

CIRCADIAN

New Year, New Me

TRACKING DOWN THE
COVID APP
BY AMAR SHUKLA

Q&A WITH
DR. ADWOA DANSO
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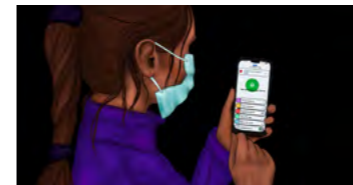


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INSIDE



- 4 *Our Team*
- 6 *Tracking Down the Covid App*
- 9 *Spilling the Beans on Caffeine*
- 10 *Q & A With Dr. Adwoa Danso*
- 12 *Freshers Freeze*
- 14 *Mind Over Matter*
- 15 *Why You Should Volunteer as a Student*
- 16 *Whitechapel Tour*
- 18 *Eat, Drink, Do*
- 21 *PM Pushes for Breech with Brussels*
Bamboozled By His Brilliance
- 22 *Sudoku*
- 23 *Crossword*
- 24 *Cartoonology*
- 25 *Next Issue*



EDITORIAL

Hello! We're excited to bring you our Freshers Issue for this year - New Year, New Me! In this issue, we try to welcome all our students to this upcoming academic year, and give you a taste of the sort of articles you can look forward to.

This is the second year of existence for Circadian Magazine here are Barts and The London and it's looking like it's going to be an interesting year at that. It's unlikely than anyone was expecting this academic year to look like this, however, if there's something Barts and The London has proven, it's that it has a habit of adapting and enduring.

As the times have changed, so too has this student community - through the changing local communities, domestic and international conflicts, and indeed previous pandemics. Fundamentally, we as BL students will always

be the first to change to support our fellow students when needed.

We've already seen so many examples of the student community going above and beyond to support incoming and current students through this period and that's something we hope to cover in more detail in the issues ahead, but if we can give one message to our new students right now, it's to get involved! University life is so much easier once you get involved in a student group and find yourself surrounded by older students, all of whom are keen to help however they can - so don't hesitate!

Before we sign off, we just wanted to go back to Circadian news - we've excited to have a new team of great writers, illustrators and editors on board who will hopefully propel us forward to the next level. Stay tuned!

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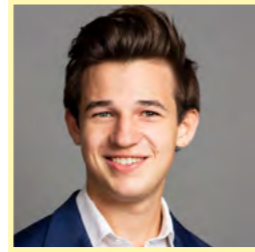
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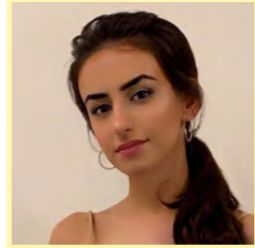
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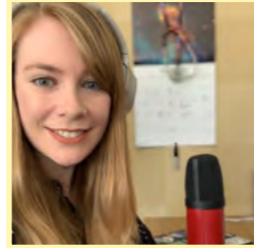
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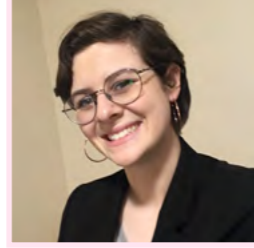
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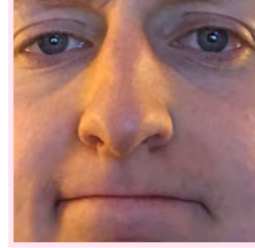
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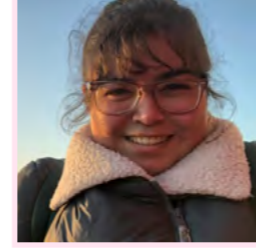
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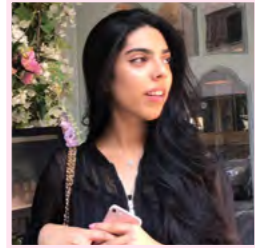
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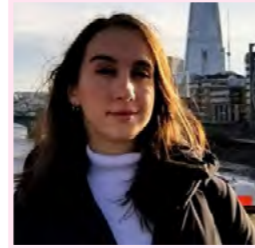
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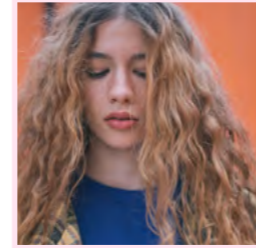
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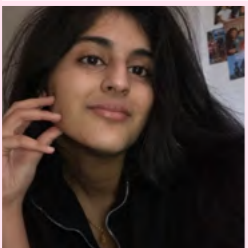
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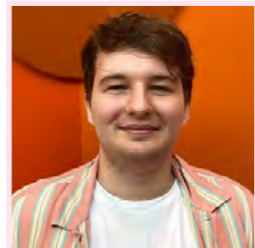
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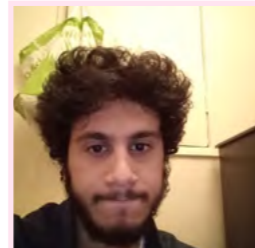
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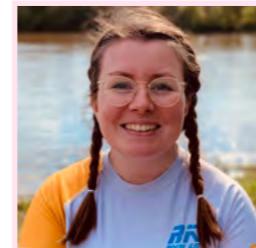
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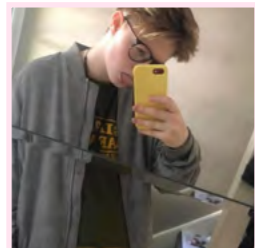
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SECTION EDITORS

TRACKING DOWN THE COVID APP

BY AMAR SHUKLA

GOVERNMENT CONFUSION

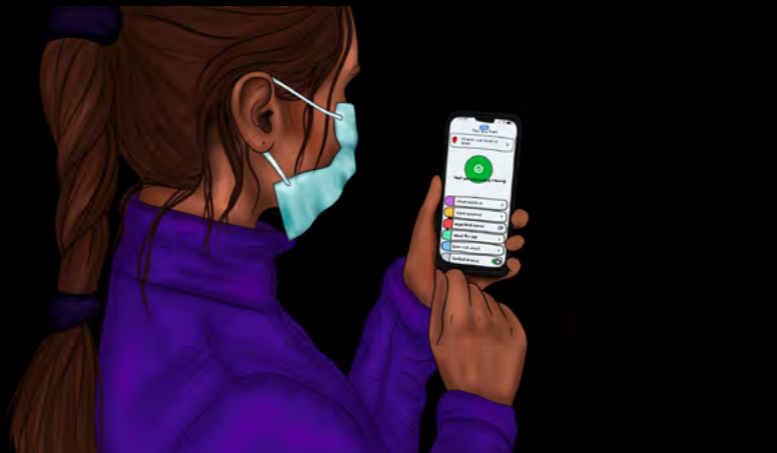
At the height of lockdown way back in April, we were promised a contact tracing smartphone app that would help us fight against coronavirus and emerge from lockdown safely. Now 5 months (and a growing second wave) later, we're at last being delivered an app.

During the interim, we've heard on the news about some flip-flopping between a 'centralised' and 'decentralised' system, one of which might be better for privacy, and one for epidemiological insights. There was total silence on when it might be publicly available; while the (implied unsafe) emergence steadily continued, nonetheless. Finally, the day that this will be published in print, the app will see its first light.

So, what gives? Is the long-awaited app going to actually save any lives, or is it too late for that?

MANUAL CONTACT TRACING

We already have models of contact tracing systems used for diseases such as HIV, TB and some STIs. This involves identifying an index case (someone with the disease), and interviewing them to learn about their recent movements and people they may have come into contact with. For example with STIs, this involves recent sexual partners. For a respiratory disease like COVID-19, this involves people who have been exposed to places the index case has spent prolonged time in, such as those at home, in restaurants and shops, and on public transport. Once identified, the contacts may be diagnosed, given prophylaxis, or asked to self-isolate, depending on what is appropriate for the disease. COVID-19's extremely high rate of pre-/asymptomatic transmission makes efficient contact tracing vital.



