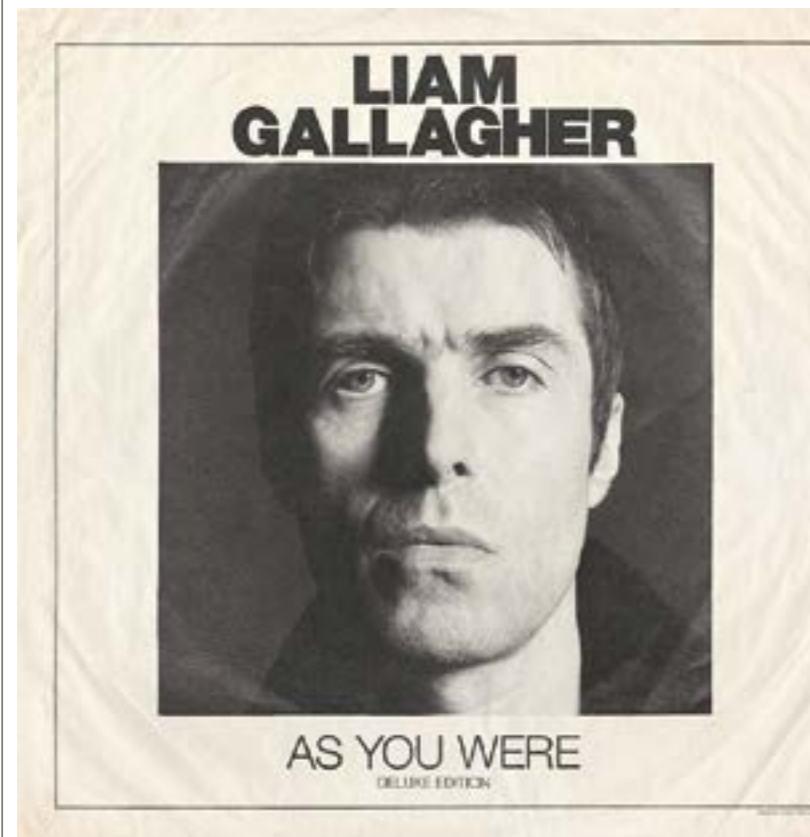
Ziyang Fang
Music Writer

As the solo album. The bastard child of the ageing artist. The vanity project marketed at the die-hard fans who couldn't deal with the terrible truth that their favourite band broke up nearly a decade ago, now reduced to eating the crumbs that fell off the table. "Critics be damned", they agonise, "this album showcases their raw, untainted, talent and personality". DENIAL. Desperately, they cling onto the notion that had they had the courage to risk an affair with the capricious mistress of Fame and Fortune, it could've been them. Alas. Their only recourse now is to fork out £10 a month to Spotify and Apple Music to support the artist in their cocaine and caviar habits. That or deal with the crushing mediocrity that is *life itself*.

But what do I know, maybe I'm just bitter that everyone else's favourite bands (Gorillaz, The Killers, The Strokes, U2) had a new release last year. Yet, the only thing Arctic Monkeys fans got was a disappointing meteorological event sharing a name with the track 'Brianstorm'.

But look at me dancing around the issue. Dancy, dancy, dancy, la di da. ALRIGHT, LET'S GET TO THE POINT. Are the new albums by the Gallagher brothers good? YES. MAYBE. Are they better than Oasis? NO.

What you have to understand is that for any



Yeah man so I want it to look like it's made of paper, but without actually making it out of paper, that'd be pretty fucking sick. // Warner Bros., Sour Mash

album to be comparable with Oasis, it has to be inventive both lyrically and melodically. Not enough on the lyrical front, like Noel's *Who Built the Moon*, and you're left feeling you've wasted time on the 'artsy artsy', like an evening out listen-

"Liam Gallagher may have as much of way with words as a grizzly bear on ice has a talent for ballet, but I suppose that's part of his charm."

ing to prog-rock backed Poetry Slam. Not enough on the melodic front, like Liam's *As You Were*, and it feels like you're being fed a stream of half-cooked metaphors-cum-advice until the point you'd like to ram a sharp implement through your own head. (Do not try this at home). Songs like 'Wonderwall', for the lack of a better phrase, *do wonder* simply because they so readily convey the type of middle-class comfort and inarticulacy that culminates in phrases like "...all the road we have to walk are winding". A banal platitude, sure, but a banal platitude that in the lens of Oasis sounds like genuine life advice.

I am, of course, aware that there may be Oasis fans reading this review right now. And to be completely honest, it's not all that fair for me to tear apart any emotional attachment

anyone has constructed around the phenomenon of Britpop. I should know better; I spent my formative years listening to Nirvana and Janis Joplin trying to dig my way out of the awkward years of schoolboy adolescence. Much of music criticism IS subjective, and I would be lying if I said that I don't derive as much joy as I do from hating Taylor Swift if I weren't satisfying myself on the fact that I am attacking the people who didn't share the same experience growing up as I did. (The bloody wankers never seem to have needed to deal with puberty and the immense self-doubt that came with it.) The truth is, Oasis wrote their own music, and that, by definition, puts them above 70% of pop music today. Liam Gallagher may have as much of way with words as a grizzly

"It has all the comforts of a Bruce Willis movie. You go to it when you need to turn your brain off."

bear on ice has a talent for ballet, but I suppose that's part of his charm. The same can be said of Noel, whose 'Holy Mountain' reminds me pleasantly of Franz Ferdinand and their psychedelic pussyfooting in asking a girl on a date. Is it a material for Nobel Prize for Literature? Perhaps not, but it has all the comforts of a Bruce Willis movie. You go to it when you need to turn your brain off.

Nonetheless, if you're



MUSIC

music.felix@imperial.ac.uk

The rowdiest gig the beacon theatre ever hosted

MUSIC

STREETLIGHT MANIFESTO
AND THE BANDITS OF THE
ACOUSTIC REVOLUTION
ORCHESTRA



Support Artist: None.
Venue: Beacon Theatre,
NYC. Date: 13th January
2018. Ticket Price: \$40.

Henry Eshbaugh
Music Editor

Streetlight is a band that's impossible to categorise. I've heard ska-punk, world, prog jazz, hardcore folk, and a dozen other descriptors chucked their way, none sticking in any sense of the word (best I've seen is "mariachi band from hell").

But if there's one word descriptor agreeable to the rowdy-devoted-vibrant community that's grown around this marvellous band, it's *formative*. I divide my experience as a music listener into two epochs: the pre-Streetlight and the post-Streetlight. Falling into the band is a life-altering experience like falling into a black hole might stretch you out a bit. Lead singer Tomas Kalnoky released covers of their songs as acoustic ballads; I find them so deeply moving that I've played nylon-string acoustic guitar for the last five years, trying my damndest to sound like him - someday I'll be good - . My first mosh pits were at Streetlight shows - and nobody moshes better than those crazy motherfuckers - . The fundamentals of my very taste in music were decided one fateful day when a much younger I stumbled across them by chance. Dallas. Cleveland. Burlington. The three thousand in attendance (the show sold out) must



Also Dan Potthast, who can be seen looking over Tomas Kalnoky's shoulder in the above. Who's not in BOTAR? // Sonya Alfano (IG: sci.burr)

have, altogether, traveled a hundred thousand miles to see this show. This isn't unusual. When I saw Kalnoky solo in London, a steady crowd of individuals bearing Streetlight tattoos regaled their stories of flying to the US to catch them on tour. Here in NYC, I heard stories of concerts in Portland, LA, Orlando — all fantastic, all moving, all beautiful. It's said that the Mountain Goats have a passionate following; funny, then, the crossover fanbase. After the house lights

"Streetlight Manifesto - the mariachi band from hell"

dropped, the band commenced with an anthemic throwback to the original BOTAR EP, which turns 17 this year: "This is a Call to Arms/Here's to Life" a song with a crowd-vocal intro leapt into by the entire three-thousand-strong audience in a wonderful expression of the camaraderie felt by followers of the band. The

forty-piece orchestra was not there for show; they wasted no time leaping into audaciously-layered rhythms and exotically-flavored harmony, wonderously syncopated and perfectly complementing the ska-punk nucleus performing at the front of the stage. The crowd was exuberant; they wasted precisely no time before expressing their loves with throaty shouts of adoration for the band.

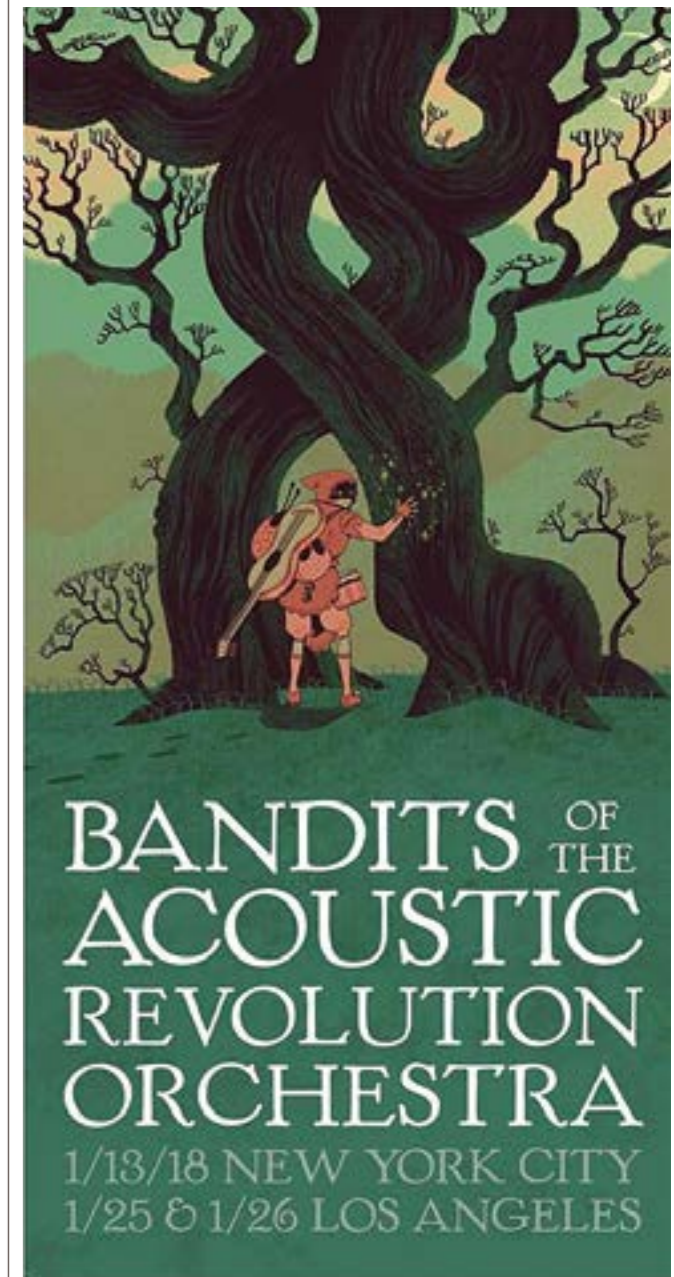
The setlist meandered from folk ballads evoking rustic frustration at a government in its waning days (underscored by the anti-capitalism of the fanbase) to skanking bangers presented in orchestral glory ("A Moment of Silence," disintegrating into the flatout-punk "A Moment of Violence"). There were quick and animated songs with flourishing fanfares (see "We Will Fall Together") and fleeting, tender slow bits ("It's a Wonderful Life," and slow by Streetlight standards). The end of the (non-encore) setlist was an amalgamation of pure energy: "What a Wicked Gang are We", "If and When We Rise Again", and the pathos-rich "Re-

ceiving End of it All". Tomas told us not to sit down for the last one, but it's not like anyone was anyways at that point.

