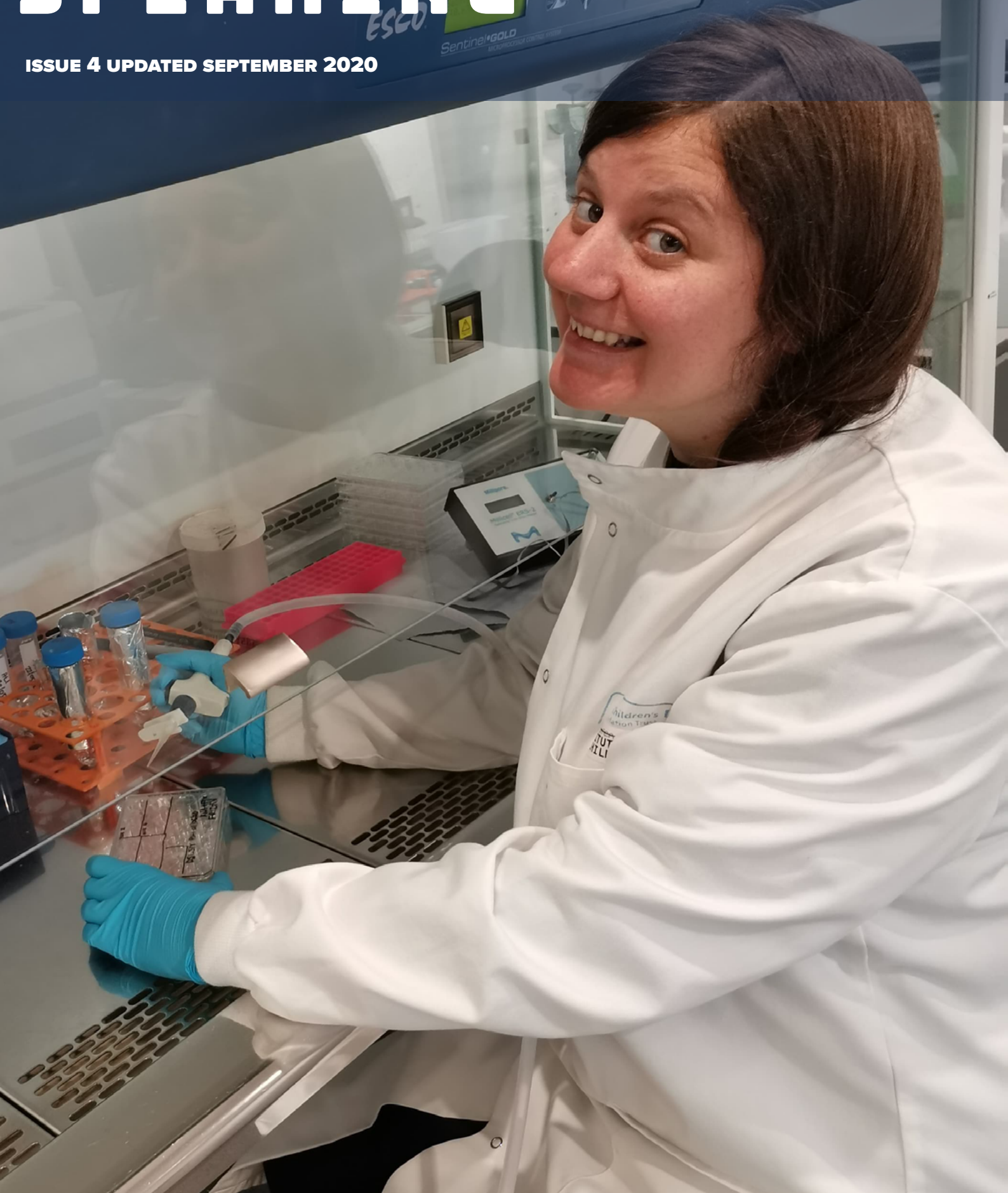


TECHNICALLY SPEAKING

ISSUE 4 UPDATED SEPTEMBER 2020





INSIDE THIS ISSUE

- 4/5 Technician's Bio -
Introducing Stuey Carroll
- 6/9 COVID-19 Research
Project, Alder Hay NHS
FT
- 10/15 Responding to the
Pandemic
- 16/17 Re-purposing antiviral
drugs for pulmonary
delivery to combat
COVID-19
- 18/19 Minimizing the risk of
shared facilities
- 20/23 A tale of two technicians
- 24/25 Manufacture of PPE for
the front line
- 26/27 Lockdown dissected
- 28/29 Labs go into overdrive
- 30/33 ISARIC4C, Covid-19 and
Technicians: Our Lives in
Lockdown
- 34 Special Mention:
University technician
shortlisted in Times
Higher Education Awards

FOREWORD

Welcome to Technically Speaking



Dr James Howard
Director of The Academy

Welcome to the 4th edition of Technically Speaking, a newsletter by Technicians for Technicians and the wider university community

To say the landscape has shifted since our last edition was published in early January would be a huge understatement. We have all had to adjust to the changes and challenges resulting from the COVID-19 pandemic, not least in terms of our working lives. For many of us, the reality of our working week is now made up of (seemingly endless!) Zoom and Teams meetings, working in whatever space we can find at home and juggling the demands of family with those of work.

However, this has not been the case for all of our technical staff, many of whom have continued to work on campus, providing critical support to colleagues across the faculties. Indeed, the last few months have further highlighted the hugely significant role that technicians play in enabling the University to function and excel in so many areas. This edition provides an opportunity to focus on just a few of these technicians and tell their

stories.

In other news, the Technician Commitment Steering Group has continued to progress the actions laid out in our institutional action plan. This has included the publication of fair attribution guidance on paper authorship (found here) and the start of a 'Statement of Expectations' written to give clarity on what our technical staff, regardless of contract type, can expect in terms of career development while at the University. Much more news on progress against our action plan will follow as we head into the new academic year.

For now, I hope you enjoy reading this edition and hearing of the achievements of our technical colleagues as much as I did. If you would like to contact us about anything mentioned in the newsletter, or if you want to get involved with the work of the Technician Commitment, please email us at:

theacademy@liverpool.ac.uk

or

technet@liverpool.ac.uk

#TechniciansMakeItHappen

Technicians Bio

Stuey Carroll,

Stuey Carroll is a Technical Coordinator working in Architecture within the School of the Arts.

Describe your work area and your role.

I am the Technical co-ordinator for the School of the Arts. My role is to predominantly manage three facilities within the department - the print media design suite, an arts material store and IT/AV services.

I am also a departmental safety coordinator with H&S responsibilities.

What does a typical day look like for you?

Under normal circumstances I start the day by checking that everything is in order in the facilities that I oversee. Each service we provide also has an email account associated to it so there is always a bit of administrative work to get through in the morning.

The nature of my role is that no two days are typically the same, with ad hoc requests for support coming from all over the school. I enjoy the variety of my role; each day can present a new challenge or an issue that needs resolving. I also manage an eclectic team of five technicians so they can take up some of my time too.

What’s your favourite bit of kit?

We have a lot of amazing machinery and

equipment at the School of the Arts such as 3-D printers, laser cutters, CNC routers and our new music studio is breath taking however my favourite ‘bit of kit’ is a technician. All of the machinery and equipment in the world isn’t worth anything if it isn’t serviced, maintained and operated correctly.

What’s your favourite task?

Generally, I just really enjoy helping people, making sure everyone is happy, relaxed and chilled. Interacting with students and providing them with a high level of customer service is my favourite aspect of my job because without them we would not have one.

What’s the best project you have worked on?

I have been involved in many projects over the years at the University and each one has given me a sense of pride. Recent projects that I have been involved with, and especially proud of, is the repair and refurbishment of 19-23 Abercromby Squares roof, which took three years and £450,000 to coordinate and complete. In contrast, collaborating with my friend and work colleague Michael Beiert to write, sing and produce the SotA Charity Christmas single, Christmas Time, was a particular highlight. Most recently during the early stages of



.....
“.. I am proud of the fact that fifteen years later we now have an amazing variety of technical facilities and services on offer”

the Covid-19 pandemic I was seconded to support the School of Engineering to assist a small team in designing and manufacturing over 20,000 face visors for our local hospitals.

Describe your career path. How did you get to where you are now?