THE NEED FOR INSTANT TRACING

A paper published by the Oxford Big Data Institute in March showed that for a disease like COVID-19 with high pre-/asymptomatic transmission, a manual contact tracing system is too slow to shrink an epidemic without lockdown measures.

Since NHS England launched its Test & Trace (T&T) service on 28th May (already a costly delay: almost 3/4 of the total infections to date had already occurred by then), less than 40% of test results were received in under 24h. In order for this to be sufficient, almost 3/4 of the contacts would need to be successfully quarantined within 24h of the index case's symptoms. The published data does not show how long it took to refer cases to T&T, but barely half of "non-complex" contacts were asked to self-isolate within 24h of this referral.

Many of these delays in reaching index cases: referring them to T&T, identifying close contacts, and asking them to self-isolate, are totally avoidable with the use of a smartphone app, where contact tracing can be done instantly upon receiving a positive test result.

Not to mention, an automated app also allows the tracing of those who cannot be traced with traditional interviewing (on public transport etc). What's more, it has the potential to do this with even more privacy than the traditional interviewing method.

HOW A SMARTPHONE APP PERFORMS INSTANT CONTACT TRACING

The basic premise of a contact tracing app is outlined in the same Oxford Big Data paper from March, and I have used their diagram in Fig 1 to illustrate:

- An app downloaded to several individuals' phones monitors their proximity to each other using Bluetooth Low Energy (BLE), a technology available on about 90% of mobile phones in the UK.
- A unique, pseudo-randomly (as far as any non-mathematicians are concerned, that's the same as random) generated key is generated by person A's device at regular intervals (say, every 15 minutes), and broadcast to nearby devices with the same app installed, who receive nothing but the 'gibberish' key, and the duration for which they were in close proximity with the device broadcasting it.
- Person A later develops symptoms, and orders a home test through the app. Later that day they test positive and notify their app. This instantly sends a signal to other devices, and those devices which were in close proximity with the infected individual for a significant length of time will notify their users with a high or medium risk score, with instructions on what to do next. This occurs by one of two methods: either a 'centralised' or 'decentralised' system.

- In both systems, all of the unique keys that Person A has been broadcasting for the last few days will be flagged, and the BLE signal strength (a proxy for proximity) and the duration of this signal are used to calculate a risk score for other app users.
- In a centralised system, this risk score is calculated on a central server, meaning that other potentially identifiable data such as location is capable of being stored and decrypted.
- Whereas in a decentralised system, this all happens locally at the device level; each device regularly checks to see if they have come into contact with the flagged keys. The "key" point here is: nobody has any way of identifying who has met whom (not even the local device), and all the central server has access to are the 'gibberish' keys. There is, by design, nothing identifiable about them.

WHERE THE GOVERNMENT'S SMARTPHONE APP STRATEGY WENT WRONG

On 27th April the UK government rejected a collaborative, decentralised, solution by Apple and Google (heavily influenced by an international open source protocol, DP3T), in favour of a native centralised model. Within a week, a beta version of this app was running and ready to be tested in the Isle of Wight (IoW). Over a month later, they announced a U-Turn deciding to instead test a new app incorporating the Apple/Google framework, only just beginning testing in IoW and Newham on about 28th August. Finally, on the 11th September, a full-scale app was announced, launching in England and Wales on 24th September.

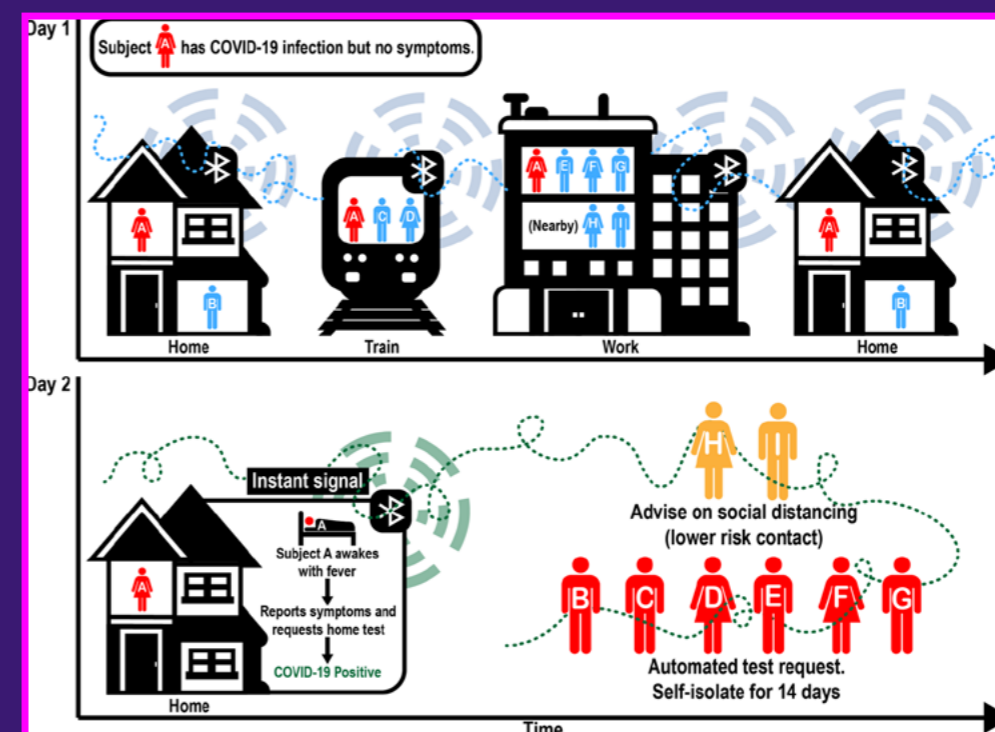


Fig 1. Illustration of a generic mobile device contact tracing application using Bluetooth Low Energy, notifying potential contacts instantly. (Adapted from doi.org/10.1126/science.abb6936)

The original IoW app saw some success, reducing the reproduction rate R from about 1 to 0.25 in mid-May (despite users being unable to input a positive test result). This rose again to 0.75 in June though, which could have been because only 4% of iOS users were actually detectable by the app. This is because iOS does not allow 3rd party apps to use its BLE in the background without the support of Apple's framework.

In addition, there are concerns raised by an international community of developers about "mission creep" of centralised apps. By storing some location data centrally, the government claims that epidemiological insights can be gained into viral hotspots. As the DP3T White Paper notes, though, now is not the time to conflate the aim of a safe return to 'normal' life with these insights, which cannot be well obtained from a technology which uses Bluetooth signal strength as a proxy for viral transmission anyway. Storing more data than is needed allows the possibility of government surveillance, which undoubtedly hampers trust and probably contributed to low uptake in countries like Singapore and Norway.

After much digging, it appears that after aiming on the 18th June to 'bring together work' done by Apple/Google, the government finally confirmed that the new app will in fact be using this decentralised framework, with "data remaining only on your phone".



During the several months of app testing, the government remained concerned that the Bluetooth technology in the Apple/Google API does not allow for quite as accurate proximity tracing as the version developed in May (a distance of 4m might produce a stronger signal than 3m, for example), and for this reason they continued to trial whether this can be improved.

My question is: are not a few extra false positive contacts who have to self-isolate a tiny price to pay in comparison to the thousands of lives that could have been saved with a working app since early May; and as is now apparent, the prevention of a viral resurgence? Or the ability of the public to see their loved ones safely without worrying about making each other unwell? Or the recovery of the economy with all sectors able to carry out close-to-normal functions?