A jaw-dropping addition to the band was a piano soloist, Guy Mintus - and now forever known in Streetlight mythos as "Mr Piano Guy," as per Kalnoky's comment - . Mintus, a virtuoso concert pianist, would perform brilliant reworkings of each song preceding the orchestra, and dazzled all present with his sheer musicianship involved. A few screams pleaded with Streetlight to make Mr Piano Guy an ordinary member of the band - and for the record, he'd fit right in - .

Time and time again, Streetlight Manifesto brings unparalleled energy to the stage, electrifying the audience and galvanizing them to the band. There's a reason they have such a loyal following: to this day, Streetlight manages to demonstrate that they are in a league of their own.

One last thing: rumor on the street is that a UK tour is in the works. See you there, chumps.



Now that's a handsome gig poster. // Artist: Sara Kipin

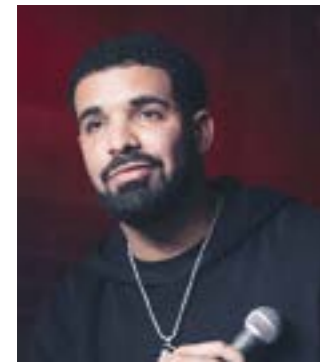
MUSIC

music.felix@imperial.ac.uk

Andy's most anticipated hip-hop albums of 2018

With TDE's bench ready to drop and a possible new Queen of rap, here's what we're looking forward to in 2018

MUSIC

Andy Djaba
Music Editor10
Drake

Wikimedia

Drake ended 'Do Not Disturb', the final track of *More Life*, his 2017 'playlist', by promising fans: "I'll be back in 2018 to give you the summary *More Life*". 2017 may be remembered as the year that Drake finally relinquished his stranglehold over hip-hop. It was the year that he saw his phenomenal eight-year Billboard Hot 100 Streak finally come to an end - prior to August 2017, Drake had had a song in the charts every week since May 2009 - . The lukewarm reception to *More Life* suggests that Drake's days of dominating the charts are behind him, and it is becoming apparent that Drake is slowly passing his peak. This could perhaps explain this period of unusual silence from him - since featuring on Metro Boomin's 'No Complaints' in June, Drake has only appeared on one song - . Drake's next album is, therefore, all the more important; will he be able to drop a classic to reclaim the throne of hip-hop and cast his legacy beyond doubt?

9
Isaiah Rashad

TDE ran 2017 with both the best hip-hop and R&B albums of the year (Kendrick Lamar's *DAMN.* and SZA's *CTRL*, respectively). Naturally, I'm excited to see what all the artists from the label have in store for us in 2018 but I'm particularly excited to hear from Isaiah Rashad whose debut album, *The Sun's Tirade*, was one of my favourite albums from 2016.

8
Jay Rock

Continuing the TDE trend, the label's stalwart artist, Jay Rock, has been relatively quiet since his impressive 2015 album, *90059*. He has been teasing the follow up album and recently dropped the Kendrick Lamar and Future-assisted lead single, 'King's Dead'. Jay Rock

"TDE ran 2017 with the hip-hop and R&B albums of the year - Kendrick Lamar's DAMN. and SZA's CTRL"

is criminally underrated but, after revealing in an interview with REAL 92.3 LA that the upcoming LP will be released through both TDE and Interscope, the additional major label backing may prove to propel this album and give Jay Rock the respect he deserves.

7
Travis Scott
Astroworld

Through his intense live shows - the night show is truly a one of a kind experience -, Travis Scott has garnered a crazed fan base and, despite teasing these fans for over a year, it appears that we are no closer to any official announcements regarding the release of his third album, *Astroworld*. In December, he surprised fans with his long-awaited collaborative album with Quavo, *Huncho Jack, Jack Huncho*. However it was disappointing and surprisingly lacked chemistry. Travis is still one of the most creative and influential artists in the culture so I can't wait to hear what he does with his upcoming solo material.

6
A\$AP Rocky

Although he appeared on multiple features in 2017, including A\$AP Mob's collaboration *Cozy Tapes, Vol. 2: Too Cozy*, the lack of solo material from A\$AP Rocky, the leader of the Mob, is bordering on the ridiculous now. He has left fans completely in the dark,

"The lack of solo material from A\$AP Rocky, the leader of the Mob, is bordering on ridiculous"

with little more than the promise of 'experimental sounds' and a few Instagram snippets from the album to go by. For A\$AP, music has seemingly taken a backseat to his other interests high-fashion and acting. It will be interesting to hear if he can reach the heights of his stellar previous albums.

5
Post Malone
Beerbongs & Bentleys

Post Malone's debut album, *Stoney*, which was released in December 2016, unfortunately flew under the radar. This was perhaps due to a lack of promotion or the fact that it dropped on the same day as J.Cole's *4 Your Eyez Only*. With 'rockstar', his 21 Savage assisted tune, dominating the charts and breaking the record for the longest time spent at number one on Spotify, *Post* has disproved all the haters that were convinced he would be a one-hit wonder after his breakout single 'White Iverson'. His eclectic style is apparent throughout all his projects; I'm excited to hear how he crafts this upcoming release.



Bleacher Report

4
Chance The Rapper

Chance The Rapper dominated 2016 and has since held the position of hip-hop's golden child. He deservedly won three awards at the 2017 Grammys and he could seemingly do no wrong. However, the murmurs of discontent have been bubbling under the surface in the culture and Chance has found himself having to deny rumours of being an 'industry plant' and defend his claims of being independent. Chance has the potential to grab the hip-hop throne therefore it makes his follow up to *Coloring Book* even more crucial.

"Chance has found himself having to deny rumours of being an 'industry plant' and defend his claims of being independent"

3
Kanye West
Turbo Grafx 16

We still haven't heard from Kanye West since the cancellation of the remainder of his Saint Pablo tour and his well-documented mental breakdown, following his wife, Kim Kardashian's, traumatic robbery

"Fans can at least look forward to an explosive response to Jay Z, with whom Kanye has an ongoing feud..."

at gunpoint in Paris. However, Kanye's legacy affords him the luxury of always making the list of most anticipated hip-hop albums for any given year. Kanye first announced *Turbo Grafx 16* in one of his infamous Twitter rants, shortly after his last release, *The Life of Pablo* in February 2016. Almost two years later, and there has still been no indication of what this album will sound like or what we should expect. Fans can at least look forward to an explosive response to Jay Z, with whom Kanye has an ongoing feud and who mentioned him on 'Kill Jay Z', the intro track from 4:44.

MUSIC

music.felix@imperial.ac.uk

2
Nicki Minaj

Nicki Minaj is at a pivotal point in her career. Outside of her core fans (or 'Barbz'), the wider hip-hop community seems to have had enough of her dominance in rap. She hasn't dropped an album since 2014's *The Pinkprint* and Remy Ma successfully won their beef in February. Nicki's lacklustre response to Remy left her position as the Queen of rap looking extremely fragile. Despite killing several features this year ('MotorSport' and 'Rake It Up' come to mind), Nicki's solo efforts have completely missed the mark. Fans are tired of hearing her repeat her favourite bar, "these bitches is my sons", and even drawing for the Drake plus Lil Wayne combo feature (or the Young Money care package) couldn't stop her single, 'No Frauds', from flopping. The meteoric rise of Cardi B's rap career in the last year is further cause for Nicki to be concerned. In order for her to cement her position as the Queen of rap, it is imperative that Nicki delivers with this upcoming album.



Hollywood Life

1
Cardi B

In two years, Cardi B has transitioned from stripper to reality TV star to the first female rapper to claim the top spot on the Hot 100 chart since Lauryn Hill in 1998. Cardi has taken the music industry by storm and her hilarious social media antics have endeared her to fans across the world. The success of her breakout single, 'Bodak Yellow', naturally led to the inevitable question of whether she would be able to follow it up. She answered this question by becoming the first female rapper to simultaneously land her first three entries in the top ten of the Hot 100 ('Bodak Yellow', 'MotorSport' and 'No Limit'). Cardi first announced that her debut album would be released last October but, with her buzz still growing at feverish pace, she took the wise decision to delay its release. 2018 is the time for Cardi to drop her major label debut album. I'm intrigued to hear what a Cardi B album sounds like and to see how she handles the pressure and weight of expectation on her shoulders. Due to

"The success of breakout single, 'Bodak Yellow', led to the inevitable question of whether she would be able to follow it up"

the unfortunate reality of misogyny in hip-hop, Cardi B's music has been directly compared to Nicki Minaj's and the industry has effectively manufactured a feud between these women. Although this Cardi album will be a clear indication of whether she can succeed Nicki as the resident Queen of hip-hop, it is important for hip-hop fans and general lovers of the culture to remember that these artists should be celebrated in their own right. Despite the fact that the supposed female rap beef is entertaining and adds drama to the situation, pitting these artists against each other is something we should condemn as society.

Pandering to the collective

MUSIC

A DAY WITH THE
HOMIES

Artist: Panda Bear. Label: Domino. Top Tracks: Flight; Sunset. For Fans Of: Animal Collective; Flaming Lips; Deerhunter; 29 minutes

Suraj G
Music Writer

Panda Bear, born Noah Lennox, has become a prevalent figure within the indie music community. A purveyor of genres, Lennox and his artistic counterpart Avey Tare (Michael Portner) have created some of the wildest and most original compositions from the mysterious space they seem to occupy in the music world. Animal Collective's work, before and including *Merriweather Post Pavilion*, have been heralded as masterful works of experimental pop and folk music.

But somewhere somehow, Lennox's solo work started to overshadow Animal Collective's output. Well, not somehow. *Person Pitch* was released in 2007. The single greatest Animal Collective record was a hazy, anti-social and weird Panda Bear solo LP. Like *Loveless* is to shoegaze, *Person Pitch*, undeniably Lennox's magnum opus, would later become the defining psych-pop record of the 21st Century thus far.

Lennox continued by putting out two good, verging on great, albums. Then, out of absolutely nowhere, he dropped *A Day with The Homies*, a 29-minute EP, just a week ago today. With this, and a sudden increase in social media activity, Lennox is



Too small to read? Good job it's vinyl only // Domino

essentially drafting up buzz, for what might be his 5th solo LP.

With that in mind, *Homies* could possibly be a bunch of outtakes from the forthcoming album, or perhaps not. Regardless, the tracks hold up on their own. While generally disconnected thematically, sonically everything blends into one, as is trademark of an Animal Collective member.

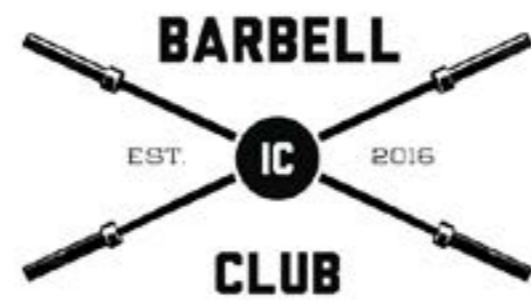
Every track sways back and forth, warped and wrapped by sounds from nature and bizarre sonic textures. Lennox's best Brian Wilson impression comes through again, like ever, transforming the obfuscated hazy production into something ethereal. Choir boy vocals ran through an SP-404 delay makes for a dreamy soundscape in which you can easily lose yourself.

In my personal copy of *Person Pitch*, the inner booklet lists a bunch of artists who have directly influenced Lennox's work. It is perhaps strange that Lennox, who dabbles in all forms of psychedelic music, would be so heavily inspired by techno musicians such as Wolfgang Voigt and Deep House architect Luomo amongst many others.

Then again perhaps it isn't. The majority of Lennox's work has had a prevalent 'driving force' behind it, reminiscent of common techno beat patterns.