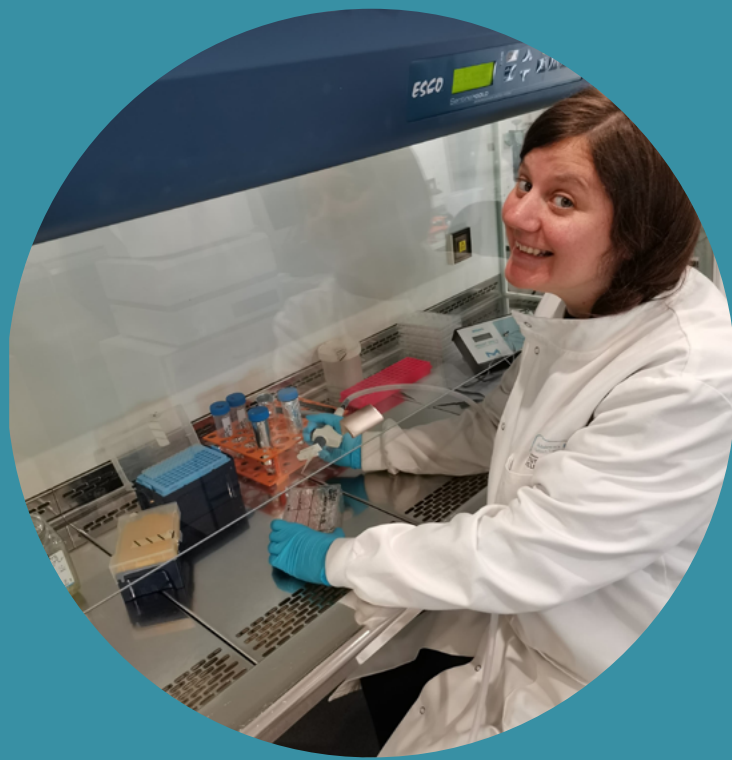
I have had three jobs before I started working for the University of Liverpool. I started by working my weekends on a market stall in Liverpool when I was 13, (Greatie on a Saturday and the Heritage on a Sunday for any Scouse readers). I was also lucky enough to secure an apprenticeship in carpentry and joinery with the local council when I left school in 1989 so I ended up working seven days a week until the age of 21. My son was born in 1995 and I ended up helping out in the art classes at the school he attended because my true passion in life is drawing, painting and making. This led me to join a life drawing class at my local college which in turn led to me making a life changing decision. I left my job as a joiner and went back to college to complete an Art A level and then on to University to obtain a degree in design. To supplement my income during my studies, I did youth work for five years. I was planning on becoming a teacher, however, after graduating in 2005 I spotted an advert in the local paper for a workshop technician at School of Architecture. I applied, got the job and have loved working for the University ever since. In fact, when I joined the Architecture department I was the only technician and there wasn’t even a workshop, just a room with a couple of antiquated workbenches inside. So, I am proud of the fact that fifteen years later we now have an amazing variety of technical facilities and services on offer for the students and a lot more technicians to support them.

What part of your job do you most enjoy or get the most reward from?

Probably, introducing a new system, process or protocol that makes life easier for everyone. I love problem solving and working with other people with the main aim of improving the working environment for all the staff and students.

What’s the best thing about being a technician?

Making things happen.



Samantha Williams & Sarah Northey, Core Technicians, Department of Women's & Children's Health, Institute of Life Course and Medical Sciences.

COVID-19 Research Project IITP, Alder Hey NHS FT

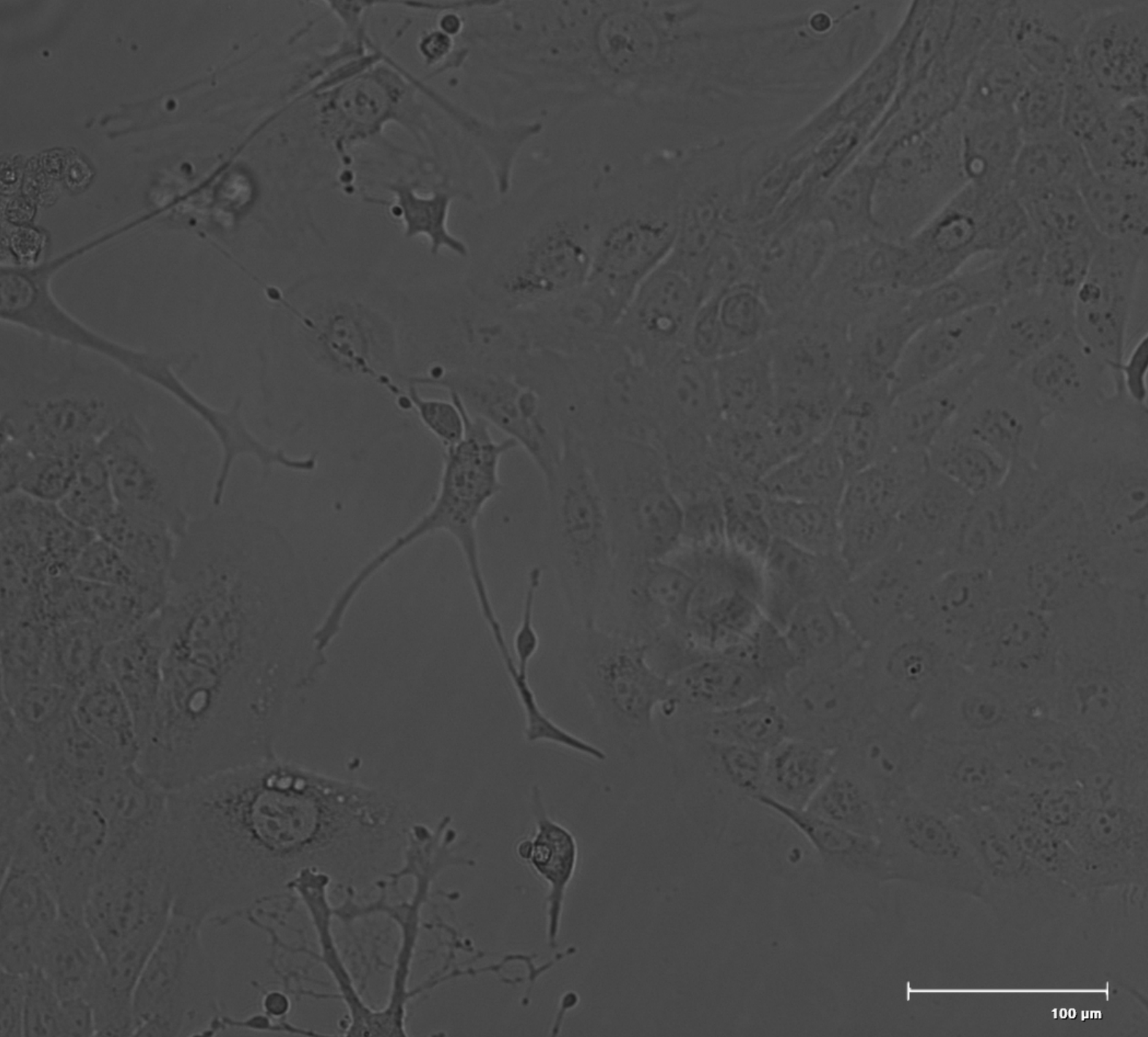
During the lockdown Sam and Sarah have been working to support a COVID-19 research project based at the Institute in the Park laboratories, Alder Hey Children's Hospital. COVID-19 has been shown to cause more severe disease in older adults and Black Asian and Minority Ethnic (BAME) individuals. In contrast, children seem to show mild symptoms of disease, if any, and there have been few child mortalities (under 10) globally.

The research supervised by Professor Paul McNamara and Dr Jenny Herbert utilises differentiated primary human airway epithelial cells (AECs), isolated from nasal brushings from healthy volunteers. These

cells are the primary target of SARS-CoV-2, and recapitulate the human airway in the laboratory. These cells are being collected from adults and children of different ages and ethnicities to study the differences in SARS-CoV-2 infection capabilities, pathology (AEC damage) and the epithelial immune responses in these different groups. Being based at Alder Hey provides invaluable access to precious patient samples from children, allowing us to study COVID-19 disease in adults compared to children.