The height of the pandemic is not the time to be continuing trials or pursuing a centralised model, which is also unsuitable for a time when international travel has resumed; cross-border identity keys will be incompatible with a native app.

The government's delay in delivering this app, an invaluable tool within easy reach since April, demonstrates a negligence of good sense. Their obtuseness in informing the public about their decision making only serves to further erode trust and make people less likely to use the app even now that it has finally surfaced nationally.

Yes, there are certainly political concerns with allowing a corporate monopoly (or, duopoly of Apple/Google in this case) to rule which apps get to be part of a public health effort; but right now, the government's number one concern is ensuring the safety of the public and the safe recovery of the economy – corporate policy can wait.

In the past few weeks we have seen the viral incidence rise to levels similar to early April – the first-hand effects of our unsafe emergence from lockdown. With the government threatening another national lockdown, slathering on the rhetoric in blaming the public's poor compliance with (somewhat ambiguous) rules for social contact, we hear no responsibility taken for a totally inadequate test and trace system. It is just one of many setbacks that has contributed to the UK suffering the most deaths from COVID-19 of any country in Europe.

FOR MORE INFORMATION

[HTTPS://CORONAVIRUS.DATA.GOV.UK/](https://coronavirus.data.gov.uk/)

[HTTPS://WWW.COVID19.NHS.UK/](https://www.covid19.nhs.uk/)

[HTTPS://WWW.GOV.UK/GOVERNMENT/COLLECTIONS/NHS-TEST-AND-TRACE-STATISTICS-ENGLAND-WEEKLY-REPORTS](https://www.gov.uk/government/collections/nhs-test-and-trace-statistics-england-weekly-reports)

Spilling The Beans on CAFFEINE

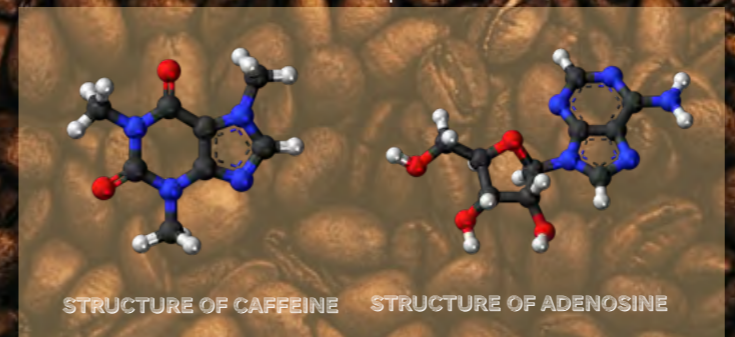
BY AREEN WAZIR

From the French Emperor, Napoleon Bonaparte, who declared "I would rather suffer with coffee than be senseless"; To the American-British poet, T.S. Eliot, who said "I have measured out my life with coffee spoons"; To the American TV host, David Letterman, who proclaimed "if it wasn't for coffee, I'd have no identifiable personality whatsoever". It is evident that humanity's indulgence and perhaps reliance on caffeine stretches back across the ages.

It's no surprise that on university campuses, caffeine is a major part of students' lives. Market research by the Beverage Marketing Corporation has shown that coffee is the most popular late-night study aid and an early morning eye opener on campus. However, whether it's tea, energy drinks or coffee; students inevitably consume caffeinated drinks frequently. In an anonymous survey given to US college students from five geographically dispersed US universities, 92% of the students claimed to consume caffeine and 79% said 'to feel awake' as their justification for consuming caffeinated drinks. In another survey administered to 300 freshmen at a south eastern US university, 83% reported having at least one sign/symptom of caffeine intoxication [1]. So, before indulging in a fifth cup of our favourite caffeinated beverage of the day, let us delve into the neuropharmacology behind caffeine, and whether it can cause more harm than good.

C a f f e i n e (1,3,7-trimethylxanthine) is a plant alkaloid with a chemical structure of C₈H₁₀N₄O₂ and is the most widely used CNS stimulant in the world. Caffeine's elimination half-life ranges from 1.5 - 9.5 hours; this wide range is due to innate individual variation and environmental characteristics that influence caffeine metabolism e.g. obesity, smoking, pregnancy.

The main mechanism of action of caffeine is its ability to inhibit adenosine receptors. These receptors have an important effect on cognitive function and behaviour. Neurons break down adenosine triphosphate for energy. One of the resulting breakdown products is adenosine. Hence, as the brain uses up more energy, the concentration of adenosine increases inside the neurons. These adenosine molecules leave the neurons and bind to adenosine receptors leading to drowsiness. This mechanism is important as high adenosine levels indicate prolonged high levels of activity, and therefore, the need to rest. If adenosine activates A1 receptors present on wake stimulating neurons, those neurons, in turn, become less active, however, if adenosine activates A2A receptors present on sleep promoting neurons, those become more active. The effects of adenosine binding to both these receptors together promotes sleepiness. During sleep, the brain replenishes its energy reserves and adenosine levels drop. Eventually there's insufficient adenosine levels to activate the adenosine receptors so you wake up feeling refreshed. The similar structure of caffeine to adenosine allows caffeine to act as a competitive antagonist. Since adenosine and caffeine aren't exactly identical, caffeine cannot activate adenosine receptors.



Instead it acts to block and prevent binding of adenosine to its respective receptors. Therefore, if adenosine is unable to bind to adenosine receptors, the brain will remain active and a person will feel more awake.

Another possible mechanism of action of caffeine is its ability to inhibit phosphodiesterase enzymes in skeletal muscle and adipose tissue. This would explain for caffeine's cardio stimulatory and anti-asthmatic actions. Inhibition of phosphodiesterase increases intracellular concentration of cyclic adenosine monophosphate (cAMP). These actions promote lipolysis via activation of hormone sensitive lipases and lead to an increase in blood catecholamines. Some catecholamines induce physiological changes: increasing heart rate, blood pressure and blood glucose.

Numerous medical studies have been carried out to determine the benefits and drawbacks of coffee. A 2011 paper by the European Food Safety Authority claims that coffee improves cognitive function by increasing alertness. This study reviewed 22 randomised double-blind placebo-controlled trials of the effects of caffeine on attention. Overall, there was a cause and effect relationship between a 75mg caffeine (1 regular cup) and increased selective attention, sustained attention and alertness [3].

A study done by John Hopkins University in 2014 concluded that coffee enhanced consolidation of long-term memory in humans. A double-blind placebo controlled randomised trial was carried out. 160 students were given caffeine or placebo after learning a list of words and were tested 24 hours later. They found that at least 200mg of coffee is needed to observe the enhancing effect on consolidation of memory.

Coffee consumption is also negatively correlated with some long-term health problems such as Alzheimer's, Parkinson's, type 2 diabetes and cancer. A 2018 study showed a statistically significant inverse correlation between coffee consumption and development of type 2 diabetes. A meta-analysis was carried out that analysed 1 million people. They concluded that the risk of type 2 diabetes decreased by 6% for each cup per day in coffee consumption.

Furthermore, a 2010 study of 1409 individuals aged between 65-79 examined them over a 21-year period. It showed coffee consumption in midlife reduced the risk of developing Alzheimer's disease and dementia in the elderly with a 65% reduced risk in groups that had between 3-5 cups of coffee per day.