Homies is however, very upfront about this, with a bouncy kick drum and a buzzy bass on opener 'Flight', continuing the 'Mr. Sonic Boom' sounds off of Lennox's previous solo effort *Panda Bear Meets the Grim Reaper*. Despite all the highs of this album, dreamy soundscapes can only do so much. Structurally it is inherently deficient, in the sense that is only an EP. That said, Animal Collective have had standout EP's such as *Fall Be Kind*. Though Lennox's current shtick, the 'busy for the sake of being busy' sound, is occasionally annoying here; he still this manages to make it a more memorable experience than one of the last two Animal Collective albums.

On *Homies*, Lennox essentially gives us a taste of the upcoming album. Yet, it stands rather well on its own. Whatever Noah has been brewing over the last couple of years, I want it.



Your Union events

Friday 19 January



FiveSixEight VK ipop metric

#D00VK
NOCTURNAL

Friday 19 January | 20:00 - 02:00
Metric & FiveSixEight

FREE before 20:00
£2.50 after 20:00
£1.50 on  guestlist

imperialcollegeunion.org/whats-on imperial college union



h Tuesday cocktail club

02
Li
Long Island iced tea

Mix & match any two cocktails
Only £7.00

Choose from Mojito, Long Island Iced Tea, Russian Moscow Mule or Cuba Libre

imperialcollegeunion.org/food-drink imperial college union



REYNOLDS BAR

JANUARY SALES

PIZZA AND A DRINK
Food/Drink Offer
Get a Pizza and a pint between 5-7pm for only £7.50! (Soft drink only £6.50)
DRINKS: Bud Light/Stella A, Somersby, Ballhaven Best or pint of soft drink

CRAFT ACADEMY
New Products!
Any 3 Craft Academy bottles for £5.00!
Choose from Bitter Sweet (Black IPA), High and Dry (Dry Hop Lager), Desert Pilsner (Pils Ael and Over Easy IPA!)

COCKTAIL CARD (YOYO)
Buy 4 cocktails any night of the week and receive a FREE cocktail on a Friday night!

imperialcollegeunion.org/januarysales

Coming up in our bars



metric FiveSixEight THE UNION BAR

Super Quiz
Every Tuesday
20:00-22:00

Cocktail Night
Every Tuesday
18:00-23:00

CSP Wednesday
Every Wednesday
19:00-02:00

VK Ipop
This Friday
20:00-02:00

Find us on Facebook!
fb.com/beitbars



h

Cocktail Club
Every Tuesday
19:30-23:00

We love Wine
Wednesday 13 December
18:00-20:30

Pub Quiz
Every Thursday
19:30-23:00

PGI Friday
Every Friday
16:00-23:00

Find us on Facebook!
fb.com/hbarpub



REYNOLDS BAR

Free Pool
Every Day
17:00-23:00

Pub Quiz
Every Tuesday
18:30-23:00

Sports Night
Every Wednesday
18:00 onwards

Cocktail Night
Every Friday
17:00 onwards

Find us on Facebook!
fb.com/reynoldsbarcx

Get exclusive offers, discounts and more on our bars' Facebook Pages.

imperialcollegeunion.org/whats-on

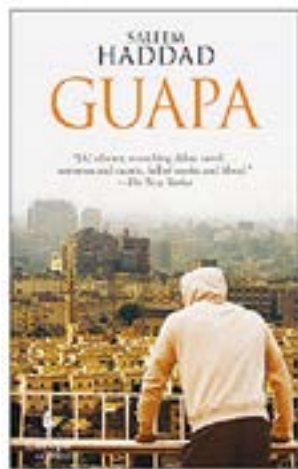
imperial college union

BOOKS

books.felix@imperial.ac.uk

Debut novel challenges traditions of the Arab world

Saleem Haddad's first novel Guapa follows a day in the life of a gay man in an Arab city, questioning deep-set societal expectations



BOOKS

Bayan Al-Balushi

Books writer

The first time I heard of this book was when I watched the author being interviewed on an Arab channel. Not having watched the interview from the beginning, I didn't know what the novel was about, but I was intrigued by their discussion of Arab culture and traditions. When I learnt that the book follows a gay Arab man in an unnamed Arab country, I knew I had to read it.

The novel follows one day in the life of Rasa, a twenty seven-year-old gay man, living with his grandmother, who in the book represents the voice of societal expectations. It is set in an Arab city rocked by the events of the Arab Spring. The day begins with his grandmother finding him in bed with Taymour, his lover of three years, whose wedding Rasa is to attend that very evening.

As we follow Rasa throughout this day we get a clear, vivid insight into the political uprisings, his upbringing, Arab culture and tradition, and the

respite that Guapa, a bar with an underground gay club, brings him.

Frankly, I was quite surprised by how well Haddad handled such difficult themes with relative ease. He was able to capture so well how stifling some cultural and traditional expectations can be – expectations that are based on a nonsensical inheritance of traditions passed religiously down every generation. He deftly showed how the concept embodied by a small word like *eib*, or shame, can be used to dictate one's behaviour lest you draw too much attention to yourself. And, of course, let us not forget the all too important question attached to every action one commits: *What would people say?*

Being an Arab myself, I completely understand how rigid society's defini-

tion of what is acceptable can be, and how reluctant people seem to be to do anything, no matter how insignificant the action, for fear of how others would perceive it. Haddad was able to depict these re-

“He deftly showed how the concept embodied by a small word like *eib*, or shame, can be used to dictate one's behaviour”

strictions and their consequences so well in Mimi, Rasa's old high school friend. Seated beside Rasa during the wedding, she

keeps leaning in, whispering to him her little secrets – how overbearing her mother-in-law is, how she regrets never doing what she wanted but what society demanded of her.

While the novel is easy to read, the writing did seem slightly stilted at times and one can tell that this is indeed a debut novel. But that does not detract from the important themes it considers; Haddad has masterfully handled many crucial and difficult topics. Rasa's grandmother is the epitome of a domineering Arab matriarch, so faithfully depicted, especially through her speeches, which made me laugh to the point of tears at times.

In my opinion, it is high time that we have an open, transparent dialogue of homosexuality in the Arab world. We all know or have heard of a gay Arab

person, but steadfastly refuse to confront it and have a serious conversation about it. Some are strongly opposed to it, due to religious and cultural reasons, while others tolerate it as long as it is

“Haddad has masterfully handled so many crucial and difficult themes”

kept out of their sight.

Although countries like Bahrain and Jordan have not criminalised homosexuality, LGBTQ individuals still face discrimination if they outwardly display their sexuality. The majority of the Gulf States have prison terms

for male homosexuality, and it is punishable by death in Saudi Arabia and Iraq. I believe these views are slowly, but surely, evolving.

My visit to Liverpool in summer coincided with Pride. I was transfixed by the intense energy the participants brought to the city, through the music of the marching bands, the choreographed dances, and the sheer number of participants. I saw people bearing flags from various Middle Eastern countries including Iran, Kuwait, and Oman. There were a few protestors voicing their discontent, but that hardly affected the festival's atmosphere.

Considering the more progressive views of the younger generations, a discussion on treatment of LGBTQ Arabs needs to be had; hopefully, this novel will encourage it.



Saleem Haddad, author of *Guapa* // Sami Haddad

Sundance Film Festival: Start as you mean to go on

Twelve months ago Sundance kicked off a wonderful year for film – what will the 2018 edition bring?

FILM

Ashley Luckyram
Film Editor

In 1978 the very first Sundance Film Festival took place, with the goal of showcasing the potential of American independent cinema. On offer were films from the likes of Martin Scorsese and Elia Kazan. It is fair to say that since then Sundance has been an integral part of the independent film revolution. If John Cassavetes was the father that conceived American independent cinema, then Robert Redford's Sundance Institute was the loving mother that tenderly nurtured it. A decade later a 26 year old Steven Soderbergh took his directorial debut to Park City, claiming the Audience Award at the festival, and going on to win the prestigious Palme d'Or at the Cannes Film Festival, as well as earning an Academy Award

nomination for Original Screenplay. *Sex, Lies, and Videotape* would go on to be a huge financial success, signalling the acceptance of young run-and-gun indie filmmakers into both the hearts of the mainstream public and the minds of the upper echelons of world cinema. In the quarter of a century since then the likes of Paul Thomas Anderson, Quentin Tarantino, Darren Aronofsky, Kelly Reichardt, Wes Anderson, Ava DuVernay, Damian Chazelle and David O. Russell have all gotten their big break at Sundance, either through the Institute's many film programs, workshops, and labs, or through premiering their early projects at the festival, underlining Sundance's prominence in shaping the modern cinematic landscape.

Yet the last couple of editions of the Sundance Film Festival have seen a further evolution, with prestigious films premiering there in the hope of scoring major awards

more than a year later. Cases in point include 2014's *Whiplash*, which went on to score five Oscar nominations, and 2016's *Manchester by the Sea*, which went on to earn six. Last year's stellar line-up continued this trend, with *Get Out*, *The Big Sick*, *Mudbound*, and, in particular, *Call Me by Your Name* all hoping for nods when the Academy Award nominations are announced next week. The festival has always served as something of a shop window – for those with films playing this is not a traditionally enjoyable time, as their agents

"Sundance has been an integral part of the independent film revolution"



Look at me, I am the captain now // Sundance



Careful of your fingers Rob // COSMO

and producers desperately seek distribution deals. 2017 saw an all-time high for films being picked up, with the likes of A24, Amazon, and Netflix being serial offenders. As ever, the festival continued to put a diverse range of voices on display: LGBTQ+ films had a strong showing with *Call Me by Your Name*, *God's Own Country*, and *Beach Rats*; Asian-American life was given the spotlight in *Columbus* and *Gook*; and female directors Eliza Hittman, Dee Rees, Maggie Betts, and Gillian Robespierre earned some of the best reviews of the fortnight.

Perhaps most notable were the astonishingly small-scale films that meditatively dealt with colossal themes of time and memory in *A Ghost Story* and *Marjorie Prime*. Twelve months ago we were delivered one of the finest Sundances in history, and a very good year followed, with an extremely diverse Oscar race still yet to play out.

Let us now turn our attention to what the 2018 festival has in store. As usual with Sundance, a host of the films on show are debuts from new faces, and a great part of the fun is discovering budding Andersons, Tarantinos, Soderberghs, and Aro-

"Gus Van Sant enters a dark comedy biopic based on controversial quadriplegic cartoonist John Callahan"

nofskys at their earliest stages. It's difficult to say much about them, but we can certainly speculate on the biggest name at this year's festival: Gus Van Sant. Van Sant is a gifted auteur, able to

deliver awards friendly crowd-pleasers such as *Good Will Hunting* and *Milk*, but far better known for his quirky indies such as *My Own Private Idaho* and *Drugstore Cowboy*. Appreciated worldwide, as evidenced by his Palme d'Or win for the haunting *Elephant*, Van Sant has recently been on a poor run of form epitomised by the much-maligned *Sea of Trees*. He enters Sundance with *Don't Worry, He Won't Get Far On Foot*, a dark comedy biopic based on controversial quadriplegic cartoonist John Callahan. The intriguing subject of the film will be portrayed by Joaquin Phoenix, reuniting with the man who directed him in his breakthrough performance more than twenty years ago in *To Die For*. Phoenix is joined by a strong cast including Rooney Mara, Jonah Hill, and Jack Black, and the project already has a May release date with Amazon Studios. Here's to hoping for a return to form for Van Sant.



Ron Swanson adds playing guitar to his list of favourite things // Sundance

It is increasingly common for actors, and those in other fields, to make their directorial debut at Sundance. Last year saw Taylor Sheridan complete the border trilogy he wrote, follow-

ing up *Sicario* and *Hell or High Water* by stepping into the director's chair with *Wind River*. This year it is the turn of Paul Dano (period drama *Wildlife*), Rupert Everett (Oscar Wilde adaptation

The Happy Prince), Idris Elba (crime film *Yardie*), comedian Bo Burnham (comedy *Eighth Grade*) and rapper Boots Riley (comedic fantasy sci-fi *Sorry to Bother You*). Though not making their

debut, the relatively inexperienced Ethan Hawke (country music biopic *Blaze*) and cinematographer Reed Morano (sci-fi *I Think We're Alone Now*), fresh from dominating TV with *The Handmaid's Tale*, are in the U.S. Dramatic Competition.