This project also draws on cross institutional expertise. Our collaborators (Dr Lance Turtle, IIGH), are providing CL3 expertise and are





infecting our primary airway cultures with SARS-CoV-2. Sam and Sarah are providing invaluable technical support, growing, freezing and seeding these cells, which take 4 weeks to differentiate. To date samples have been collected from 30+ human donors.

Moving forward they will begin analysing these airway cultures by immunofluorescence microscopy and RT-PCR, to explore the expression levels of the host SARS-CoV-2 receptor (ACE2) and host priming protease (TMPRSS2), both of which are important for infection inception.

Exploring if the levels of this receptor and protease differ in the airways with increasing age and in different ethnic groups, will help us understand why some people get more

severe disease than others and facilitate therapeutic development.

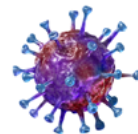
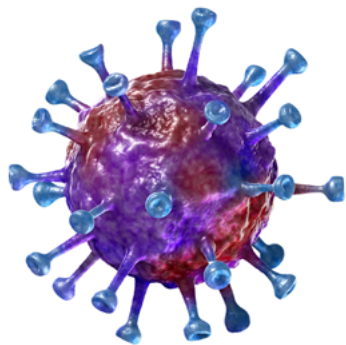
Above: AECs Cocultured with inactivated fibroblasts.

Right: ALI cultures



RESPONDING TO THE PANDEMIC

Technicians from across the University have responded to the pandemic in various ways.



Amy Wood is a senior specialist technician in the Institute of Systems, Molecular and Integrative Biology.

“In line with the University of Liverpool’s response to the COVID-19 out-break, I have been producing WHO grade hand sanitiser in the labs for distribution across campus and to local GP surgeries and care homes.

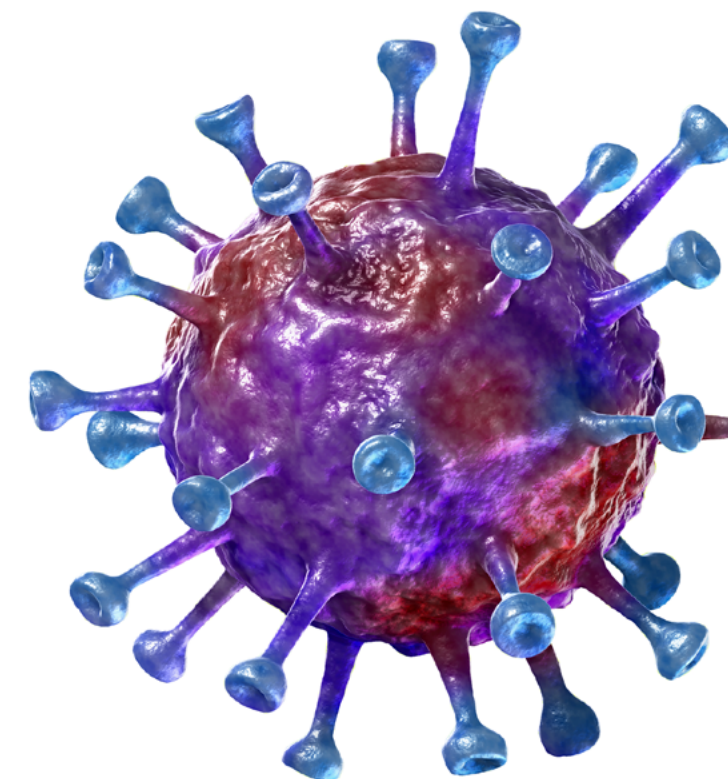
I have had a wonderfully appreciative response from all who received our in house sanitiser as I was informed they were finding it very difficult to get hold of such supplies. I contacted a variety of GP surgery and care home managers and was able to personally deliver litres of sanitiser to their establishments to help keep staff, patients and residents protected from Coronavirus infection.

I felt proud to be able to provide a small but important service to those who are on the front line of protecting the public during this epidemic.

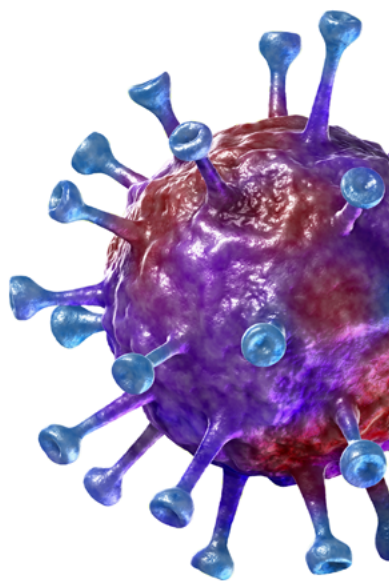
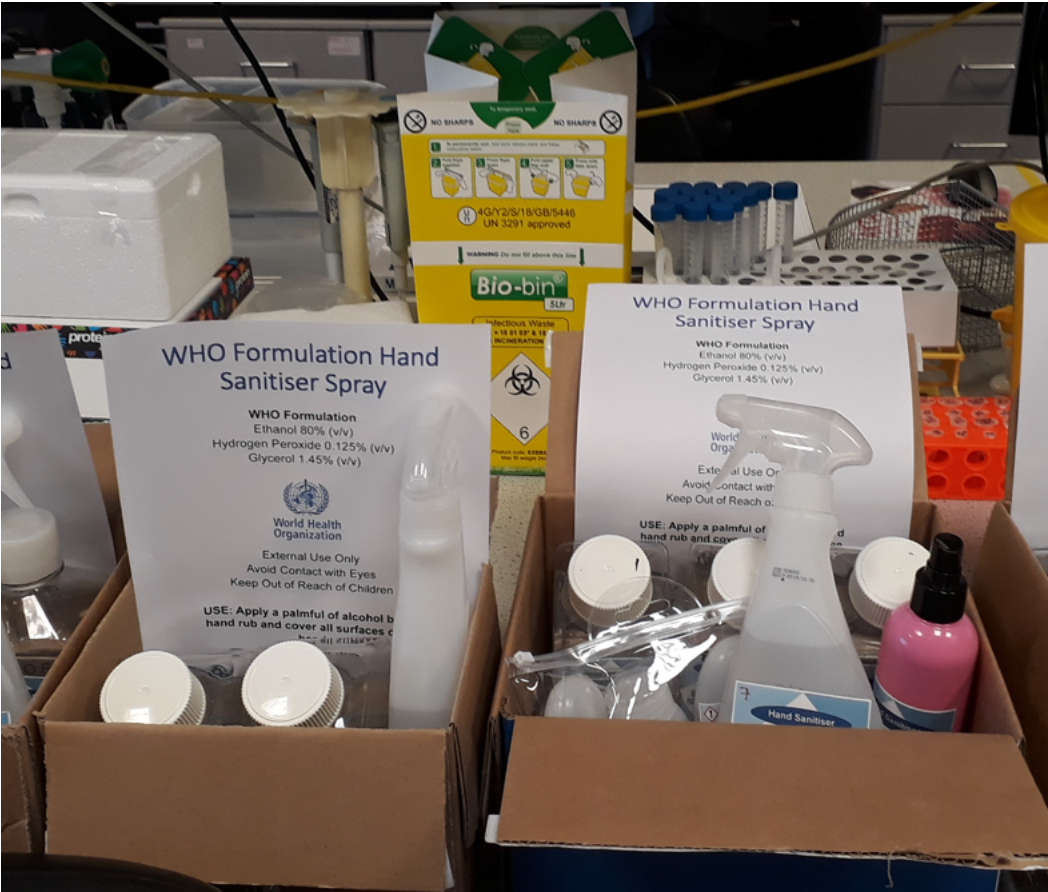
I was wholly supported by my line managers as ISMIB and thank them for this opportunity to help out and ease the monotony of being in lockdown with my 5 year old son!”



Images: Amy Wood, Senior Specialist Technician and the WHO grade hand sanitiser she produced.



Responding to the Pandemic



#TechniciansMakeItHappen

In the Biosciences/Life Sciences buildings work never really stopped for the technical staff as there were many things that still needed to be done whilst the country was in lockdown. This ranged from receiving deliveries for the high-priority COVID research to maintaining research-critical plants and insect populations

Early on in the lockdown we saw huge demand for donations of PPE. Technical staff from across the faculty identified what was available for donation and prepared it for collection. Nearly 240,000 individual items were donated. A huge thanks should go to Carl Wright and Paul Bentley for driving round to collect and relocate a lot of boxes!