Conversely, too much coffee can cause anxiety, restlessness and agitation. There is also evidence that consuming a lot of caffeine late in the day can negatively impact quality of sleep. A 2013 study explored the effects of caffeine if consumed 0, 3 or 6 hours before going to bed. Researchers gave a 400mg dose of caffeine or a placebo to volunteers at varying times before bed. Consuming caffeine 6 hours, 3 hours or even just before going to sleep was found to have had a detrimental impact on quality of sleep. Based on the results of these studies, one should avoid consuming caffeine at least 7 hours before bedtime.

It is apparent that caffeine, and in turn coffee, possesses numerous benefits. However consuming caffeine excessively can lead to health issues. Current NHS guidelines recommend drinking no more than around 4 cups of coffee per day for a healthy adult; equivalent to 400mg of caffeine [8]. It is necessary to strike a balance to ensure you are reaping the benefits of coffee but not suffering from its consequences. As 19th century British Prime Minister Benjamin Disraeli said, "The choicest pleasures in life lie within the ring of moderation."

There is no question that 2020 has been a big year for Global Health. However, this isn't just because of COVID-19. The Black Lives Matter protests that began after the murder of George Floyd in May 2020 were the largest protests in United States history and led to many conversations on how structural racism impacts Black lives, including their health.

Our guest in today's interview is Dr. Adwoa Danso. Dr. Danso is a GP and runs The Clinic Diaries – a social media platform that discusses health and clinical issues, and where she has recently been using this space to be vocal on BLM and COVID-19. Dr. Danso is also the Executive Officer of the Ghana Doctors and Dentists Association UK as well as being the resident doctor hosting 'The Medical Show' on GN Radio, a radio station for Britain's Ghanaian community, and she is also a graduate of Barts and The London School of Medicine and Dentistry.

We sat down with Dr. Danso to reflect on the past few months, and her experiences in the NHS and at Barts and The London.

Do you think racism is a public health crisis?

Health inequalities have existed for several decades and are well known to negatively impact health. However, when we look more closely at the causes we come back to racism. Housing, the criminal justice, health systems and much more are all built on the structures of racism.

Why do you think more people from BAME backgrounds are dying of coronavirus? - Follow Up - Is this the reason why a majority of the healthcare workers that unfortunately died from coronavirus were also from BAME backgrounds?

There are many different reasons why these groups are more at risk. The report 'Beyond the data: Understanding the impact of COVID-19 on BAME groups' goes some way to exploring these reasons. A significant number of NHS workers are of BAME origin and as a result have greater exposure than the general population. There are other reasons including socioeconomic and pre-existing conditions such as diabetes and hypertension which are more prevalent in these populations.

There are more serious factors including racial bias and institutional racism. We know that BAME individuals within the NHS are less likely to be promoted compared with their white counterparts. This may affect pay, so in

order to make the equivalent pay, one may choose to work longer hours and undertake less desirable shifts such as those during unsociable hours.

The BMA identified that BAME groups are twice as likely not to complain about safety in the workplace. Reasons for this can include fear of being disciplined. During this pandemic we are aware of reported issues surrounding PPE. BAME workers may find it challenging to speak out. Bullying and harassment are unfortunately relatively high within this group.

A study of Black women in the US found that stress from frequent racist encounters was associated with chronic low-grade inflammation, are there any other ways racism clinically impacts Black women?

There are other studies which have looked at pain perception of Black people. A study in the US, found that half of first and second year medical students believed Black people had thicker skin than white people and perceived that Black people experienced less pain than white people. I strongly suspect that this may be a contributing factor in more recent studies in the UK. We have recently seen that Black women are five times more likely to die in childbirth compared to their white counterparts. It is these statistics and studies that go some way in cementing the distrust of the health system that already exist in some of these communities.

What should the NHS do to reduce structural racism within their hospitals?

We need to create an environment where NHS workers and users are able to raise concerns freely without fear of being reprimanded or targeted. We must ensure that those in senior and educational positions know how to respond to grievances in a sensitive appropriate manner and not be dismissive. A diverse workforce is essential in order to provide the best care.

Have you experienced any racism working as a GP in the UK?

Sadly as a GP I have experienced racism within the NHS, both overt racism and more subtle micro-aggressions. I had experienced racism from patients but more worryingly early on as a doctor I had been trained and worked with overtly racist clinicians. We must first accept that racism exists within the NHS before we can start to dismantle structural racism.

How can healthcare professionals be an ally to their Black colleagues within the NHS?

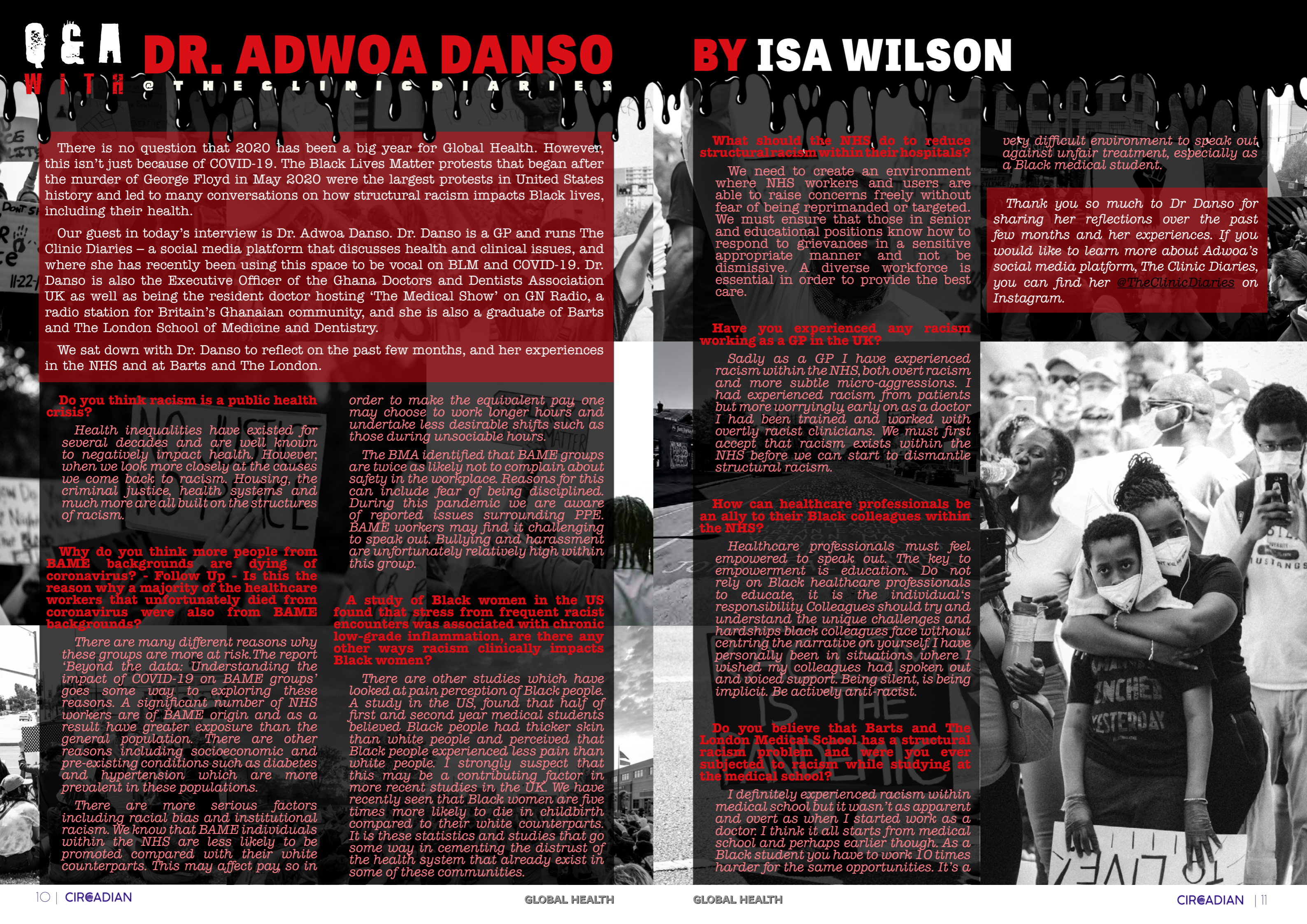
Healthcare professionals must feel empowered to speak out. The key to empowerment is education. Do not rely on Black healthcare professionals to educate, it is the individual's responsibility. Colleagues should try and understand the unique challenges and hardships black colleagues face without centring the narrative on yourself. I have personally been in situations where I wished my colleagues had spoken out and voiced support. Being silent, is being implicit. Be actively anti-racist.