Returning to Park City are festival veterans Tamara Jenkins, the Zellner brothers, Debra Granik, Brett Haley, and Desiree Akhavan. It has been 11 years since Jenkins premiered superb comedy *The Savages* to huge critical acclaim at Sundance. Her latest, *The Private Life*, sounds in a similar vein, with Kathryn Hahn as an author undergoing fertility treatment, placing strain on her relationship with her husband, Paul Giamatti. The Zellners impressed

with their last two films, *Kid-Thing* and *Kumiko, the Treasure Hunter*, at

"It's becoming common for actors to make their directorial debuts at Sundance"

Sundance, and they return with *Damsel*, a comedy-Western sporting an impressive cast including Robert Pattinson, Mia Wasikowska, and Robert Forster. Granik has taken all her films to Sundance. Her last one, *Winter's Bone*, was nominated for

four Academy Awards and gave Jennifer Lawrence a breakthrough role. Little is known about her new feature, *Leave No Trace*, but expect another gritty, hard-hitting drama. Haley is a Sundance regular, and is back again with *Hearts Beat Louder*, a piece about an unlikely father-daughter song-writing duo, featuring Sasha Lane. Lane, who broke out with a starring role in Andrea Arnold's 2016 Cannes prize-winning road film *American Honey*, is also in Akhavan's follow-up to the notable debut *Appropriate Behaviour*. Based on the novel by Emily M. Danforth, *The Miseducation of Cameron Post* is a coming-of-age tale about a girl discovering her own sexuality.

Gary Oldman showing us how it's done-kirk

FILM

DARKEST HOUR



Dir: Joe Wright.
Script: Anthony McCarten.
Starring: Gary Oldman, Kristin Scott Thomas, Lily James, Stephen Dillane. 125 minutes

Fred Fyles
Editor-in-Chief

Darkest Hour begins and ends with a cacophony of yelling. And in the 120 minutes between these two shots, there is plenty more shouting, although none do so louder or more verbosely than Gary Oldman, who transforms himself into Winston Churchill for this film about the early days of his premiership.

Director Joe Wright chooses to narrow his focus down to a period of a few weeks, from Churchill's assumption

of the premiership against the wishes of his own party, to his famous "We shall fight on the beaches" speech, during which time the evacuation of Dunkirk was completed. While Wright expands his scope to include a number of peripheral characters, including Winnie Churchill (Kristin Scott Thomas) and secretary Elizabeth Layton (Lily James), it's clear that this is Oldman's film. It's the right decision, and allows the film to rattle along at a rather lively pace, whilst also showing a point in Churchill's narrative when he wasn't a national hero. That being said, the fact we know he will eventually be absolved removes some of the precariousness from the story.

Oldman manages to undergo, with help from heavy prosthetics, a startling transformation into the Prime Minister – a feat made more impressive when we consider how

fixed Churchill's image is in our cultural consciousness. Oldman allows his Churchill to let his guard down at a number of points in the film – particularly the scenes with his wife, for which Scott Thomas doesn't get nearly enough screen time. Rather than going down the traditional route, well-trodden by those who have played Churchill in the past, and portraying him as merely blustery and irritable, Oldman pulls together a number of nuances and affectations to make his Churchill a more rounded character. At key points in the drama, however, he reverts to type, huffing and puffing through his lines.

It's lucky for Wright that Oldman manages to rise to the challenge, since he elevates what would otherwise be a forgettable film. While Wright's camerawork is adept – despite an over-reliance on a number of formulaic shots and tracking decisions



V for (Oscars) victory // Focus Features

– this is a film where the actors have been glossed over, constrained within a patina of overlighting, over-costuming, and over-scoring.

In other words, *Darkest Hour* resembles any number of other big-

budget historical dramas – *The Imitation Game*, *Suffragette*, *The King's Speech* – which gives it a sense of datedness. While it's a style of film that is, obviously, still being made, alongside its more nimble compatriots

on the road to the Oscars it resembles a plodding dinosaur. An enjoyable watch, but not a film that does much new, or stick in the mind once the credits have rolled.

FILM

film.felix@imperial.ac.uk

A messy, ham-fisted take on race and violence

Three Billboards Outside Ebbing, Missouri heads into the Oscars race as a front-runner, but Martin McDonagh's third feature tries to take on the heavy-hitting topic of police brutality, and falls flat.

FILM

THREE BILLBOARDS
OUTSIDE EBBING,
MISSOURI

Dir: Martin McDonagh.
Script: Martin McDonagh.
Starring: Frances McDormand, Woody Harrelson, Sam Rockwell, John Hawkes, Peter Dinklage. 115 minutes

Fred Fyles
Editor-in-Chief

Three Billboards Outside Ebbing, Missouri, shows what writer and director Martin McDonagh does best: write sharp, expletive-filled dialogue that snaps across the screen like it was created by Aaron Sorkin's angry kid brother. Over the course of two previous features, and numerous stage works, McDonagh has set himself apart as one of the most unique directors working today. Unfortunately, *Three Billboards* also highlights his weaknesses, displaying an anathema for well-rounded characterisation, an inability to achieve tonal balance, and a complete avoidance of nuance.

Set in the small town of Ebbing – a non-specific location that serves as a stand-in for any number of generic 'Midwestern' locales – *Three Billboards* is set seven months after the vicious rape and murder of teenager Angela Hayes. It is a crime that remains unsolved, leading Angela's mother, Mildred (Frances McDormand), to purchase three billboards along the road where her daughter was killed, re-

mind the townspeople that justice has not been served. "It seems like the local police department is too busy goin' round torturing black folks to be bothered doing anything about solving actual crime", as Mildred put it, referring to the racial tensions that lie at the heart of the film.

This decision of McDonagh's – to wrap his snappy language around the incredibly emotive issue of police brutality – is the film's ultimate downfall. He thrusts issues of race into the narrative with a complete lack of nuance or tact, embodying them in the character of Office Dixon (Sam Rockwell); while he might not be the only racist member of Ebbing's police department, he is the most racist, bearing responsibility for the aforementioned torturing of people of color. Throughout the film he continually intimidates the few minority characters present, and uses disproportionate levels of force without any serious repercussions.

His 'lovable hick' character is, supposedly, countered by Bill Willoughby (Woody Harrelson), the town's sheriff. Claiming to be committed to justice for Angela in spirit, if not quite in practice, he still continues to happily have racist thugs in his team and needs to be spurred into action by Mildred. McDonagh counters the implications of Willoughby's inactions by playing a sympathy card that is offensively obvious to the audience, and giving him terminal cancer. If this is supposed to remind us that morality is not a black and white affair, as



"Five months"... "and still no SCR Breakfasts"... "How come, Imperial?" // Fox Searchlight

McDonagh has exhorted in numerous interviews, it is done without nuance, and with a completely straight face.

While it may not directly mine a Trumpian seam of perceived injustice against the police, make no mistake: *Three Billboards* is, at its heart, a Blue Lives Matter film, telling us we should forgive racist cops who feel free to torture or kill black folks, provided they neatly learn their lessons within a 115-minute runtime. Topics as urgent and emotionally-resonant as modern-day racism and sexual violence are handled in a completely tone-deaf manner – all the more inexcusable now the cultural dialogue surrounding them has become a roar.

McDonagh has made a choice to set himself against a standard it is difficult for any filmmaker to measure up to; but

when he makes the choice to not include any black characters in the main cast, it implies McDonagh sees the political context as little more than fodder for the film's necessary redemptive arc. The closest we come to a fully-realised black character – in a film where race is a central focus – is one of Angela's coworkers, who is arrested for possession of weed. A crime for which African-Americans are arrested at four times the rate as Caucasians, is a mere narrative device.

The other major failure is a confusion about what kind of film *Three Billboards* is supposed to be, lurching from black comedy to serious drama within the space of a couple of lines. It's a juxtaposition that lessens the impact of the truly great moments within the piece – and make no mistake, there are some really brilliant scenes within

the film. By the credits roll, this ricocheting back and forth – with detours into sickly sentimentality and teen angst – leaves one feeling rather queasy, having seen two half-decent films rather than a complete work.

Three Billboards is at its best when it serves as a platform for McDormand's acting chops. Her Mildred is by turns fierce and maternal, and McDormand manages to convey a bitter world-weariness that has imprinted itself upon Mildred's entire being. A current front-runner to collect the Best Actress Oscar in March, it would be a well-deserved win, since she carries much of the film. There are strong supporting turns from the rest of the cast, who – with a few exceptions – uniformly deliver: Lucas Hedges is affecting as Mildred's son, who just wants to move on without being

constantly reminded of his sister's murder, and Harrelson is convincing, even if his lines are not. Even Peter Dinklage plays his part well, although his character's inclusion seems to just be an excuse for McDonagh to use the word 'midget' throughout the script.

Ultimately, despite the best efforts of the cast, the film's screenplay is what lets it down. While McDonagh managed to do well with *In Bruges*, his Belgian-set caper, *Three Billboards* has him biting off far more than he can chew. It's cinema where the harrowing nature of police brutality can be used as a mere backdrop; where emotional tone fluctuates so wildly as to leave you nauseated; where expletives serve as a stand-in for well-written lines. It's not as clever as it thinks it is, and absolutely nowhere near as clever as it needs to be.

FILM

film.felix@imperial.ac.uk

Is time up for Woody Allen?

At one point, it seemed that #MeToo and *Time's Up* would pass director Woody Allen by, but things are starting to change, as more actors disavow their relationships with him.

FILM

Fred Fyles
Editor-in-Chief

Little over three months have passed since allegations of sexual misconduct against movie industry czar Harvey Weinstein emerged, and since then the flood of reports of Hollywood abuse shows no sign of abating. Not only have more victims of Weinstein come out of the shadows – more than 80 as things currently stand – but others have also faced accusations of heinous misconduct, from Kevin Spacey to Jeffrey Tambor. Some, like Louis C.K., have confirmed the accusations, and offered to make amends; others staunchly proclaim their innocence. Barely a week goes by without new

crimes coming to light – if your favourite actor is trending on Twitter, there's a fair chance it could be because allegations have emerged.

"One figure who had thus far seemed immune to the #MeToo movement was Woody Allen"

Amid this awful deluge, however, something good has emerged: women, within both the film industry and society in general, are standing up, using hashtags like #MeToo or creating organisations like *Time's Up*.

'The Silence Breakers' were even chosen as *TIME* magazine's 'Person of the Year', in recognition of the profound cultural shift. One figure who has thus far seemed immune to the #MeToo movement, however, is director Woody Allen. This might be about to change.

Allen's career has long had a sense of unease attached, dating back 25 years, to 1992, when Dylan Farrow – the adoptive daughter of his then-partner Mia Farrow – accused him of sexually assaulting her. She was seven at the time. Farrow's allegations were investigated by leading doctors at the Yale-New Haven Hospital's Child Sexual Abuse Clinic, who concluded that they were fabricated, but their report has been criticised by some. While the state attorney said that there

was "probable cause" to pursue Allen legally, the case was eventually dropped. Since then, whenever the topic of conversation turns to Allen, it isn't long before someone brings up the case; "and have you seen his films?" they'll say, "it's no surprise".

It is true that Allen does himself no favours with his filmography. Even as someone who loves much of his work, it's easy to see some of the problems in the films, which typically revolve around a wide age-gap between the main romantic couples in his films. Throughout his films, he continually returns to the trope of a young ingenue, taken in by an older, more experienced man. The gap has been known to push close to 40 years in some films, and in *Manhattan*, his best work, Allen's character is

in a relationship with a high school student, 26 years younger than him.