The tech team in HARC made hundreds of disposable plastic aprons. These have been used in some patient-facing COVID projects and to allow the resumption of phlebotomy for some ongoing research projects. Apron modelled by Lesley Knapper:

Following a call from the government, 55 PCR machines were identified, collated, labelled, and made available for collection. Kevin Cham was instrumental in organising this effort.

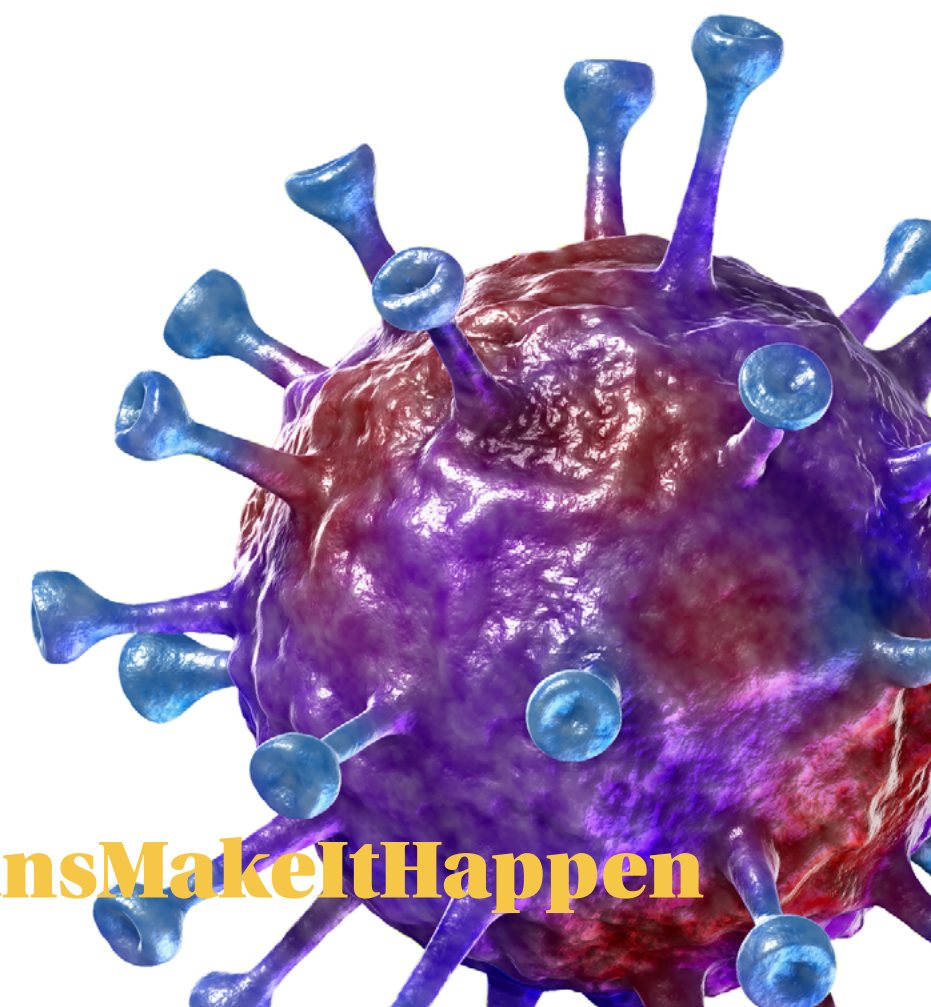
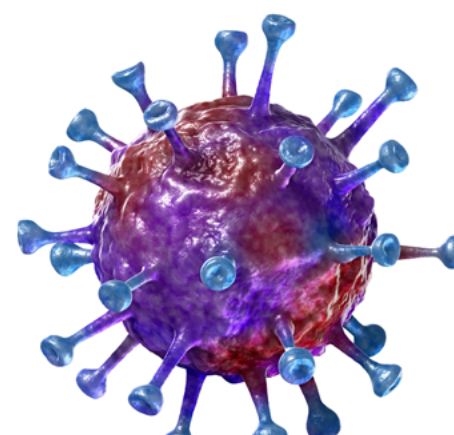
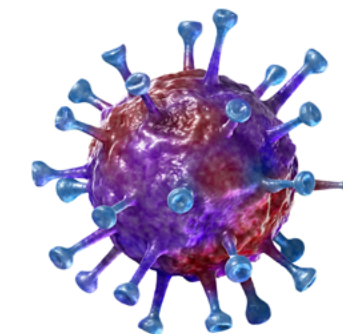
We also donated two LightCycler machines for use in nearby diagnostics labs to aid the testing effort.

Throughout lockdown, technical leads in each institute in FHLS have been instrumental in understanding and advising on the operational requirements for all

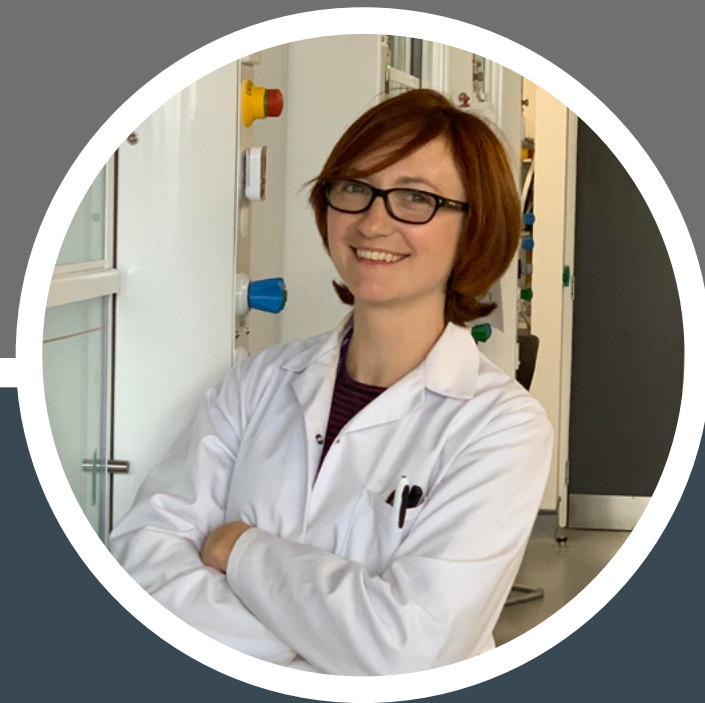
the rapidly initiated, high-priority COVID research. The University of Liverpool was ranked third nationally in terms of the amount of COVID research being undertaken, none of this would have been possible without the expert input and support of the technical and safety leads.

Many technicians have volunteered their time to help in many aspects of supporting the COVID research projects. Special mention should go to Jane Armstrong, Tori Shaw, and Jo Middleton for their monumental efforts in organising, advising, planning, volunteer-wrangling, and generally making everything, and everybody, run like clockwork.

These are but a few examples of the vital role that technicians have played during lockdown. Something that cannot be so easily conveyed is the sheer amount of energy, adaptability, good will, support, and collegiality shown by many of the technical staff across the faculty as we faced, and continue to face, the very challenging circumstances set before us. This has been manifested in myriad ways, from the critical contribution to all aspects of the shutdown, maintenance, initiation, and resumption of research projects, to aiding the University's contribution to supporting regional health care efforts, to simply supporting each other's health and wellbeing whilst we all struggled to adapt to new ways of working.



#TechniciansMakeItHappen



Catherine Unsworth, Chemistry

Repurposing antiviral drugs for pulmonary delivery to combat COVID-19

According to the World Health Organization one person in five becomes seriously ill with COVID-19 after contracting SARS-CoV-2. In cases where severe lung damage occurs, depletion in the body's oxygen levels can lead to breathing difficulties which require medical intervention. Medical ventilators are used to provide air to the lungs alongside medication which relaxes respiratory muscles and aids mechanical assistance of breathing.

Globally, availability of ventilators is of great concern. High initial cost and limited production rate alongside protracted usage times per patient (hospital stays of between 1-3 weeks are suggested for patients with severe COVID-19) mean that alternatives to mechanical ventilation are urgently needed². As well as this, options for non-invasive inhaled therapies that can be given through mouthpieces prior to serious symptoms developing are of high interest to global medical and scientific communities. Treatment of the virus prior to serious infection has potential for community treatment leading to reduced demand for hospital services. However, no known therapies are currently available.