Do you believe that Barts and The London Medical School has a structural racism problem and were you ever subjected to racism while studying at the medical school?

I definitely experienced racism within medical school but it wasn't as apparent and overt as when I started work as a doctor. I think it all starts from medical school and perhaps earlier though. As a Black student you have to work 10 times harder for the same opportunities. It's a

very difficult environment to speak out against unfair treatment, especially as a Black medical student.

Thank you so much to Dr Danso for sharing her reflections over the past few months and her experiences. If you would like to learn more about Adwoa's social media platform, The Clinic Diaries, you can find her @TheClinicDiaries on Instagram.



FRESHERS FREEZE

BY NESRIN GORGUN



UNPRECEDENTED TIMES CALL FOR UNPRECEDENTED MEASURES.

A sentence way too familiar now with the pandemic measures sweeping around the globe, COVID-19 news being bombarded onto us by every means of communication possible. Scarily, we now live in a world where news (censored or uncensored) is spreading at a much faster rate than the disease itself. Yet, not to worry, what I am referring to is a way more personal affair, one that each and every one of us experience more often than we would have liked to.

Anyone who has ever sweated over an exam or a looming deadline knows what stress feels like.

CHAOS.

SHEER PANIC.

Time and space disentangle, and cortical executive functions dissolve away with surging levels of adrenaline and cortisol. Everything freezes. "Freshers Freeze", may be an even more common occurrence than the infamous "Freshers Flu".

LET US FACE IT. LIFE AS A FRESHER CAN BE REMARKABLY HAZARDOUS.

There is a constant background anxiety stemming from the unfamiliar "Am I fitting in? What? Where? Whoops, is the exam actually next week?", which makes anyone more susceptible to a crisis mode even at the verge of the slightest hint of emergency. In response, the human brain can behave in a way that appears momentarily rational but may in fact be disastrous. Diving deeper into our thought processes may minimise the unknown and help us stay more rational in the face of an immediate problem.

Briefly, we can think of the human brain as a tripartite structure:

The brainstem is structurally reminiscent of the reptilian brain and it plays a crucial role in controlling the fight, freeze or flight response when confronted with a crisis.

The limbic system is located in the mid-region of the brain. It is the prime driver of our emotional

reactions and as such functions, much like in the brains of other mammals.

Lastly, residing in the frontal region of the brain is the neocortex, which is the most evolved part of the cerebral cortex and mediates higher-order functions that we associate with being human, such as cognition, language, spatial reasoning and logic.

When stress hits us, the cerebral cortex can be emotionally hijacked by the more primordial limbic system or the brain stem. What this means is our behaviour is now a product of an unfiltered, instinctive control mechanism. An emotional mayhem at the least desirable moment. Basic brain functionality is severely disrupted; attention span is non-existent and learning and memory are severed. It is almost as if your brain is on autopilot with your mind repeatedly screaming 'red alert'.

So, what do we do? Sit there and watch the automatic control take us to whichever destination?

HELL NO!

Good news is you can consciously choose to help yourself through this – whatever "this" may be – believe it or not our brainpower is more capable than we think. The key is to let the neocortex get back on duty and dictate action control under conscious awareness. Mindfulness helps dampen the actions of the limbic system. When you are training to be mindful, what you are actually doing is letting your neocortex communicate with and reorganise the remaining parts of your brain. You switch to a calmer state of rational thinking.

Whatever happens next acts as an unforeseen opportunity to reinforce growth and learning. By learning to silence certain parts of your brain, you reroute back to the anti-anxiety pathways. In other words, you have a say in how you respond to a situation rather than a mere knee-jerk reaction. No, how you rewire your thought patterns may not really change the circumstances out there but yes, it does change the way you experience them.

Unprecedented encounters do call for unprecedented responses.

AND THE HUMAN BRAIN IS NO EXCEPTION.

MIND OVER MATTER

BY SIRAJ ABUALNAJA

What does it mean to prioritise our mental and physical well-being? Frankly, not many of us understand what that means. Throughout our time at university, we are continually bombarded with pamphlets, lectures, and workshops highlighting the importance of prioritising the health of our mind and body over everything else. After all, what kind of doctors would we be if we didn't? However, medical school is a long and arduous journey. At times, our studies, sports, and society commitments demand the driver's seat while our mental and physical well-being are thrown to the rear-seat. As a fresher starting, here are a few ways you can establish a routine that will ensure that your sanity and fitness remain a top priority.

Mental health is a topic that we have all come across. Our parents, lecturers, teachers, and friends constantly remind us of its importance. One very popular method that is recommended to all students entering university is meditation. It may seem like an outdated technique, but studies published by the American Psychological Association have shown that meditating over a long period (>5 years) presented with fewer anxiety- and depression- related symptoms. While several studies are unclear about its immediate impact, meditating for 5-10 minutes every day may help in the organization of thoughts, reflections, and induce calming sensations. Yet others suggest exercise is a more effective way to promote mindfulness and relaxation.

For many of us, exercising will release endorphins that interact with certain receptors in our brains that can reduce our perception of pain, both physical and mental. Additionally, endorphins trigger a positive sensation in our bodies, similar to the biochemical action of morphine. Unlike morphine however, exercise can be easily integrated into our lives. Going for runs, buying a membership to a nearby gym, or even joining one of our sports societies that Bart's has to offer (e.g. Bart's Tennis Club) are all easy and fun ways to stay in shape. Nevertheless, it is important to know your limits. As you progress through university, exercising, society commitments, and studying all take turns in priority. That is why communication with others and even yourself, is arguably the most important thing in ensuring your mental and physical well-being.

If you ever feel that your course is becoming too much to handle or aspects of your personal life have taken a toll on you, speak to someone about it. Speak to a close friend, a family member, or to a friendly face at the Advice and Counselling Service (<https://www.welfare.qmul.ac.uk/>). Numerous articles and studies published by The Journal of Psychology strongly suggest that communication is an effective first step towards leading a healthier and happier life. Establishing routines is a critical step towards prioritising our mental and physical well-being. The first year at university always seems like a daunting one, but with the right support, it can end up as being the best year of your life!

WHY YOU SHOULD VOLUNTEER AS A STUDENT

BY FAVOUR ONWUDIWE AND HALEEMA RABEEA

FAVOUR ONWUDIWE AND HALEEMA RABEEA ARE CO-PRESIDENTS OF BARTS COMMUNITY SMILES, A VOLUNTEERING GROUP BASED AT BARTS AND THE LONDON. YOU CAN FIND OUT MORE ABOUT WHAT THEY DO AND HOW TO JOIN BCS ON THIS [LINK](#).

CONGRATULATIONS

TO ALL OUR NEW

INCOMING BARTS AND THE LONDON

STUDENTS, WE LOOK FORWARD TO WELCOMING

YOU! AS A FRESHER, YOU MUST BE EXCITED TO EMBARK

ON YOUR JOURNEY AS A STUDENT HERE. ENTERING A NEW ENVIRONMENT

COMES WITH A PLETHORA OF NEW OPPORTUNITIES, ONE OF WHICH IS VOLUNTEERING.