But while all of it add up to a pretty grim picture, many actors have been happy to continue working with Allen. At one point, it might have seemed that the #MeToo revolution was going to pass him by; indeed, in December Dylan wrote an op-ed in the *LA Times*, asking why actors like Kate Winslet and Blake Lively were quick to criticise Weinstein and speak out in favour of the change in mood, but also defended their work with Allen. Winslet, for example, said "as the actor...you just have to step away and say, I don't know anything, really...Woody Allen is an incredible director."

Things have since shifted. One by one, actors who had previously worked with Allen, or who have projects with him, are stating their regret. Ellen Page called working with Allen "the biggest regret of my career", while Mira Sorvino, who won an Academy Award for her role in Allen's *Mighty Aphrodite*, wrote an open letter apologising to Dylan for having her watch "someone you called out as having hurt you...be lauded again and again."

Greta Gerwig, who worked with Allen in *To Rome With Love*, has said "if I had known then what I know now, I would not have acted in the film." The director, actor, and screenwriter went on to say that she would never work with him again. Rebecca Hall and Timothee Chalamet, meanwhile, who both appear in Allen's latest work *A Rainy Day in New*

York, are both donating their salaries to charities, including *Time's Up*, and Hall has said she will not work with him again.

This information about Allen has been common knowledge for many years, so what has changed? As the talk around sexual misconduct in Hollywood has reached a crescendo, it is harder and harder for actors to plead ignorance about who they're working with; this is especially true in a case like Allen's, where his alleged victims have written, in painstaking detail, about the impact his actions have had on their lives. There is also another sea change: more and more people are waking up to the true nature of sexual misconduct, which is centred around power, and is just one product of the culture in which we live. We can't blame the individual; we

"The #MeToo movement has now drawn a clear line in the sand for Hollywood"

need to look at how we all contribute to the problem, and this extends to the actors.

Does this mark the end of Allen's career? It's difficult to say at this stage, but it is certain that the #MeToo movement has drawn a line in the sand for many in Hollywood – whether or not he goes on making films, things will never be the same.



Greta Gerwig has said she will not work with Allen again, while Timothee Chalamet is donating his salary // CC

TELEVISION

tv.felix@imperial.ac.uk

Killer robots, memory scanners, and self-driving pizza

Charlie Brooker is back, with six new episodes of his dark sci-fi anthology. But how do these episodes compare to seasons past? We take you through the highs, the lows, and the weird.

TV

Andrew Melville

TV Editor

Fred Fyles

Editor-in-Chief

USS CALLISTER



Director: Toby Haynes.
Script: Charlie Brooker, William Bridges.
Starring: Jesse Plemons, Cristin Milioti, Jimmi Simpson, Micaela Coel.

Black Mirror's fourth season kicks off with a turn away from the dark, nihilistic tones of earlier seasons, opting instead for a campy parody of a sci-fi classic. Many critics have hailed the opening episode as the best of the season and it's easy to see why: the story is cohesive, engaging, and well deliv-

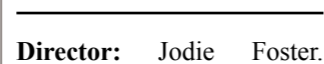
ered. In the context of any show other than *Black Mirror*, 'USS Callister' would comfortably pass by unnoticed.

However, *Black Mirror* is not just any other show, and a passable episode that lacks the edge that fans have come to expect from creator Charlie Brooker should not come anywhere near the premiere to a new season. Were 'USS Callister' in any of the show's previous seasons, I would expect to find it tucked away as fourth or fifth billing, so as not to call attention to itself. Unfortunately, Season 4 already has those positions of mediocrity filled by shy, average episodes, so a sappy Star Trek parody is dropped into first place – and 'USS Callister' definitely is more parody than homage, complete with snipes at its predecessor's indulgence of young male fantasies and simple set design. It does, however,

use this precis to make an interesting comparison between the 'nerdy virgin' stereotype of the '80s and '90s, and the 'virgin neckbeard' of today, a link that is left largely unexplored.

Unlike the majority of *Black Mirror's* many horror stories, this camp fireside tale has a happy ending, with very little lost. For a show that thrives on its dark warnings against tech, this is an odd choice, and the thematic shift away from skepticism is mirrored in other episodes across this season. This episode isn't the first to end on a wholly happy note, as 'San Junipero' from season 3 ends with a wholesome romance. However, 'USS Callister' does not share the slow reveal of information leading to an engaging twist that gave 'San Junipero' its compelling narrative. **AM**

ARKANGEL



Director: Jodie Foster.
Script: Charlie Brooker.
Starring: Rosemarie DeWitt, Brenna Harding, Owen Teague.

The disappointing aftertaste of 'USS Callister' is immediately remedied with a return to what Brooker does best: introducing a plausible technology and allowing the characters' own decisions on how they use it to be the force that drives the story forward. Showing us how humans naturally abuse the abilities that technology facilitate makes for a much scarier reality than the *Tech ex Machina* deployed in episodes like 'Metalhead'.

However, some may see the moral points raised in Jodie Foster's directing debut as obvious, and less complex than similar episodes from previous seasons. I find that this is an unfair analysis: what *Black Mirror* excels at is buckling us in, letting us know where the episode is headed, and plowing on towards our destination with the viewer powerless to stop it. But 'Arkangel' is unable to solely rely on this tactic, as, for this episode structure to hold up, the plot must not depend on the erratic unreasonable reactions of characters.

Some critics have suggested that the episode does not venture far enough from the obvious moral questions, noting the missed opportunity for the exploration of themes other than helicopter parenting. While 'Arkangel'

is certainly a fantastic premise, backed by fantastic young acting talent, some may also find the episode does not venture far enough from the most obvious ethical questions. Despite this, 'Arkangel' stands out as one of only two episodes this season that feel anywhere near to the *Black Mirror* of seasons 1 and 2, ending

“Arkangel stands out as one of only two episodes anywhere near the quality of earlier seasons”

with that warm, familiar sinking feeling that I want from an hour of TV. 'Arkangel' is merely a turn back to quality we saw in season 3, and not a step forward. For *Black Mirror* to remain relevant (which it almost certainly has ample opportunity to) it must not settle for the obvious questions and more obvious answers. **AM**

CROCODILE



Director: John Hillcoat.
Script: Charlie Brooker.
Starring: Andrea Riseborough, Kiran Sonia Sawar, Andrew Gower.

Black Mirror's modus operandi – showing us how technological devel-

opments will only exacerbate the darkness that lies below our thin veneer of humanity – only works when it straddles the right side of plausibility. It's a difficult thing to get right, as evidenced by 'Crocodile', which is by far the worst episode of the new series thanks to its refusal to represent anything coming remotely close to actual human behaviour.

This time the technology is a device that reads your memories, the setting is somewhere in Scandinavia where everyone has massive houses, and the human instinct is... a propensity to violently murder people? Starring Angela Riseborough as an architect whose boyfriend runs down a cyclist, 'Crocodile' explores the classic idea that small lies lead to big lies, but progresses at too fast a pace to allow us to believe in its storyline. In a desperation to draw blood, Brooker's script has Riseborough's character going down a road away from plausible humanity, and the result is a schlocky, campy episode. Even its payoff at the end is laughable, like something out of *The Scary Door*. Riseborough is excellent, as are her co-stars Kiran Sonia Sawar and Andrew Gower, but they are working with exceptionally poor material. There's only so much they can do with the badly set-up premise.

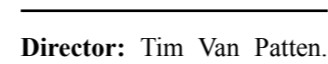
I demand a full episode centred around the real star of the show: the self-driving pizza delivery van. The future is bright, Mr Brooker. **FF**

TELEVISION

tv.felix@imperial.ac.uk

– welcome to the *Black Mirror* future

HANG THE DJ



Director: Tim Van Patten.
Script: Charlie Brooker.
Starring: Joe Cole, Georgina Campbell.

'Hang the DJ' is a spiritual successor to season 3's 'San Junipero': both episodes have the same basic structure, following a relationship that blossoms in a setting that is somehow 'off', and both end with the revelation that this setting is just some sort of simulation. Unfortunately, this is where the parallels between the two end, and 'Hang the DJ' falls short of delivering the same punch that made 'San Junipero' season 3's standout episode.

Where 'San Junipero' earned its merit was in the slow, methodical reveal of information that twisted the viewers' perceptions of the reality presented until the episode finally 'clicks'. In 'Hang the DJ' we are lead down no such track, with only scattered comments by Frank on his doubts about reality and the tenuous fact that pebbles seem to always bounce four times to indicate that something is amiss. This is less a hint

“Where 'Hang the DJ' falls short of the standards expected of it is in the final minutes”

and more of a reveal in itself, as from this point onwards the viewer is just left to wait until the episode is ready to reveal

that Frank and Amy are just living in a simulation – realistically, there is no other possibility.

Where the episode really falls short of the standard expected is in its final minutes, where we learn that 998 out of the 1000 Frank and Amy simulations realised that the dating game was just a test. Not only does this raise somewhat alarming questions about what the episode has to say about modern dating (that Tinder and its ilk have gamified the dating process?), but also does not seem to provide any solid reason for claiming that the pair are a 99.8% match. Would they have passed the test if they had decided to escape the simulation alone? Earlier seasons of *Black Mirror* have not relied on chance character decisions, at least on this scale, and the dependence on such this season shows a decline in the quality to be expected of the show going forward. **AM**

METALHEAD



Director: David Slade.
Script: Charlie Brooker.
Starring: Maxine Peake, Clint Dyer, Jake Davies.

Director David Slade might have put some viewers off with his decision to shoot 'Metalhead' in black and white, but the decision is bold, and pays off. Centring around a lone woman (Maxine Peake) escaping from a killer robot – resembling a dog, but with added weaponry – 'Metalhead' is visually stunning, from start to finish. Overhead tracking shows the thrilling the thrilling desolation of the countryside, its dangerous beauty offset by the vicious robotics on display. We



The only photo of this year's summer ball survivor // Netflix

frequently cut from these wide open shots – highlighting the isolation of Peake's character – to close-ups of her face, creating a claustrophobic atmosphere that contributes to the episode's sense of unease.

It is clear that Slade's intention with the episode is to create an unremitting tension within the viewer, and he does this well, putting us on the edge of our seats. As part of the *Black Mirror* universe, however, something seems missing. It resembles a survival horror – albeit a very good one – which is a genre that has been done to death across TV, film, and video games. And it lacks what sets such horrors apart – a gripping back story. We're dropped right into the middle of a post-apocalyptic world, with no sort of explanation of how things got to be that way. This is, obviously, a delib-

erate choice, but then the episode ends with a reveal that tries to impose some kind of narrative where there wasn't one before – it leaves us wanting more. There are enough individual elements in 'Metalhead' to add up to a stellar episode, but they never quite come together to a satisfying whole. **FF**

BLACK MUSEUM



Director: Colm McCarthy.
Script: Charlie Brooker.
Starring: Douglas Hodge, Letitia Wright.

I saved the best until last. I'd heard from Twitter that this was one of the best episodes of the new season – comparable to standouts from the previous few – packed to the brim with the juicy darkness *Black Mirror* is known for. And while

'Black Museum' did deliver some of the chills you get when an episode is tapping into something really deep, its structure makes it difficult to appreciate as a cohesive whole.

Yes, this is one of those tropes well-loved by writers, and usually disparaged by viewers: the compendium episode,

“David Slade's decision to shoot 'Metalhead' in black and white is bold, and pays off”

where we have multiple individual stories instead of a single one. In the case of 'Black Museum', the eponymous museum

plays host to a number of gruesome artifacts and exhibitions, of which we are shows three, in short twenty minute bursts. It begins with its weakest segment, in which a medical device that allows a doctor to feel what their patient feels goes badly wrong – not because of any instinct of human nature, but rather because it simply malfunctions. This is then followed by two better parts, which – despite some flaws – lead up to a conclusion that is genuinely surprising.