With rapid action needed to identify pharmaceutical agents with activity against SARS-CoV-2, early investigation by the Department of Molecular and Clinical Pharmacology into the suitability of currently available antivirals has highlighted a series of candidate compounds that may be quickly formulated into inhaled therapies. Work being carried out in the Department of Chemistry within the Functional Materials Team aims to build upon ongoing nanomedicine formulation research. Nanoparticles are more than 100 times thinner than the width of a human hair, and are more readily absorbed into the systemic circulation than traditional drug delivery forms. This improved efficiency means that less drug is needed

to provide the same blood concentrations as conventional dosing methods. The use of less drug material per dose is more cost effective and enables more patients to be treated with the same global stock of material. Ongoing nanoparticle work within the Functional Materials Team aims at producing low cost therapies for patients with HIV, malaria, and hepatitis.

1. Clinical management of COVID-19: interim guidance. Geneva: World Health Organization; 2020 (<https://www.who.int/publications/i/item/clinical-management-of-covid-19>, accessed 9 June 2020)

2. Kewan et al., Tocilizumab for treatment of patients with severe COVID-19: A retrospective cohort study, *EClinicalMedicine* (2020), <https://doi.org/10.1016/j.eclinm.2020.100418>

3. University of Liverpool. 2020. Small solutions to huge challenges: nanomedicine for HIV and other diseases. [ONLINE] Available at: <https://www.liverpool.ac.uk/chemistry/research/research-impact/nanomedicine-for-hiv/>. [Accessed 1 July 2020].

Minimizing the risk of shared facilities

Shared facilities are in general quite problematic during a pandemic, as they can become hotspots. There is probably only one thing worse than a closed facility, and that is an open facility which is a hotspot for staff and users.

Among shared facilities, again microscopy facilities are a special challenge, as most microscopes are in small rooms, most of the times on ground floor or underground to minimize vibrations, without windows and with poor ventilation. When air conditioning is present, the setup is made in order to cool up efficiently the room, not to maximize the air changes per hour. Attention has to be paid to both disinfection of surfaces and ventilation, compulsory face masks and social distancing (only one person per room) help to minimize the risks.

On a positive note, the Microscopy community is very active internationally, on the Royal Microscopy page it is possible to find some suggestions that can be useful also for other environments:

<https://www.rms.org.uk/study-read/news-listing-page/help-and-advice-during-virus-conditions.html>

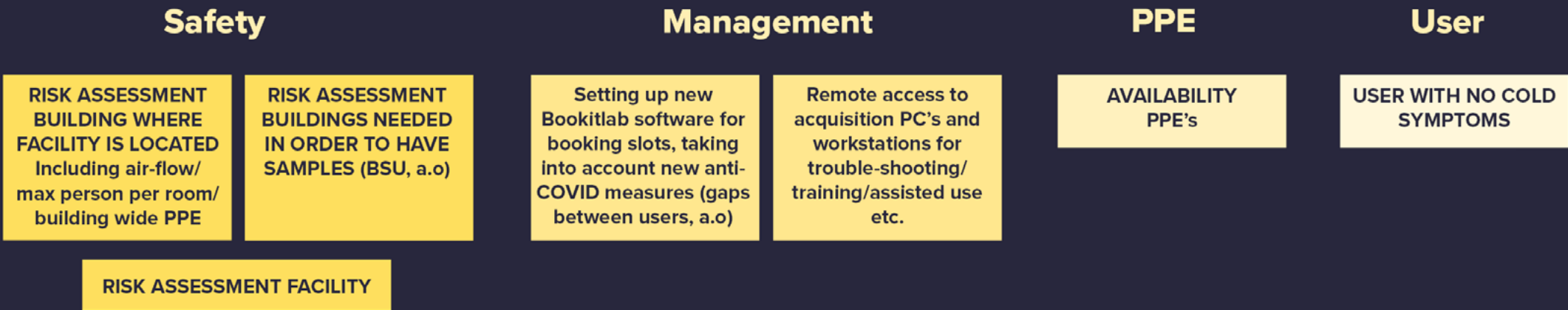
The diagram represents our attempt to minimize the risk in using the facility, it already changed a couple of times and it will probably adapt as guidelines are evolving.

In our case there are some important pre-conditions, as we allow external users from other buildings in our microscopy facility.

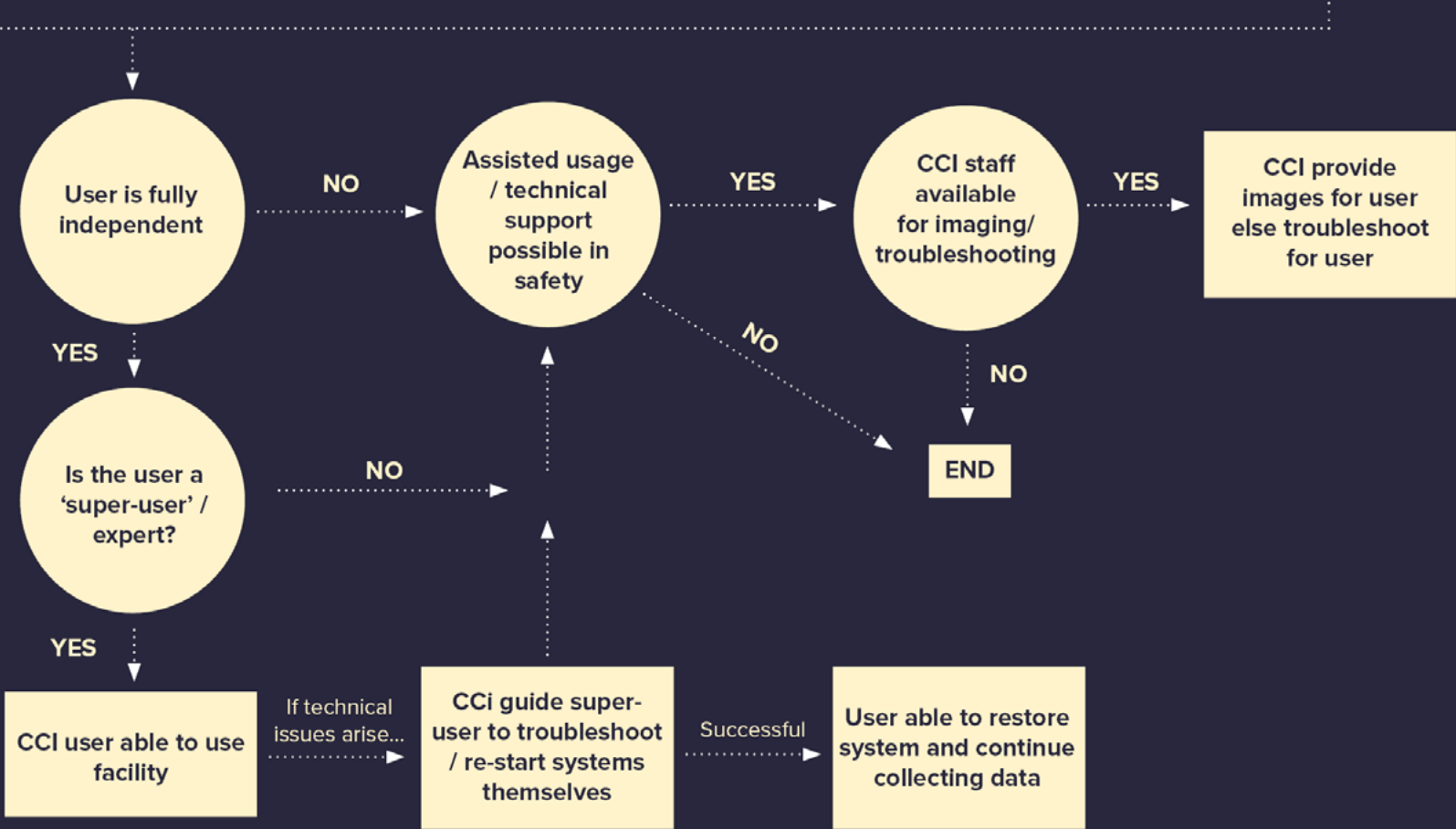
We don't have manpower to do much service work, for the moment only users that received a full induction can use the facility, although we started in the last week one pilot induction for a new user, in remote.