OUR PERSONAL EXPERIENCES

BEFORE JOINING UNIVERSITY, WE BOTH VOLUNTEERED IN OUR LOCAL COMMUNITIES AND FOUND THE EXPERIENCES TO BE REWARDING. THE SENSE OF GIVING BACK TO THE COMMUNITY ENCOURAGED US TO CARRY ON VOLUNTEERING ONCE WE JOINED UNIVERSITY. WE PARTICIPATED IN VOLUNTEERING EXPERIENCES BOTH OUTSIDE AND AT UNIVERSITY AS PART OF QMSU OR WITH STUDENT-LED VOLUNTEERING GROUPS. THERE REALLY ARE MANY OPPORTUNITIES AVAILABLE FOR YOU AS A STUDENT! AS OUR TIME AT UNIVERSITY WENT BY, WE GOT MORE INVOLVED WITH STUDENT-LED VOLUNTEERING GROUPS BY JOINING THEIR COMMITTEES AND BECOMING REGULAR VOLUNTEERS. BEING A REGULAR VOLUNTEER IS EXCITING AS YOU GET A CHANCE TO PITCH YOUR IDEAS AND FEEDBACK ON HOW YOU WOULD LIKE THE ACTIVITIES TO RUN.

ENGAGING WITH THE COMMUNITY

VOLUNTEERING GAVE US THE OPPORTUNITY TO MEET MEMBERS OF THE COMMUNITY, OTHER VOLUNTEERS AND PROFESSIONALS TOO! MEETING OTHER STUDENT VOLUNTEERS WILL GIVE YOU A CHANCE TO MAKE NEW FRIENDS FROM OUTSIDE YOUR COURSE AND YEAR GROUP. AS HEALTHCARE PROFESSIONALS, ENGAGING WITH THE COMMUNITY IS AN INTEGRAL PART OF YOUR EXPERIENCE. FOR EXAMPLE, IF YOU VOLUNTEER WITH TEDDY BEAR HOSPITAL, YOU WILL

GET TO INTERACT WITH CHILDREN WHICH WILL BE INVALUABLE TO YOUR CAREER AS IT WILL DEVELOP YOUR COMMUNICATION SKILLS WHEN DEALING WITH YOUR OWN PAEDIATRIC PATIENTS.

SOCIAL RESPONSIBILITY

ONE OF THE VERY FIRST THINGS YOU LEARN AS A STUDENT HERE IS SOCIAL RESPONSIBILITY. THIS IN ESSENCE MEANS CONTRIBUTING TO YOUR LOCAL COMMUNITY BY OFFERING YOUR SKILLS AND TIME, AND ONE WAY OF DOING SO IS BY VOLUNTEERING. FOR EXAMPLE, TOOTH DECAY REMAINS A SERIOUS PROBLEM IN OUR LOCAL COMMUNITY WITH TOWER HAMLETS BEING ONE OF THE WORST BOROUGHES IN LONDON FOR TOOTH DECAY AND WELL ABOVE THE NATIONAL AVERAGE. YET TOOTH DECAY IS A LARGELY PREVENTABLE PROBLEM. DENTAL STUDENTS, WHO HAVE THE SKILLS TO DELIVER ORAL HYGIENE ADVICE CAN HELP IN EDUCATING THE LOCAL COMMUNITY BY VOLUNTEERING.

YOU CAN LEARN MORE ABOUT THE VOLUNTEERING OPPORTUNITIES AVAILABLE TO YOU BY VISITING THE QMSU WEBSITE OR SPEAKING VOLUNTEERING GROUPS AT FRESHERS FAIR OR THE BIG VOLUNTEERING EVENT. WITH A WIDE RANGE OF VOLUNTEERING OPPORTUNITIES AND GROUPS, WE ARE CERTAIN YOU WILL FIND ONE THAT WILL BE OF INTEREST TO YOU!

WHITECHAPEL TOUR

BY REBECCA WALKER

MEDICS, DENTISTS AND ALLIED COURSE FRESHERS! LEND US YOUR EYES AS WE WELCOME YOU TO OUR HUMBLE ABODE FOUND IN THE HEART OF WHITECHAPEL. ALTHOUGH SOME TEACHING MAY BE BASED ON OTHER CAMPUSES (NOTABLY CHARTERHOUSE SQUARE DOWN IN BARBICAN OR MILE END), OUR BELOVED WHITECHAPEL CAMPUS IS YOUR MAIN HOME FOR THE FORESEEABLE FUTURE; UP TO 6 YEARS FOR SOME OF YOU MEDICSI THEREFORE, WE WOULD LIKE TO TAKE SOME TIME TO INTRODUCE YOU TO SOME OF THE MORE NOTORIOUS "LANDMARKS" OF BARTS AND THE LONDON THAT WE ARE SURE YOU WILL BECOME VERY FAMILIAR WITH DURING THE COURSE OF YOUR STINT AS A BL STUDENT.



1 ROYAL LONDON HOSPITAL

You really can't miss this shining blue tower which is the hospital! The Royal London, boasting 16 busy floors and two unspoken of ghost floors that were never finished (14 and 15 for those curious), is always bustling with activity.

It's also no coincidence that our very own student bar, The Griff, is but a stone throw away from the A&E here, which can be oddly reassuring on a Wednesday sports night. You also may notice a rustling noise coming from above once in a while, where you will spot the infamous red helicopter leaving the helipad ready for action.

2 GARROD BUILDING

Unassuming from the outside, the Garrod is the gift that keeps on giving. Here you can find Beigel Bunnies, which serves delicious hot food and coffee at surprisingly reasonable prices for London. You can also find endless empty rooms with great Wifi connections. Many weary students come here to revise in peace or stream a movie. It's also not unheard of to catch a quick nap before PBL starts...

3 LIBRARY

Converted from a church, the library is undoubtedly beautiful. This makes it a hotspot amongst many students particularly during the dreaded exam season. The downside of this however, is that the average length of wait time for a seat can be anything from thirty seconds to three years. The silence imposed on the majority of the library does inspire productivity for about five minutes until your desk neighbour decides to start noisily munching on a bag of ready salted crisps. Or alternatively, you spot a friend and choose to abandon all pretenses of getting through that to-do list of yours.

4 THE GRIFF INN

Here is the place to grab a pint, some curly fries, and relax with some friends. This is also the place to unwind after an ICA, where you'll get some special drink and food deals and forget all about your exam slip ups! On a Wednesday night, all the sports teams traditionally unite for weekly Tables. This night is a memorable one; one full of Barts pride and spirit. (On another note, have you noticed the pun with the name of this place? If you haven't yet, just refer to your new school's logo.)

9 TO MILE END

Anatomy and physiology classes would usually happen in labs at Mile End. Mile End, that's nearby, right? We can walk that, right? In the wise words of David Bowie in Labyrinth "it's further than you think".

5 PERRIN LECTURE THEATRE

Just when you thought you'd left plants behind in A-level biology, they come back to haunt you... It's plants vs. sleepy students in this very very obnoxiously green room. This is where most of your lectures would take place. Legend has it, those who sit in the cursed red seats will get picked on by the lecturer, yet I admit I have never witnessed it myself.

Just outside the lecture theatre is the newest addition to our campus, the 'Neuron Pod', more commonly known as the Hedgehog for it's very undeniable rusty hedgehog-like appearance.