But no amount of shock can disguise the fact that this episode isn't an exceptional idea stretched to its logical conclusion, but three reasonable ideas tacked together, none of which are explored fully. It's not an awe-inspiring end to the season, but it certainly remains one of the highlights of the lackluster set of episodes on offer. **FF**



Union Council looked pretty different this year // Wikimedia

TELEVISION

tv.felix@imperial.ac.uk

Hard Sun – Five years until the world ends in this melodramatic miniseries

Agyness Deyn and Jim Sturgess have enormous fun in Neil Cross' show, which is completely bonkers, but fails to make the most of its interesting premise.

TELEVISION

HARD SUN



Creator: Neil Cross.
Starring: Agyness Deyn, Jim Sturgess, Nikki Amuka-Bird, Owain Arthur.

Sung Soo Moon

TV Writer

From writer Neil Cross, who masterminded *Luther*, comes a series that gives a twist to the tradition of quintessentially British escapist police drama. The story follows Elaine Renko (Agyness Deyn) and Charlie Hicks (Jim Sturgess), two detectives who stumble upon a government leak describing 'Hard Sun' – a catastrophic event that will cause the end of the world in 5 years' time. Set in an alternative present, the six-part series weaves a flush of expected cop-drama themes with a looming doomsday plot.

But while it tries to seem gritty and rough around

the edges, with a flavour-some array of colloquial accents and over-the-top violence, it falls short in establishing a realism in all the kerfuffle. The characters are drawn out in a rudimentary and clumsy fashion, but Sturgess and Deyn have fun with the hammy affair, evident in their performances. We just go along with it. What you get is an enjoyable yet clichéd detective-melodrama with a refreshing, albeit side-lined, set-up. What ensues is a slick drama that appreciates its premise but isn't in love with it; there are many different back alleys the plot could've taken but it cops-out and strays away from the enormous potential in its premise. Neil Cross sticks to what he knows, and this can be frustrating.

The whole series has a certain visual style as if it were adapted from a graphic novel, but not enough substance to justify its aesthetic. Its ambitions are clearly set high, as it tries to delve into an intelligent



Mmmmm, brooding // BBC

exploration on morality, religion, and justice, but the frequent pantomime-y dialogue lets itself down. If you expect anything more than a standard police drama, it is pedestrian and dissatisfactory.

Hard Sun is bonkers, starting with the unconventional set-up, but a part of its indulgence is seeing how everything works out in the end, apocalypse and all. It is

a lot of fun for the most part: each episode follows a loose formula presenting a different murder case that somehow, unconvincingly, relates to the 'Hard Sun' of the title. The overdramatic universe of *Hard Sun* is life as we know it, but on Class A opioids— and that is its pleasure. The six episodes rivet along sweetly at a rewarding pace. Neil Cross goes all out this pet

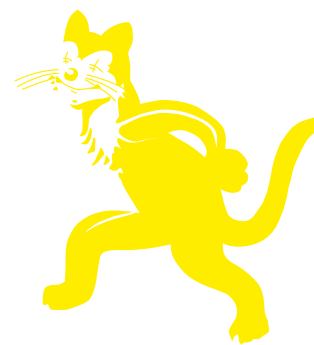
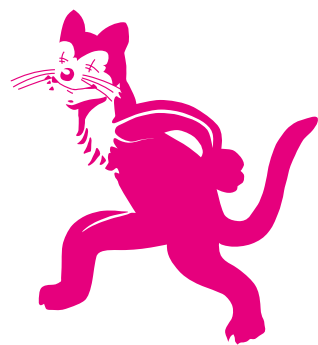
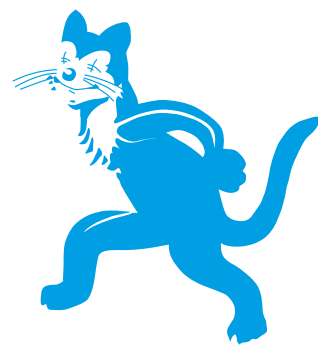
project, eager to please the fans, to flex his detective drama muscles and *Hard Sun* makes a cute addition to his expanding résumé.

The whole series was released on BBC iPlayer from 6th January, made available for a month. With the rise in popularity of on-demand TV and a growing culture of binge watching, more and more content seems to be moving online with all

episodes released at the same time.

While it's unlikely that we will see any further of *Hard Sun* and its world in the near future, I think it has enough of a certain charm about it to become an underappreciated gem for fans of the current wave of contemporary British crime drama.

Hard Sun is available on BBC iPlayer now.



Felix is Recruiting!

We're looking for new writers, editors, illustrators, photographers, grammar nerds, and computer whizzes to get involved with our great team. No experience needed!

If you're interested, email felix@ic.ac.uk

Have you made a SACAs nomination yet?



Great teachers make a difference! We know this because none of us would have got this far without them. So why not show your appreciation with a SACAs nomination? There are 8 categories and students can submit as many nominations as they like. There's also a category for best support staff because, let's face it, they're the unsung heroes of our academic experience. So let's show that performance matters by rewarding excellence in academic and support staff. Every nominee gets a coveted mug and winners are announced in May.

Nominations close 11 February. Submit yours now at imperialcollegeunion.org/sacas

Summer Ball 2018



Summer Ball is one of the biggest events on the student calendar. With only 1,700 people able to attend, it's no wonder tickets have been selling like hot cakes! Don't miss out, as the best priced tickets have already been gobbled up by those quick on the draw.

This end of year celebration, held on South Kensington Campus, features a free fun fair, fireworks display, great value food and drink, and amazing performances including a headliner. Thanks to a student vote, this year's event theme is *Roaring 20s*.

Get your ticket now at imperialcollegeunion.org/summerball

Exam pressures - let us help

advice centre
INDEPENDENT
CONFIDENTIAL
IMPARTIAL

Mitigating Circumstances

Is there anything affecting your ability to sit exams or prep for them? You may qualify for Mitigating Circumstances and the Union has a dedicated team to help you with this. Please don't go at it alone or wait until you've underperformed – our Advice Centre is confidential, independent from College, and therefore completely impartial. We also help with appeals, plagiarism, and other academic issues, as well as welfare issues such as housing, benefits and legal advice.

Contact us at imperialcollegeunion.org/advice or call **020 7594 8060**

shop

**CLOTHING
SALE!**

UP TO 50% OFF*

*on select lines

imperialcollegeunion.org/shop

GAMES

games.felix@imperial.ac.uk

Pressing buttons: How eSports turned into a worldwide

This month Imperial will be hosting the second eSports varsity against UCL. It's just one aspect of the booming eSports industry, which has begun to take hold in the UK over the last few years. With prize pools of millions of dollars, and legions of fans across the globe, eSports are bigger than ever, but where did they come from? And what can we expect in the years to come?

GAMES

Fred Fyles
Editor-in-Chief

A group of individuals zip around like pin-balls, moving at too high a speed to keep track; one team, previously on the offensive, are now in trouble, under heavy attack from their opponents, who have bounced back with an increased vitality. The audience hold their breath, chants falling silent, as commentators provide a blow-by-blow account of what is going on in front of them. And then it's all over. The crowd goes wild as the winning team erupt

in celebration, triumphant in their victory.

The event is not a football match, or an NFL final, but last year's iteration of 'The International', the annual *Dota 2* championships – one of the largest eSports events in the world. Similar scenes – in intensity if not in size – are hoped for at Imperial College Union next Saturday, as IC eSports prepare to host the second annual Varsity between Imperial and UCL. Up to 200 participants and spectators will come together to play games like *League of Legends*, *Dota*, and *Starcraft 2*, while many more will follow along online with a stream hosted on Twitch. Imperial, who won last

year, are looking to defend their title, hoping to hold aloft the trophy at the end of the day, while winning teams will be taking home laser-engraved plaques. "This year is essentially bigger in every way," Liam Couch, secretary of ICU's eSports society tells me, with a bigger audience, more awards, and increased sponsorship.

eSports – professional competitive gaming, mainly featuring Multiplayer Online Battle Arena (MOBA) games, such as *Dota 2* – seems like something that you might see in a science-fiction vision of the future. But its pedigree is longer than you might realise, with the earliest competi-



eSports require immense focus on the gameplay // IC eSports

tion taking place decades before most of today's eSports superstars were even born. In October 1972, an announcement was placed on bulletin boards across Stanford University, advertising "The first 'intergalactic spacewar olympics'": the prize was a year's subscription to *Rolling Stone*, and the event was photographed by Annie Leibovitz – then a 23 year old staff photographer, years before her rise to fame. 'Free beer!' was promised.

Compared to current tournaments, this was a much more sedate affair: five players competed in a single room at *Spacewar!*, a 1962 game popular among the programming community. The premise was simple: two ships – the "needle" and the "wedge" – fight against the gravitational pull of a central star, whilst trying to shoot the other down, all representing in glowing green outlines. Those involved didn't know it, but they were involved in the first iteration of what is now a multi-million dollar industry: one small step for gamers, one giant leap for eSports.

Over the next couple of decades, players largely focused on setting high scores in arcade games like *Pac-Man* or *Donkey Kong*, gaining publicity from organisations like the *Guinness Book of World Records*. But it wasn't until the 1990s that eSports really took off. And it wasn't in America – it was in South Korea.

By the end of 1997, East Asia was in the grip of a financial crisis. The collapse of the Thai economy due to the increasing burden of foreign debt caused multiple countries to topple like dominos. Over a period of two weeks, Moody's lowered South Korea's credit rating from A1 to B2, and a series of one-day slumps led to mass unemployment: over a year, the number of unemployed citizens nearly trebled, to around 1.5 million.

It was against this context that the eSports phenomenon blossomed. Some have argued that there were three crucial factors: a government that increasingly funnelled money into telecommunications and internet infrastructure; the rise in popularity of LAN

gaming centres called PC Bangs; and high unemployment rates, which left many Koreans with much more disposable time.

Since then, eSports have taken off at a phenomenal rate: in 2000, the Korean e-Sports

"eSports are beginning to really take off in the UK, with events like Varsity highlighting their prominence"

Association (KeSPA) was founded, coming under the authority of the government's Ministry of Culture, Sports and Tourism. As well as organising tournaments, part of KeSPA's remit is to establish basic welfare principles for those taking part at a professional level: companies are required to have a one-year minimum contract with players,

GAMES

games.felix@imperial.ac.uk

gaming phenomenon

while PC bangs require children under 18 to leave by 10pm. It's part and parcel of eSports increasing cultural presence. As Liam tell me: "eSports have been growing in popularity for a number of years now, with people able to compete against friends and develop themselves as professionals, which was previously not possible."

"Last year, nearly 4,000 tournaments shelled out a prize pool of \$111 million to top players"

It makes sense for governments to get in on the eSports action – games are big business. While a number of critics still question whether video games are true works of art, their popularity is manifestly evident in the economic figures: last year, the video game industry made \$109 billion in revenue. To put that number into context, the global box office for films last year was a mere \$41.2 billion, while worldwide art sales came in at \$45 billion

And this is a market that shows no sign of slowing down: last year the industry grew 7.8%, and is expected to expand massively on smartphone platforms. eSports has the potential to increase this growth even further, as tournaments with eye-wateringly high prize pools proliferate. In 2000, there were 50 eSports tournaments worldwide, with a total prize pool of \$675,000; by last year this had ballooned to

nearly 4,000 tournaments, shelling out \$111 million to top players.

Writing for *The Verge*, Ben Popper identifies the release of *Starcraft II* in 2010 as a key turning point: the game, a science-fiction real time strategy game in which you play as one of three main species, "was embraced by a global community of rabid fans who had been playing its predecessor for more than a decade."