To guide you through the diagram, at the

LEVEL 1 PRE-CONDITIONS



LEVEL 2 PRE-OPERATIONAL CONDITIONS



top level there are all the pre-conditions that have to be satisfied even before booking the slot with the Bookitlab software for the chosen microscope/room. The lower level aims to capture all the possible cases where a user is struggling with the instrument/ sample and the measures in place to allow the user to complete the experiment.

we tried to introduce also the figure of the super-user. A super-user is an expert user

that not only is trusted to work safely and reliably with the instrument, but can help also less experienced users.

Up to now we are not working at full capacity, but an important factor for us is that the users feel safe while in the facility.

Dr. Marco Marcello & Jen Adcott
Centre for Cell Imaging

Tale of Two Technicians

Dave Jones,
Senior Technician.



“The priority of all academic and technical staff was to try to get involved with research into COVID”

On 16th March we had a communication from our VC that any vulnerable people, or people with pre-existing health conditions should now not attend work due to the threat of COVID-19 and if possible, work from home. The next day

17th March however we received another communication instructing all researchers to curtail all research activities by

Friday 20th March, my optimism at this point was shot down in flames as it began to dawn on me that this situation is really serious, this feeling was exacerbated by the ensuing panic of my workmates and the gravity given to the situation by all of the academic staff whom I hold in esteem.

Wednesday the 18th March I had been in consultation with my Team Leader Jan, (who was considered to be in the vulnerable group and so was working from home) and I was instructed to start getting all operations shut down. This was the worst moment in my long history as a technician as I have always done my utmost to keep labs running smoothly.

Thursday the 19th March was the day when most of the shutting down was completed, the site was now virtually deserted and had taken on an eerie feeling there were only a skeleton staff present and everyone seems stunned by the situation. This day I saw a few PhD students and other researchers some of whom were getting quite desperate over the situation and turned to me for emotional support, something which I'm not totally comfortable with but over the years have learned how to deal with it,

Technicians all too often take on a voluntary pastoral role.

Friday 20th March and it had now sunk in that things were going to be different for a long time and I was now in situation where I thought “right- what can I do to help”, we now got word from Senior management that we should pack up any equipment we have which could be used for COVID testing to be collected by the military, the fact that the military become involved made it seem like a state of war, something which many of us had never experienced. Other technical team members on site and I packed up eight PCR machines which were taken to Liverpool to be used to help with the massive testing programme initiated by NHS.

The priority of all academic and technical staff was to try to get involved with research into COVID and as such Containment level 3 laboratory space was at a premium. We have a CL3 lab at Leahurst which was offered out and without delay we had a group who were keen to take up the offer This gave me some purpose and over the next weeks I worked with consultation from our team to get the CL3 lab recommissioned, which entailed overseeing autoclave serving and validations, installation of a temperature monitoring system to the CL3 -80 freezer, a full clean and empty of current equipment, servicing of the MSC, test fumigation and validation of the fumigation using live spore strips.

Alongside this, all the usual services also needed to be looked after. While the labs were empty of workers, we took the opportunity

to get some servicing completed which under normal circumstances would cause inconvenience, these included maintenance of Microbiological safety cabinets, Anaerobic growth cabinets, centrifuge servicing, Tissue culture incubator servicing plus the installation of air conditioning in 3 labs.

During the middle to late June it was decided that we could start preparing to receive staff working back in the Labs, to do this however there was quite a lot of work to do, this was an uplifting time for me as I thought “there's light at the end of the tunnel” and I got busy preparing for the return, this entailed writing COVID safe working risk assessments, preparing the labs for return to work with social distancing in place, yards and yards of hazard tape was used and each lab was split into separate work stations with 2M distancing and back to back working, relevant signage was put in place and hand sanitisers and 70% ethanol sprays have been placed literally everywhere.

Once all the physical precautions were in place then we started online COVID safety inductions using Zoom or Teams, a method of communication that has become the norm nowadays but cannot replace the actual face to face meetings we all are used to. Online booking systems have been put in place and by mid-July we have priority workers back in the labs, this situation has made me feel much happier and I am quite proud of the way myself and our team have worked together under unprecedented circumstances to get things back up and running and although we're not out of the woods just yet we are just within a hop skip and jump.

**“I feel proud
to have helped
where I can”**

Jan Brett,
Technical Supervisor.



I'm a technical team leader at Leahurst and I came to work from home on 17th March and have continued to do so, due to being classed as clinically vulnerable. During this time, I have continued to support both our research labs at Leahurst plus the greater faculty response to COVID. Much of this would not have been possible without my right-hand man and senior technician Dave Jones; who became my eyes and ears on the ground as a key worker looking after our labs.

First off, our response to close was executed very quickly and safely with all but essential equipment being shut off – which felt very strange to use as our primary job is to keep the place running at all times! The rest of the team soon followed in working from home as much as possible and we swiftly became experts in Teams and Zoom

Next, we then had to offer up our P3 masks to our local NHS hospitals. Soon after came a call

for any equipment that could be used for COVID testing in the national efforts and we quickly decontaminated and sent eight thermal cyclers away to be used.

Working with Dave then over the next few months meant we kept the labs running albeit in a reduced manner, which meant regular orders of gas, liquid nitrogen, consumables for those labs still running plus getting engineers in along the way to service some of our key equipment. All our precious cell lines and stocks were looked after as well as responding to the usual unusual events like ceiling tiles falling down due to rain leaking in!

We also brought the Leahurst containment level 3 lab back into operation and I wrote all paperwork and documents needed for this. Together with Dave got the lab and associated equipment tested and signed off ready to start our own COVID research on site.

I assisted the faculty response efforts for COVID research by looking after the database of staff / students who had volunteered to help

with COVID research and joining them up with requests for help as they came in. I then became part of the COVID ops working group looking how we can manage use of our CL3 labs going forward to accommodate all of this new research.

Then began our efforts to reopen research labs to non COVID work and again from working closely with Dave managed to identify maximum occupancy numbers of labs, demarcated areas for working and priority of staff returning. We wrote risk assessments, purchased hand gel and face coverings and restocked with PPE.

It's been pretty challenging working from home sometimes with the two children here as well, but mainly from my frustrations and not being able to come on site and help hands on. However, I feel proud to have helped where I can and I have definitely grown from the experience. I feel forever grateful for Dave and I'm really proud that we have worked so well together to maintain our research labs over such trying times.

Manufacture of PPE for the front line



During lockdown I was part of a small team working on campus to manufacture face visors to protect front line health care workers in local hospitals, care homes and GP surgeries. The work started in the School of Engineering in the first couple of weeks of lockdown, with the visors initially being manufactured using 3D printers using an open source design. The team quickly realised that 3D printing alone would not be able to make the volume of visors required and so came up with a new design to speed up the manufacturing process. The new design used a laser cutter to make the main components, a waterjet cutter to make the

visor and hot wire cutter to cut the elastic used for the head band.

We set up a production and assembly line in the schools Active Learning Lab, optimising the process to eventually be able to produce hundreds of visors a day. As demand grew technicians from Architecture, Central Teaching Hub and Electrical Engineering joined the team, including a number of technicians from Engineering who set up workshops at home to assemble the components. Unilever, already a strategic partner to the University, offered their assistance by sourcing materials, including industrial size rolls of plastic film and high-volume 3D

printing of one of the components.

For the most part I enjoyed the challenge of transitioning to home working, moving my teaching online and learning to communicate with students and colleagues via new platforms has been interesting. However, a home office doesn't really compare to a workshop or lab, having the chance to be able to go back to campus for a few days a week to do practical work has been great, especially to work on a project like this.

Tony Topping, Teaching and Research Technician, School of Engineering



Lockdown dissected

Technical Tales from the Faculty of Health and Life Sciences

Technicians from the Faculty of Health and Life Sciences have shown an amazing amount of team spirit all the way through lockdown and we should all be incredibly proud of this. In March, technical team leaders quickly came together to form a working group to discuss how we could collaboratively manage to both shut down lab operations quickly and effectively and how to move a volunteer army of technical resource to support and manage COVID-19 research in our Institute of Infection, Veterinary, and Ecological Sciences.

Team leaders worked together and, with some their teams who remained on site, helped mobilise the response to the call to donate facemasks and equipment for COVID-19 testing from research labs to our local NHS colleagues. Some of our equipment also went to the national testing response effort – it was collected and mobilised by the Army! Everyone really pulled together despite being under immense pressure, as we found we had had a lot of emotional support within our technical network as well.