6 FLOYER HOUSE

Ah, Floyer. Such sweet memories of waking up 2 minutes before the lecture started and scrambling over to Perrin. You'll feel even more smug when the students living at Dawson roll up 15 minutes late and sweaty because the Hammersmith and City line has claimed yet more victims. You'll begin to notice this friendly rivalry between Dawson and Floyer pretty quickly. Why we feel so protective over our university halls is still unknown, yet we shall continue to fight our corner nonetheless!

7 LAIRD HALL

Home to the greatest productions and shows you ever did see! The talent of the Barts community is shown through comedic sketches, amazing dances and hilarious competitions from the combined efforts of BL Drama, Dance and RAG. It is full of heckling and has the finest talent you will come across. With a beverage in your hand, and a show-stopping performance before you, there is no place you would rather be.

8 WHITECHAPEL TUBE STATION

You will soon come to realise that the H and C line is not as reliable as the London underground may seem. A suggestion for using that pink line for your journeys away from East London? Avoid it at all costs, it's not coming I'm afraid.

I would advise you to hop on that green line if you are on your way to Whitechapel, or even enjoy a stroll through the city if you have a bit more time on your hands. The District line may be slow but she is reliable and will promise you the scenic route. (However saying this, we do seem to have this concept of 'Barts time' here, where everyone is a tad late anyway, so pick whichever line you fancy!)

BY ARTCHUTHAN ARUTSOHY

EAT, DRINK, DO

Uni has just started and you're walking through campus. For a lot of you, that means new area, new people and new activities. But this year is like no other. We've come fresh out of quarantine and honestly, no one really has a clue of what to expect. Wild rumours will circulate and the guy down the hall is insisting that there's secret parties being held down the street. Much of the usual events (i.e. Fresher's Fayre) will shift onto an online medium. It's not the best news as a fresher we know, but that's why we've collated the best of Barts and beyond into this guide for you. It's pandemic friendly meaning you won't turn up to locked doors and hopefully you still get to make the most out of living in the heart of East London.

JUST DOWN THE ROAD

Are you bored out of your mind on your lonesome or with a friend? Luckily, our location's quite popular and even if it's well past 11pm, **Mile End Snooker Club** is calling your name. Booking a table is pretty simple and if you end up paying a few visits, you might want to get your money's worth and get a membership (only £6 for a year might I add). A worthy investment if pool or snooker is your thing or if you want to pick up a new hobby during ungodly hours (this club stays open till 4am or bam on a Friday and Saturday).



If you are looking for something more relaxed, then **Genesis Cinema** is the place to be. This independent cinema boasts couches, great food and drink options, at ridiculously cheap prices, especially for students. They have a number of different screens and some of their smaller ones have the perfect atmosphere for a horror movie. You will be in good hands as they're rigorous with safety, so you can expect them to check your temperature before entry.



If the chilled vibe just won't cut it and you're looking for an adrenaline spike, I would recommend a visit to **Mile End Climbing Wall**. It's funded and maintained by 'Development through challenge' - a charity who help young people develop through opportunity and challenges. So, enjoy an unlimited bouldering session whilst helping out a charitable cause. It's a win-win. They've reopened since their previous corona-fueled closure and are welcoming online bookings.



Food is an essential and if you're out hunting for late night desserts, look no further than Stepney Green's **Sweet**. The downside to the amazing desserts however, is that they are usually packed with ice cream hungry customers particularly on Fridays and weekends. Other notable mentions include Rinkoff's Bakery however they operate exclusively during the day (highly recommend their cronuts).



A BUS AWAY



Shoreditch is a short bus ride away on the 205. Sitting among off-beat cafes and restaurants is Shoreditch's **Flight Club**, a darts venue that you can book in advance or turn up on the day. The bigger the group, the cheaper the session. Get competitive with drinks, food and darts - a great way to end the week.

In the other direction you can take the 25 further into East London. Here you can visit the **Olympic Park** and more specifically, the **ArcelorMittal Orbit**. A massive slide, parts of which are made of glass that gives you a great view of London. I would recommend booking in advance as it a popular attraction. It's worth noting this is right next to Stratford Westfield. So, if you wanted to make it a full day out, you could do a spot of shopping and check out the bowling alleys inside. There are special student prices but make sure to book in advance!



Another skyline must: **Duck and waffle**. A 24-hour restaurant sitting on the 40th floor of the third tallest building in London: The Heron Tower. I'll admit it is a bit on the pricier side but worth visiting on special occasions if you've got some money to splash (This is another place which is open 24 hours!). It would be an injustice to describe the view, you're better off heading to their website to get an idea of the amazing views you're signing up for.



Brick Lane is a popular name thrown around by Barts students in particular. Acting as a hotspot for South Asian food, therein lies a hidden gem: **Enso**. They offer a Thai-Japanese fusion menu with not just quality food but also unbeatable portion sizes, there really is no downside to Enso. Another unmissable gem in Brick Lane is **Dark Sugars**. They do the very best hot drinks in town, their specialty being the hot chocolate concoction. This is perfect for those autumn-winter months to catch up with a friend or reward yourself after long day of lectures or placement!



FURTHER AHEAD



Ever wanted to handle an axe like Gimli? Look no further than **Whistle Punks** in Vauxhall. This is about 40 minutes on the underground away from us at Barts. Book in for a session on how to throw axes at targets. A bit niche I know, but it's a great way to try something new and get your adrenaline pumping.



Now, we wouldn't normally give museums a mention for fear of sounding like a tour guide but **'The Victor Wynd Museum Of Curiosities'** in Hackney is essentially a collection of items from the ages that people don't actually know anything about. This place covers the most random corners of the world, from McDonald's Happy Meal Toys to Dodo Bones and prison inmate's doodles. It is definitely worth nipping into. They currently have reduced opening times and capacity but as long as you book in advance you will be sorted.



Lastly, **Boris Biking** is the way forward if you're new to the city and want to get a feel for the area. It costs just £2 to hire the bike. A little tip from me, provided you dock into a Santander rack every 30 minutes, it remains at that price for a 24-hour duration. So, just make sure you dock in every thirty minutes! There are docking stations everywhere around the city and you can even download an app to tell you where the nearest ones are.

All these are just a select few activities I thought you'd enjoy as a Londoner. The typical Nando's, late-night McDonalds, assortment of clubs and bars, cinemas etc. are all found in the area as well, so you've nothing to fear. We've picked out the more niche, harder to come by stuff that we've tried and tested ourselves. We hope this gives you a real insight into what it means to live in London and will come useful to enliven this year & months to catch up with a friend or reward yourself after a long day of lectures or placement!



PM PUSHES FOR BREECH WHILE BRUSSELS BAMBOOZLED BY HIS BRILLIANCE

BY ABHIRAM MAGESH

BORIS JOHNSON, THE CURRENT PRIME MINISTER WHOSE LIVING IT UP IN AN ANTIQUE FOUR-BEDROOM SUITE IN ONE OF LONDON'S MOST EXCLUSIVE GATED COMMUNITIES, AT THE TAXPAYER'S EXPENSE, HAS PROCLAIMED IN GRAND IMPERIAL FASHION, "SCREW THE RULES, I HAVE A HARD ON FOR MAKING BAD DECISIONS"

Fully erect, Mr Johnson, who once forced a large immigrant family into a smaller place so that his residence may just about have a shot of containing his ego, proclaimed an "oven ready" return to Britain's "Splendid Isolation".

"Perfidious Albion shall rise again", he is quoted as saying before sauntering off to his weekly session of lying to a 94-year-old woman, whom Dominic Cummings, the chief grande horizontale of the administration is quoted to have said "has got to go" for her rude assertions of requiring "constitutionality" and "competence".