But while eSports remains largely centred around the Korean market, it is beginning to move to the UK too – the British eSports Association was established in 2016, while events like Varsity highlight their prominence. Speaking to Liam, he tells me: "the increasing popularity and profile of our Varsity reflects an increasing desire to watch competitive eSports. The fact we're hosting an event similar to traditional sporting events shows how mainstream this is becoming". Even the name was a deliberate choice, as Roy Lee, ICU eSports' chair tell me: "instead of calling this an eSports competition, we've chosen to call it an eSports Varsity, to break the negative perceptions around eSports, and show the public the similarities between eSports and traditional sports in universities".

Will they ever be as popular as in Korea though? While Liam admits that "the culture is entirely different in South Korea... this is why they're miles better than everyone else," Roy feels that the next few years will be vital for eSports in the UK: "We are seeing strong and accelerated movements in the States due to heavy, focused investments towards students," he

tells me, "what we can do as an eSports society in the coming years will determine whether university eSports in the UK can keep up with these countries in terms of its standards and quality. Competitions between universities shouldn't be limited to within London, or even within the UK. We should look to compete globally." The society is currently working on plans to compete with American universities in the near future.

The debate about whether eSports should be counted as 'real' sports is ongoing; those who defend eSports would point out the quick reaction times and agile minds needed by those who ascend to the top of the leagues, arguing that such skills are similar to those required in a number of professional sports. But the safest argument may be in audience numbers: the 2014 *League of Legends* championship, for example, saw 40,000

fans pack into the same arena South Korea used for the 2002 World Cup semi final; in the States, the first eSports arena has been launched in Santa Ana, California, while later this year the first eSports Arena on the Las Vegas strip is set to open its doors. Viewership of the tournaments has also exploded, thanks to platforms like Twitch, which was bought by Amazon in 2014 for \$1 billion. In 2013, the League of Legends world championship had 32 million people across the globe watching; last year's NBA finals had an audience of only 20 million.

It seems likely that, should the growth currently enjoyed by the eSports industry continue, it may leapfrog a number of other traditional sports. "It's important to note that eSports are achieving a number of participants and viewers it took traditional sports decades or centuries to achieve," Roy tells me, "I am certain

that eSports will be part of university culture very soon." eSports are also challenging traditional assumptions about what gaming and gamers look like: "gamers still find themselves defending their passion for eSports," Roy tells me, "they are immediately associated with the stereotype of

"eSports Society is currently working on competing with American universities"

anti-social nerds in their parents' basement."

The atmosphere at the tournaments show that this couldn't be further from the truth: thousands of people go along to cheer their favourite teams

along, coming together for a brief moment in celebration of teamwork and strategy. "eSports bring people together," argues Liam, "they participate in something bigger, experiencing it as a group, in much the same way other sports and hobbies do. eSports give people an avenue to do what they love whilst sharing that with other people." Looking at videos of these tournaments, and you'd be hard pressed to disagree: while the players are locked in a battle of wits with their screens, their faces masks of steely determination, around them there's a legion of fans, who have come together, and are eagerly looking on.

Imperial College Union's eSports Society will be hosting their Varsity against UCL on Saturday 27th January, from 10am, in the Union Concert Hall. All day tickets are available from the Union website – £4 for players and members; £5 for everyone else.



VR Headsets being tried out by eSports members // IC eSports



eSports tournaments have swelled to massive sizes over the years // Wikimedia

TRAVEL

travel.felix@imperial.ac.uk

Lights will guide you home: catching the northern lights in the UK

Scandinavian countries are famous for offering the best views of northern lights, or Aurora Borealis, especially visible above the North Magnetic Pole. However, getting up there may not be the best value for money. Luckily, there are some UK locations, where you can enjoy the lights for a short study break.

TRAVEL

Elina Michaelidou

Travel Writer

The UK has quite a few spots where the northern lights, or Aurora Borealis, are visible. As you may have guessed already, you have higher chances to see them somewhere up north, particularly in Scotland. However, you'll be surprised to learn that Aurora Borealis has been noticed as south as Oxfordshire and Cornwall! But don't get too excited – this happens rarely, and the chances of seeing them there with the bare eye are definitely very low. If conditions are almost perfect but you still can't see anything, then try it with your camera, since the eye can't sense many colours in low light while a DSLR camera sensor can. For a more detailed explanation, ask your biologist friends.

What are they?

The northern lights are, in a few words, a "light show caused by collisions between electrically charged particles released from the sun that enter the earth's atmosphere and collide with gases such as oxygen and nitrogen", as explained by Aurora Service Europe. Since this is a phenomenon that can be seen above both magnetic poles of the Earth (and usually happens at the same time), there are also southern lights, or Aurora



What an Instagram-worthy view! #goals #like4like //Pixabay

Australis. And, as the Aurora Service mentions, "northern and southern auroras are mirror-like images that occur at the same time, with similar shapes and colours".

"The Aurora Borealis has been noticed as south as Oxfordshire and Cornwall!"

Where to see them?

There are many places in Scotland, some popular ones including the Scottish Highlands, Aberdeenshire, the Isle of Skye (on my own bucket list), and the Galloway Forest Park. In England, you can try viewing them at the Lake District and even Ox-

fordshire or Cornwall (if they are strong enough). In Northern Ireland, they can be seen from Antrim or Rathlin Island. And if you're in Wales, try the Brecon Beacons.

For more vibrant colours, you may prefer to travel outside the UK. Other European destinations include Norway, Sweden, Finland, and Iceland. They are close to the UK, and you can find many good deals on flight tickets, so keep an eye out. In Norway, popular viewpoints gather close to Tromsø, Alta, and Kirkenes; in Sweden, check out Abisko, Jukkasjärvi, and Luleå; in Finland, well-known Aurora Borealis places are Muotka, Kilpisjärvi, and Luosto; and last but not least is Iceland, where you can see the Northern Lights from locations just outside of the capital Reykjavik or the South Shore.

If you have more time and money to spare, you may want to reach further

ahead and travel up to Greenland or Canada.

How to get there?

Another important question is "How am I going to get there now?" I'm afraid to tell you that your options are quite limited. In order to have more chances to see this

magical phenomenon, you need to be away from large cities, which means limited or no public transport! Even if there's a bus or a train, it will most probably not be available at the time you want it. So your options include finding a way to get to the nearest town (plane/train/bus) and then paying someone to drive you to your final destination (which might be expensive) or renting a car yourself (either from London or the closest large city). Car rental could be costly as well, unless you are already 25 years old because most car hire companies have an extra fee for under 25's (that makes no sense to me because you may be 26y/o but have got your license just two days before but that's another topic to discuss).

Well, what happens if you don't have a driver's license (like me) and can't afford to pay for overnight

taxis? Simply find a friend who has one and ask him/her to come with you. The more, the merrier, and also cheaper!

Last tips

Make sure you spend at least a couple of nights there. It's not easy to plan such a trip ahead as weather conditions are unpredictable. Cloudy and foggy nights can spoil your view. But there are some online tools that can help. For instance, the aforementioned Aurora Service Europe or Aurora Watch UK, which report the latest information about the northern lights in Europe and the UK, are worth checking out before travelling. They even send out notifications and alerts upon subscription.

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



So magical and surreal, the Lights are worth sacrificing a weekend for //Pixabay

FOOD

food.felix@imperial.ac.uk



Dark Sugar is a chocolate-lover's paradise // IG: @fayzasblog; IG: @tanyakrot; IG: @darksugars

Worth the Hype? Dark Sugars

Feeling those winter blues? Well then, some dopamine stimulating chocolate is in order! Resident Food Writer Bláithín Dockery gives us her take on Brick Lane shop Dark Sugars.

FOOD

Bláithín Dockery
Food Writer

It's January. The Christmas holidays are over, which means that winter has lost its magical charm and is now just cold and dark. But fear not, for there is a solution to your woes: chocolate.

As Imperial is heavy on the science, I'm sure many of us know that chocolate is a natural mood booster, thanks to chemicals such as phenylethylamine – the 'love drug' – and anandamide – which activates dopamine production. But that's enough about the chemical effects; chocolate still needs to taste good for it to really lift those winter blues. So where better to start than the hyped Dark Sugars.

Naturally, as a highly

trendy chocolatier, Dark Sugars is located in

“Now Christmas is over, winter has lost its charm, and is now just cold and dark”

Brick lane. The founder, Nyanga, opened the chocolate shop following three years of researching cocoa on her family's farm in Ghana, a real commitment to understanding her product. In 2015, Dark Sugars: The Cocoa House opened, offering rich hot chocolates and an immersive experience where cocoa beans are roasted on-site.

First impressions

Before even entering The Cocoa House the luscious chocolate aroma took over me, and I felt myself entering a chocolate haze. The shop has a very earthy vibe, with an overwhelming number of chocolates on display in wooden bowls in every corner. The chocolates looked irresistible, but I was here for the famously hyped hot chocolate. So I pulled myself away from the gorgeous coffee truffles I had spotted, and went to the hot chocolate bar.

The hot chocolates

The board above the counter listed a number of different flavours of hot chocolate such as ginger, nutmeg, salted caramel, and cardamom. I decided to go for something a bit different so I ordered

cardamom. The drinks are made right in front of you: firstly the spices are added to the light milky hot chocolate and then they cut up the huge slabs of chocolate (white, milk, or dark) on the counter into thin shards to make the decadent topping. My cup was quite literally overflowing with choco-

“They cut up huge slabs of chocolate on the counter into thin shards to make the decadent topping”

late. Then the wondrous melting of the chocolate

begins; making an originally nice cup of hot choc into a rich luxurious chocolate experience. The cardamom gave it a nice

flavour as well, but really those chocolate shavings alone were incredible. A perfect treat on a cold January day!

Worth the Hype?

Dark Sugars is every chocolate lover's dream – the aroma of the place alone was enough for me to fall in love. The care that was put into making this chocolatier something special really shows, from the beautiful wooden décor to the amazing flavours of chocolates. The hot chocolate really was incredible and although it is on the pricier side I still believe it is worth the hype.

Price

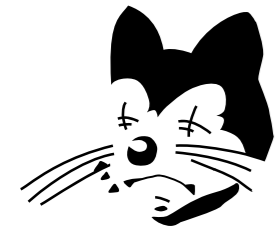
Hot chocolate: £4.50

Best part

The melting chocolate topping

Worst part

The location (Brick lane is a little far for a daily treat!)



Hangman



An artist's impression of what the Summer Ball will look like this year // Wikimedia

‘Feudalism’ announced as Summer Ball theme

HANGMAN

Negafelix
Editor-in-Chief

The Union are encouraging students to “rock it like it’s 1249” at this year’s Summer Ball.

Imperial College Union announced their Summer Ball theme for this year: ‘Feudalism’.

An email was sent out to all students earlier this week, inviting them to “experience life as a medieval peasant, so dust off that hennin, and rock it like it’s 1249”. The invitation encouraged students

to come to the Ball in full costume, offering ideas like “battered soldier returning from the Crusades with a mysterious venereal disease”, “emaciated serf living hand to mouth while your liege grows richer”, and “pox-ridden English milkmaid”.

ICU continued the theme with the ticketing system, which saw three distinct packages on offer: the ‘Nobility’ tickets sold out in a mere 19 minutes. These tickets included benefits like the ability to choose the spouses of students who had opted for cheaper tickets, vast tracts of fertile countryside, and three free drinks tokens. The majority of students, however, will have to make do with the cheaper

‘fief’ ticket, which will not offer protection from the Black Death, and only come with a single drinks token, which must be used

“ICU offered costume ideas, such as ‘pox-ridden English milkmaid’ and ‘emaciated serf’”

for the Union’s remaining stores of Bud Light.

A Union representative spoke to *Felix* about the development of the plans:

“we thought long and hard about the theme for the Summer Ball this year. Initially we were debating between themes like ‘Roaring 20s’, ‘Carnival’, and ‘Hawaiian Luau’, but the suggestion of medieval feudalism came in at the last minute, and we all recognised its unique potential. We thought that after a long, difficult year of studying, and numerous rejected applications to FinTech internships, students would really appreciate a night where their position in society is completely fixed, and all they have to worry about is a lack of basic medicine or sanitation.”