Throughout lockdown our veterinary based technical staff continued to provide essential care to animals, supported food safety and production as well as maintaining vital clinical diagnostic laboratory services. Active research laboratories were supported in all functions and our “closed” laboratories maintained by a dedicated crew of keyworker technical staff; who continued to come to work to care for all our valuable stocks, cell lines and equipment – some of whom showed such dedication by walking miles to come in rather than use public transport! Without their efforts we could not have supported our response to the pandemic crisis plus millions of pounds worth of previous scientific research would have been lost as well as Lab technicians were extremely keen to volunteer to help however they could, demonstrating the true hard working

and dedicated spirit of our workforce. They were flexible enough to volunteer in other areas of the faculty; to undertake new duties such as making in house hand sanitiser for distribution internally and externally to GP surgeries. Technicians have also, at short notice, responded by creating sample collection kits for a local household COVID testing study.

Our faculty has reopened ahead of the rest of the University to get all of our wonderful research back up and running again. Once more our technical staff have enabled this extremely quickly and effectively; via undertaking risk assessments, marking off labs and other areas for social distancing, getting health and safety signage in place, sourcing hand sanitisers and facemasks, getting booking systems and rotas organised and by getting staff and post-graduate re-inducted and re-introduced on site quickly.

Our technical teams have gone above and beyond over the last four and half months, demonstrating how truly valuable we all really are. Our academic colleagues have expressed real gratitude to have had the impact of the pandemic on their research efforts minimised, due to the hard work of our technical teams. Well done to everyone!

Jan Brett, Technical Development and Planning Officer

LABS GO INTO OVERDRIVE

The University of Liverpool's GCP Laboratories technical team have been working non-stop to support COVID research. It started with a call to support the huge and critically important ISARIC Clinical Characterisation Protocol, led by Prof Sample, to date the team made, labelled, QC'd and sent out over 2000 sample collection kits.

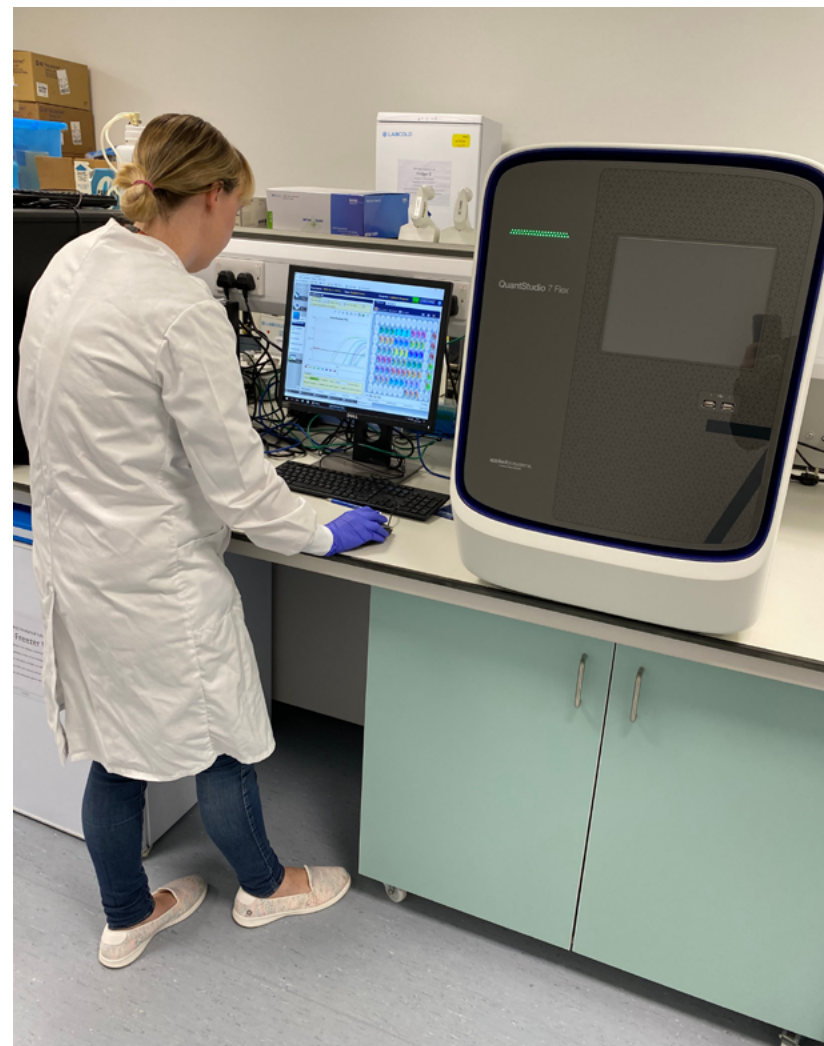
The team are also supporting Prof French's COVID-LIV household study and have created over 2500 sample collection kits. In addition, the team have been busy optimising and validating assays for COVID related clinical trials, such as Prof Khoo's Phase I/II AGILE trial.

These have included a range of LC/MS drug PK assays, multiple variations of the SAR-CoV-2 PCR assay and development of a novel DNA sequencing method to find out how COVID-19 effects the body's natural microbiome.

Images:

Top, Liz Challenger

Right, Katie Bullock & Laura Booth



ISARIC4C, COVID-19 AND TECHNICIANS: OUR LIVES IN LOCKDOWN

Technical staff in the Ronald Ross building, University of Liverpool, Departments of Clinical Infection, Microbiology and Immunology (CIMI) and Infection Biology Microbiomes and (IBM), became aware of the International Severe Acute Respiratory and Emerging Infections Consortium (ISARIC) back in mid-2019, when Monkeypox samples from a UK outbreak arrived in the CL3 labs and technical staff had to sign a new RA to be aware of the new hazard. The technical team in Ronald Ross are also the CL3 response team and are trained to ensure the safety of researchers working at CL3 in any emergency. Little did they realise how this aspect of this work would take over their lives in 2020. The world started to hear about this new threat called Coronavirus which was spreading across the globe and first impacted at the Ronald Ross in February 2020. As Liverpool cases increased, the activities of the technical team soon evolved to incorporate this fast moving health crisis. The World Health Organisation (WHO) declared pandemic status on 11th March 2020 and the ISARIC response was to form a UK wide biorepository within the Faculty of Health and Life Sciences.

As the UK situation worsened, the university pre-empted the lockdown by advising that non-essential laboratory work be ramped down, prior to the university closing on 20th March 2020, except for essential Covid-19 work. Once lockdown was declared by the government, the campus became a ghost town, except for those buildings contributing to the 'war' effort.



Packing Parcels - Many parcels!

Across the university, professional services staff were still on site to provide essential services, with the technical teams adapting to a mixture of existing duties, new Covid-19 support roles, as well as home working. In the Ronald Ross building the Covid-19 work was expanding massively and the technical team assisted and supported all of this work:

- Emergency responders for CL3 – vital as all CL3 labs were working at full capacity.
- Technicians were trained to become CL3 trainers.

- Technicians trained >30 volunteers in CL3 on an accelerated timescale. CL3 training is intense with dedicated sessions on theory, lab orientation and emergency procedures before even entering the facility. After that, significant time is spent shadowing and observing workers at CL3 before signing them off as a competent CL3 worker.
- Technicians increased sample storage capacity within the CL3 facility coordinated with the Biomedical Services Unit (BSU) and Good Clinical Practice (GCP) labs so that they could

accommodate the fast-paced level of patient recruitment in the study.