MEANWHILE THE EU'S FRENCH NEGOTIATORS STOPPED DRINKING WINE LONG ENOUGH TO OBJECT TO WHAT THEY DEEMED TO BE "A BREECH IN INTERNATIONAL LAW" AND THAT "THEY WILL NEVER SURRENDER"

The German Ambassador is quoted to have said "The British need to get their eyes checked and read the regulations" and that "this won't be as simple as waltzing tanks through the Ardennes". The British delegation for its part, has conceded their poor visual acuity, saying "a drive to Durham ought to fix it" but is steadfast on its proposition of

screwing the rules-based world order that Britain itself created.

As tensions continue to rise, Boris rampaged against the injustice that only a rich silver spooned Etonian white boy could ever feel. "How was I supposed to know that the withdrawal bill set up a border in the Irish Sea?" he is quoted to have asked the Russian diplomat, Dominic Cummings, in secret Whitehall meetings at that Tesco on Parliament Square.

DESPITE ONLY WRITING IT AND THEN RUNNING AN ELECTION ON IT, BEFORE FORCING IT THROUGH WITHOUT LISTENING TO PARLIAMENTARY SCRUTINY, HE IS "FLABBERGASTED" THAT HIS "BLUSTER AND GENERAL INCOMPETENCE" DID NOT SEE THE DAY THROUGH.

Nonetheless, the PM is committed to securing a free trade deal by mid-October. Liz Truss, the trade minister, in private, told sources, simply "we're fucked" before emptying Waitrose of their stocks of Vaseline, Latex and Yeast before the inevitable price surge and shortage, for what she calls her nightly "Moggathon Rave" with fellow minister and bespectacled lemming with a suit and air of arrogance not seen since Louis XIV, Jacob Reese Mogg.

WITH THE COVID CASES CLIMBING AND DEATH RATES ON THE RISE HOWEVER, THERE IS HOPE AMONGST THE CABINET THAT THIS CRISIS WILL BE RESOLVED "WITH EVERYONE BEING DEAD BY CHRISTMAS ANYWAY"

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2	4	5	7		6			

SUDOKU

BY ABHIRAM MAGESH

CROSSWORD

BY EDDIE ANDERSSON

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ACROSS

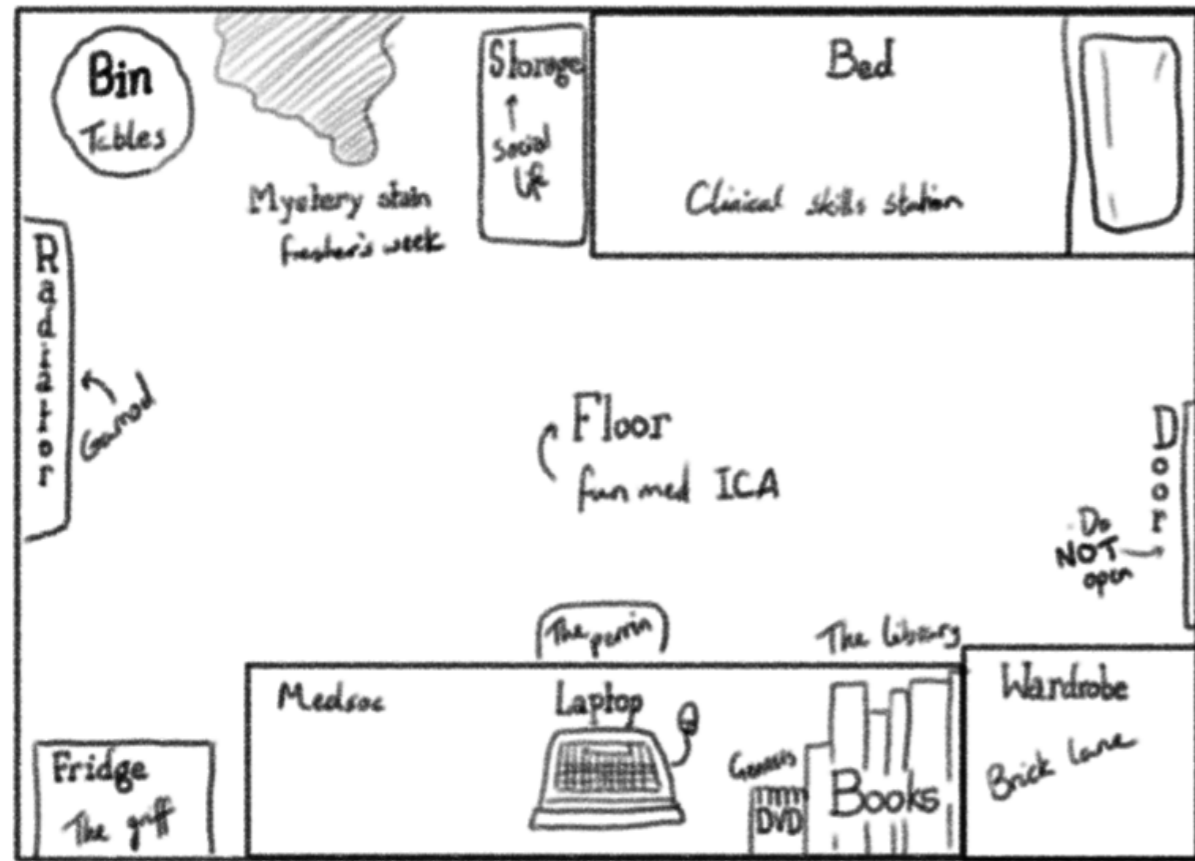
- COVID cure endorsed by POTUS (6)
- Spherical party (4)
- Colloquial speak (5)
- Heavy metal shows the way (4)
- Belted constellation (5)
- Copyright appendage, ascend (5)
- Sharply introduce to the body (6)
- Rare Dx, found in southern Africa (6)
- 1000cm3 (5)
- Strangely and scarily (6)
- 4.5 billion people, 2,300 languages, 11 time zones (4)
- Analogist, homesickness (9)
- Put behind bars (4)
- Fluid retention (6)
- Violent weather, can be caused by cytokines (5)
- Rotate superiorly, arrive (4,2)
- Jungle browser (6)
- Silly and twisted (5)
- Big or disgusting is 144 (5)
- First woman right, at all times (4)
- Encounters sounds like flesh as food (5)
- Exclamation to fix socks (4)
- Voice box (6)

DOWN

- Barium sword is in equilibrium (7)
- Current types rock band (4)
- Drainer of the left bottom rear ribcage (10)
- Oedematous tree of Madagascar (6)
- Lion sign (and Oscar Winner) (3)
- Determine a vest, commercial (13)
- Tender guy is a more formal description (9)
- Trivial detail that makes you scratch your head (3)
- If I go enforce, British overseas headquarters (7, 6)
- Los Angeles fat emulsifier is easy to change (6)
- Architectural open space and the first stop in the heart (5)
- Poor bills heart med (10)
- Living community (9)
- Deadly bacteria and sick thrash metal band (7)
- Column topping admiral (6)
- Abbreviated figure is a fruit (3)
- 31,536,000s (4)
- $\lambda = 620-750\text{nm}$ (3)



Dorm Room of Quarantined students



SOLUTIONS

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5	9	2	1	3	7	8	4	6
4	6	1	8	5	9	3	7	2
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9	5	6	3	2	8	7	1	4
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B	L	E	A	C	H		B	A	L	L		S	L	A	N	G
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M	E	E	T	S			D	A	R	N		L	A	R	Y	N

Our next issue, 'Going Viral' will be coming out in late November, in both virtual and print formats!

To be the first one to hear about our next issue, make sure you follow us on social media!

You can also write for our next issue by emailing us at circadian@bartslondon.com!

GOING
GOING
GOING
VIRAL
VIRAL
VIRAL