Reaction from students was mixed. Alice, a third-year biology student, told

Felix that she thought the choice was “interesting”, but was concerned about historical accuracy: “the last themed party I went

“One student said years playing *Medieval II: Total War* had prepared him for the Ball”

to, people were way too anal about getting things right. The bar only served mead, and the bouncers chucked me out because

my wimple wasn’t from a 13th-century design.” Other students were more receptive: “I spent most of my teenage years inside alone playing *Medieval II: Total War*. Sometimes I would wonder whether I wouldn’t be better off going outside and making friends, but now all my experience will totally pay off. I’ll be able to spot an inaccurate wimple at 100-yards.”

Felix does not know how many tickets the Union has sold thus far, but they will be looking to beat the record for most popular Summer Ball ever, which was set during the 2014 Summer Ball, whose theme ‘Lower Back Pain’ was a surprise hit.

HANGMAN

negafelix@imperial.ac.uk

Physics students asked to “get better chat”

HANGMAN

Negafelix
Editor-in-Chief

An email was sent out this week to all physics students expressing concern over how unfunny all their jokes were.

Physics undergraduates were this week sent a mass email from departmental staff, asking them to have better chat.

The email, which was sent out late this Wednesday evening, was

co-signed by a number of senior staff within the Department of Physics and the Faculty of Natural Sciences. With the subject heading “We Need to Talk About Your Shit Chat”, the email gave several examples of what the authors described as “impossibly unfunny chat between students in the department.”

The message, whose recipients are believed to number around 1,500 students, offered a “gentle reminder” to students of departmental policy: “you are a representative of Imperial’s Department of Physics, and – as such – we expect you to refrain from homophobia, sexism, or laughing at

your own cringe jokes about quantum superposition.” They reminded students: “if you can’t say anything funny, don’t say anything at all.”

Felix spoke to the newly-appointed Vice-Provost (Chat Adjudicator), Oscar Wapping, who said that the “shit chat problem” had reached “epidemic proportions”: “Imperial is currently a world-leading centre for globally-recognised research, but unfortunately our students are lagging behind when it comes to saying things that are actually funny or interesting.”

College have begun an internal review to examine where improvements can be made, and will be



Source of 82% of Imperial’s shit chat // Imperial/Thomas Angus

offering new Horizons courses in comedy from October 2018. The course, which will be taught by a visiting lecturer from UCL, will include lectures like “If you make a joke in

the forest, and nobody is there to laugh, it’s because you’ve got no friends” and “When banter isn’t banter: a linguistic deconstruction of humour”. A representative from the

College told *Felix*: “we have high hopes for this new course, which should help improve Imperial’s standing nationally, since, let’s be honest, our chat is weak af.”



ARIES

This week you’re the *Felix* Editor, and you finally begin to understand how Instagram stories work (follow @feliximperial)



TAURUS

This week you’re outraged by the change of *The Guardian* from Berliner to Tabloid format. Feel like pure shit just want her back x



GEMINI

This week you’re already missing the free food and laundry services you had at home over Xmas. Only nine weeks until Easter!



CANCER

This week your exams are finished! Now you can stop having anxiety dreams about tests, and move on to anxiety dreams about your crushing loneliness.



LEO

This week you’re a chemistry student, and you consider faking your own death to get out of the imminent move to White City.



VIRGO

This week you channel your general sense of impending doom into something productive: the return of Union Council.



LIBRA

This week you get ID’ed when trying to purchase basil pesto. It’s a new low, even for you.



SCORPIO

This week you snap while queuing for your late-night, half-price Wasabi, and shove an entire onigiri down someone’s throat.



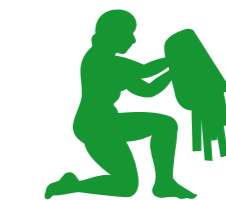
SAGITTARIUS

This week you’re upset that your suggestion of ‘DoTA 2 LAN Party’ was rejected as the Summer Ball theme.



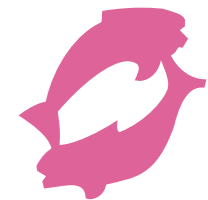
CAPRICORN

This week you’re the horoscopes writer, and you’re writing this on the tube as you’re trapped in District Line hell.



AQUARIUS

This week you realise we’re only two weeks into the new term, my god, how can you do this for another two months?!?



PISCES

This week you’re the Deputy President (Education), and you can’t wait for everyone to nominate their SACA nominations (Horoscope brought to you by Imperial College Union).

SPORTS

sport.felix@imperial.ac.uk

IC Cross Country and Athletics go on a Winter DorchesTour

Roman ruins, expensive kebabs, and an orangery on the South Coast.

SPORTS

Fergus Johnson

ICXCAC Secretary

It's January again, and to offset the misery of the darkest mornings of the year Imperial's Cross Country and Athletics Club once again had cunningly planned a weekend escape from the bustling capital to somewhere slightly quieter. Last year saw a minibus-load make the trek up North to Newcastle; this time it was decided to head down South.

The destination was set for Dorchester, the historic county town of Dorset and home to the club's notorious secretary – writer of numerous *Felix* articles detailing the club's exploits (including this one).

The journey should have been a breeze relative to 2017's winter trip to Tyneside, with an ETA of 21:00 after a relaxed leaving time of 18:00. However, nothing

is ever that simple.

With the crew all aboard one of the Union's relatively new, majestic Peugeot Boxers, our diligent drivers were completing their final safety checks when they realised that both brake lights were not working, and we could not get authorisation for another bus as the relevant authorities had gone home for the weekend.

This set in motion a series of (failed) attempts to remedy the problem before the drivers eventually resorted to calling the RAC (other breakdown companies are available), who fixed the problem in a matter of minutes after a two-hour wait. All this meant a departure time of 22:30 and the resulting clear roads meant the brakes were hardly needed for the two-hour journey down to the South Coast.

The problematic start to the tour did not dampen spirits, however, and the runners arose from their makeshift beds in 'the orangery' early on Saturday morning for the short drive to the

nearby five km parkrun in the seaside resort of Weymouth (known to local alcohol-fuelled teenagers as Wey-biza). The team posted a strong performance and the usual crowd were impressed by the standard and number of red and navy vests tearing along the gravel, mud, and tarmacked paths.

"The crowd were impressed by the standard and number of red and navy vests"

Following this success, the team took a short stroll to the beach where they ogled at wonders of the English Channel. Winds were high and waves were crashing but that did not prevent some members from venturing into the



Smiles all round: a successful weekend in Dorset // ICXCAC

rather chilly (freezing) waters for a "refreshing" dip.

Sensibly heading briskly back to the warmth of the minibus to avoid hypothermia, the squad headed back to base and proceeded to have a mighty brunch and yoga session (albeit not simultaneously), before settling down to watch one of the club's stars race on BBC One! Imperial's Chris Olley managed to battle home in 15th place in the Senior Men's International Challenge XC in Edinburgh beating last year's BUCS XC winner on the line.

Feeling newly inspired, the runners donned their running shoes once more – this time for a spot of "DorchesTourism" or to "Explorchester" (you can decide which Strava title is best). Some of the wondrous sights visited on the gentle jog around the town of 19,000 included a number of Roman artefacts including an amphitheatre, an excavated town house, and a trip down some famously straight Roman roads. A

Hardy few then travelled *Far from the Madding Crowd* to see the house of 20th century author Thomas Hardy (author of *Tess of the D'Urbervilles* and other works).

The team returned to the house exhausted, but there was little time for rest: some tasty fajitas were rustled up for dinner, energetic post-meal games were played, and then it was time to hit the town. Dorchester – not known for its nightlife – provided the weary students with reasonably priced alcohol and much merriment, as well as a DJ who seemed willing to take literally any requests and play them no questions asked. All this, combined with a dancefloor containing a wide range of odd locals, led to much amusement and fun was had by all.

On the way home, the team stopped off at the overpriced, monopolistic kebab shop to refuel after a busy day and settled down for a short sleep before the traditional Sunday long run the following day.

After the keenest athletes completed a quick

circumnavigation of the town, they returned and collected their slightly better-rested friends for a run out and around "Britain's finest Iron Age hill fort": Maiden Castle. To the disappointment of almost everyone, it soon became apparent that there is no actual castle at Maiden Castle and it is in fact just a hill. This took nothing away from the blissful fresh air and stunning countryside views on offer, however, and they completed many laps around the summit before returning home to shower, eat, and pack.

The return journey to London was (fortunately) far less eventful than the outward journey and the exhausted team cruised back to campus by 18:30 on Sunday evening.

Hopefully the runners will be fully recovered in time for team's next race on Wednesday for the LUCA XC League at Ally Pally – the hilliest (and muddiest?) so far. For more information about the club, email run@ic.ac.uk.



Ready, Steady, Go: the team gets in the zone before the Weymouth parkrun // ICXCAC

SPORTS

sport.felix@imperial.ac.uk

ICSWP Men's Water polo narrowly defeated in dying seconds

SPORTS

Samuel Hanrahan
ICSWP Captain

Tides are turning for ICSWP men's water polo. Last Saturday Imperial faced a strong University of West England (UWE) side. With Imperial and UWE at opposite ends of the league table, and Imperial missing several key players, UWE were firm favourites coming into the fixture, but Imperial came with an unflappable attitude.

Both sides began cautiously, with neither side wanting to give away easy goals and the focus very much on defence. The first quarter ended with UWE edging the match slightly, winning 3-2. As the second quarter progressed, Imperial's fears before the game were becoming a reality with UWE scoring several

goals without any response from Imperial. UWE's tactics were getting the better of Imperial, with chance after chance being created and being wasted with bad shots and worse decisions (editor's note: like a night in Metric). By half time Imperial were lucky to only be losing 7-3 after some excellent saves by the stand-in goalkeeper David Moores.

With the third quarter beginning, it was clear Imperial were not willing to give up and would fight to get themselves back into the game. This was led by captain Sam Hanrahan and vice-captain Ramon Fernandez-Mir scoring four goals between them in quick succession. There were some emotional celebrations from Ramon, and he dedicated his goals to Christina Duckworth.

As the final quarter began the situation looked bleak for Imperial with the score very much in UWE's favour and centre

back Gian Ameri majored out, no longer being able to take part in the game.

"Imperial continued to push and with just 15 seconds left on the clock Alberto Lauri scored bringing us level"

With only two minutes left to play UWE scored to go three goals into the lead, making any possibility of Imperial achieving a result seem near to impossible. However, Imperial had other ideas, once again showing their determination to get a result. Andrew Duckworth, still on a high after becoming



Speedos out for the bois // ICSWP Water polo

an Irish citizen only hours before the game, began the comeback scoring and bringing Imperial closer to UWE. This was continued when Leo Pashov, on his return from injury, scored. Imperial continued to push and with just 15 seconds left on the clock Alberto Lauri scored bringing us level. The fans went wild, this had to be it, Imperials first

points of the season.

Imperial went to press hard and allow no passes to be made as UWE had one last attack. They launched the ball up to their centre forward and with the rest of the team watching on in despair, he scored the winning goal with just 5 seconds left. What had looked to be one of sport's greatest ever comebacks faltered,

failed, and UWE won.

Despite the immediate deflation of such a loss, this was the best performance of the season for the team and it is important that the positives are taken from the game. Imperial will travel to Bristol on Saturday to face UWE again, they will bring the same steely-eyed determination to get the first W of the season.

PHOENIX

Imperial's arts magazine returns!

- We are interested in:
- Poetry
 - Prose
 - Photography
 - Fine arts
 - And more...

If you're interested, please email phoenix@imperial.ac.uk