- Technicians organised GCP and Laboratory Information Management Systems (LIMS) training of all volunteers and maintained records as well undergoing the training themselves to enable them to assist CL3 work.
- Supported all other Covid-19 research happening within the Institute e.g. supporting MinION sequencing.
- Technicians were extremely flexible often supporting need in other areas when required, e.g. covering reception, assisting with LIMS kit assembly and covering technical staff who were shielding.
- Technicians maintained essential stock levels of vital consumables for CL3 and CL2 labs.
- BSU technical staff provided cover for essential services, e.g. liquid nitrogen and laboratory gases to free up CIMI technical staff who were working on ISARIC4C (ISARIC Coronavirus Clinical Characterisation Consortium).
- Total number of samples processed so far:
 - Samples in freezer: 22,227
 - Samples shipped out: 7292
 - Unique LIMS kits created: 2393
 - Unique participants to study: 1495
- Technicians working from home were updating risk assessments, SOPs, ordering consumables etc.,
- Accepting/sorting/storing deliveries for

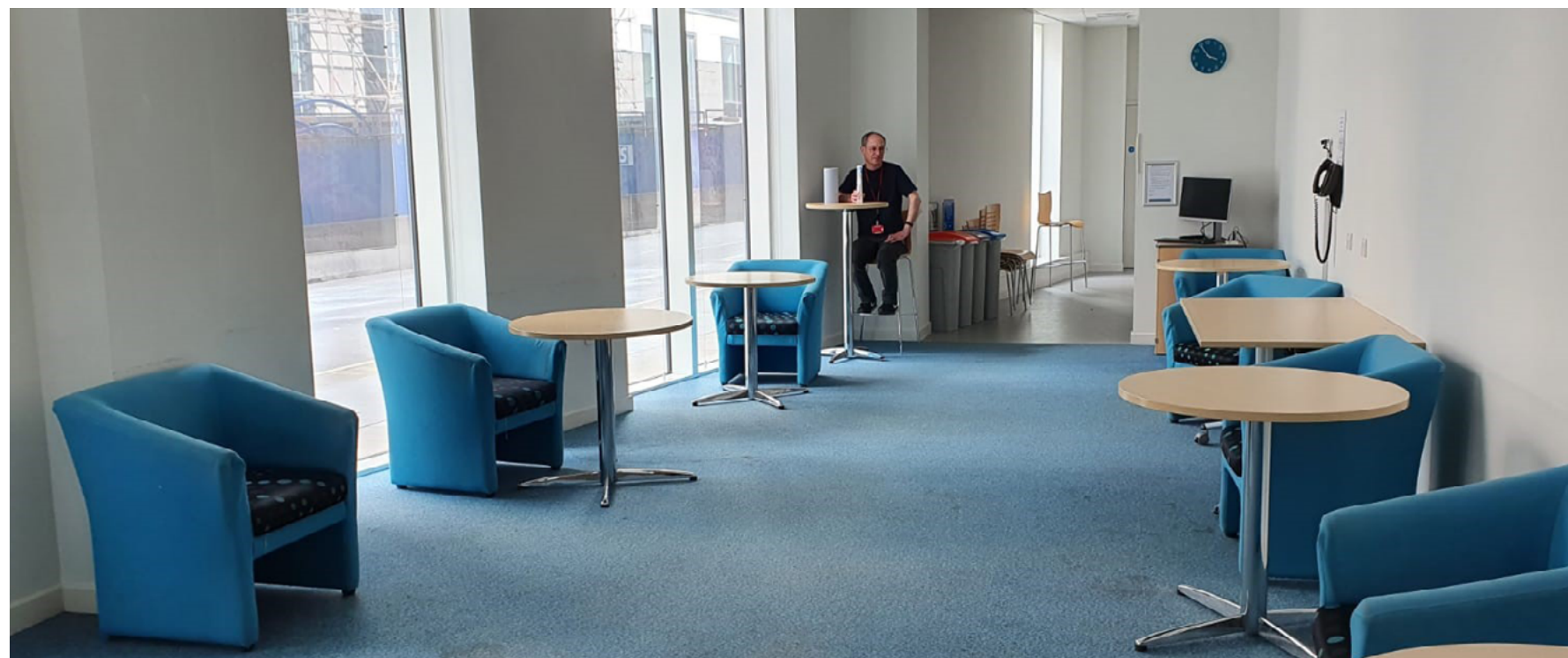
numerous buildings.

- Never ending curating of dry ice supplies.

As the government began to ease the lockdown, the university took the decision for non-Covid-19 lab work to resume at reduced capacity on a trial basis. This presented new challenges to technical teams in making buildings Covid-19 secure as per government guidelines. As the Ronald Ross and iC2 buildings had remained open, this entailed technical staff formally incorporating and enhancing our pre-existing safety precautions quickly to gain Covid-19 secure certification from Safety Advisors Office so as not to disrupt Covid-19 work.

Despite all the stresses, as a technical team, it was important we lifted each other's spirits to maintain morale because of the often bleak situation outside the revolving doors of Ronald Ross and iC2 buildings

Huge thanks to Sue MacFarlane, Debby Sales, Jane Armstrong, Steph Woods, Jess Sweeney, building management team, Jo Middleton and the GCP team plus all volunteers. The technical team in RR & ic2: Jane Armstrong, Debby Sales, Trevor Jones, Catherine Hartley, Nahida Miah, Erwan Trochu, Eve Wilcock, Chris Dunn, Paul Gilmore, Cathy Glover, Jenna Lowe, Wes Reid and Debbie Howarth.



Social distanced tearoom

Desk out of bounds

Special Mention: University technician shortlisted in Times Higher Education Awards

John Waters, Chief Animal Technician at the University of Liverpool, has been shortlisted in the Outstanding Technician of the Year category in this year's Times Higher Education Awards.

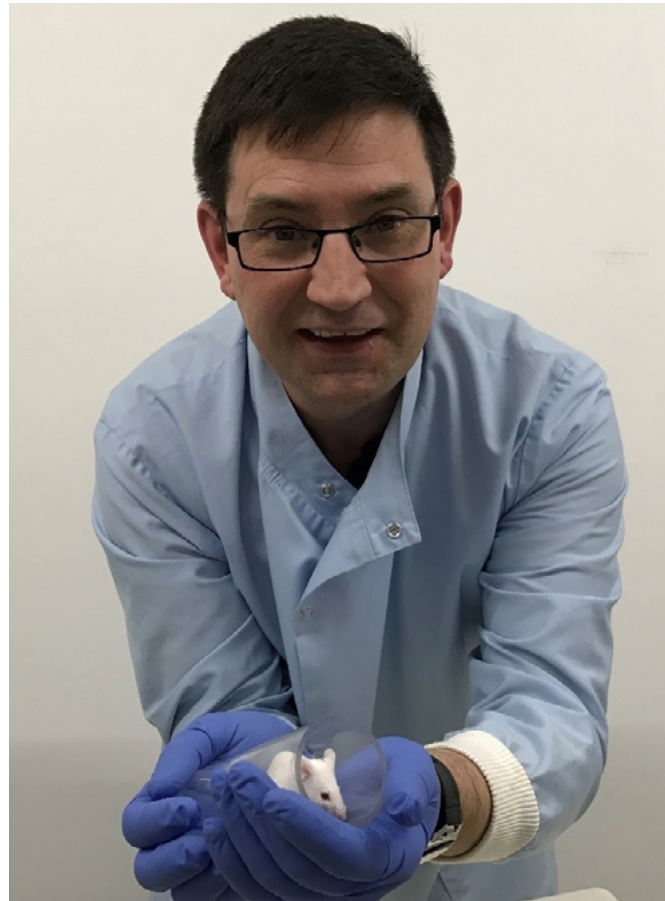
John has been nominated for the enormous commitment he has made to improving the lives of laboratory rodents required for biomedical research, and for providing substantial support to fellow animal technicians across the UK and beyond.

Over a thirty-year career at the university, John has risen from trainee to Chief Animal Technician and Named Animal Care and Welfare Officer (NACWO). He leads the animal care team in the unique world-class behavioural facility at the Henry Wellcome Laboratory of Mammalian Behaviour and Evolution, supporting research on rodent behaviour and laboratory animal welfare.

Since 2010 John has been heavily involved in promoting the implementation of alternative, less stressful, mouse-handling techniques in research laboratories.

John is a member of the Institute of Animal Technology (IAT) Council and in 2017 received the IAT's Andrew Blake Tribute Award in recognition of his work. He was also the UK recipient of the AAALAC International Fellowship in 2019.

On receiving his nomination, John said: "I'm



delighted to be shortlisted for this prestigious award alongside nine other talented and dedicated technicians. To improve the daily lives of animals used in research is the reason why I am an animal technician and I am grateful to Professor Hurst for giving me the opportunity to follow my passion to 'make a difference' in this field.

"I hope that this nomination will inspire technicians across the University to get involved in research projects as they have a lot to offer, and it is very gratifying to know that technicians can make a difference."



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