

Affiliated Partners

How our Corporate Affiliates and Partners are combating COVID-19

Our Corporate Affiliates and Partners



Thank You. The Institute of Science and Technology (IST) would like to express our thanks to the amazing technicians, technical community and organisations for all their heroic efforts to fight the Coronavirus crisis globally. Our Corporate Affiliates and Partners are made up of incredible individuals, many of the technicians who are our members also.

Technicians, specialists, managers and organisations across the sectors have played a number of key roles in combating this disease; from volunteering services to advising or supporting their staff and the public to enabling knowledge exchange. From donating PPE to our front-line workers to researching into testing and developing vaccines. Collectively COVID-19 can and will be beaten and we wanted to share some of the key stories that our Corporate Affiliates and Partners have been doing together.

Technicians really do Make it Happen. Take Care & Stay Safe.

The University of Sheffield



University of Sheffield science technicians are actively involved in increasing testing to combat COVID-19 and are also collaborating with Sheffield NHS **Teaching Hospitals on the ISARIC study.**

The Department of Infection, Immunity & Cardiovascular Disease, part of the Faculty of Medicine, Dentistry & Health at the University of Sheffield, is actively involved in research projects related to the COVID-19 outbreak, in close collaboration with the local NHS Trust (Sheffield Teaching Hospitals). These projects are supported by several of their IICD lab technicians (Markus Ariaans, Janine Phipps, Katie Cooke, Linda Kay, Jon Kilby, Hailey Hornsby, and Yvonne Stephenson) with support from technicians in affiliated Departments (Mabrouka Maamra from Oncology & Metabolism and Matthew Wyles from Neuroscience).



Janine Phipps reviewing colonies of competent E.coli bacteria to determine transformation success. These bacteria will start producing SARS-CoV-2 spike protein in large quantities, which can be used for test validations and designing novel ELISA assays.

Sheffield technicians are also involved in the development of novel ELISA kit components and standards for large scale testing. One of the Sheffield academics has successfully produced SARS-CoV-2 spike protein in a mammalian cell culture assay. However, this is a very inefficient and expensive way of generating protein, requiring many litres of cell culture reagents and cell

suspensions. Other colleagues are trying to replicate this work in bacterial cells, which would be a far cheaper way of generating spike proteins in much bigger quantities.

> Find out more on Level 3 **Containment Facilities** information from MRC.



'CL3 ISARIC study: image of Markus Ariaans and Mabrouka Maamra scanning in the sample reports for online processing, as they are not allowed to take any paperwork out of the facility.



One of the projects that they are currently involved in is the ISARIC study, which is a national study in collaboration with the NHS in which the team process COVID-19 patient samples from intensive care units for downstream analysis. The aim of this study is to better understand patient characteristics, disease outcome and treatment regimes, essential in order to inform Government policy and planning. This work is performed in a level 3 containment facility.

The School of Theatre are encouraging watching theatre at home in response to supporting peoples wellbeing throughout the COVID-19 crisis.

As theatre venues across the UK have closed their doors due to Coronavirus, major theatres have turned to broadcasting performances online for people to view at home during the uk lockdown. MMU are encouraging everyone to '*never fear, the theatre is here*'.



David Salter, Acting Degree Programme Leader, has said that many of us will be watching more theatre now than we did before. With long days at home, we often spend hours trawling through box sets to entertain ourselves. Watching television can be a passive experience, therefore, when we watch a recording of a live performance, we feel part of an event, even when the event is no longer live. Watching live theatre, it's not so much happening in front of you as happening to you, and to other people too. Experts have said that what we miss right now is being with people. And at a time when this is almost impossible, being in the present moment.

Michael Pinchbeck, Reader in Theatre says that culture is important, not only to our economy but also to our wellbeing. Theatre is a creative solution to the lockdown. Many arts venues, and indeed the BBC, are launching 'Culture in Quarantine' projects to entertain and inform us at home. <u>HOME Manchester</u>, has announced a new programme, Homemakers, featuring local artists responding to the crisis, taking 'live experiences from the homes of artists into the homes of their audiences'. It's important to note that artists and theatres will lose revenue over the coming months and Arts Council England are doing important work to support freelance artists and companies during the crisis.

MMU have advised on a new strategy to help the High Street recover from the pandemic. The framework will support local authorities and policymakers as part of the government's High Streets Task Force in order to assist people and organisations responsible for supporting their

towns and cities through the pandemic, Manchester Metropolitan's Institute of Place Management (IPM) has developed a unique Coronavirus framework. The four-stage framework is designed to be used by local authorities, Business Improvement Districts and policymakers to ensure as many businesses and consumers return to the high street as soon as possible, as well as encouraging people to think about what type of town centre they want in the future



University of Bristol

The University of Bristol are testing the COVID-19 vaccine in a pre-clinical programme and staff including technicians produce WHO hand sanitisers for key workers.

The University of Bristol are also contributing to the development of COVID-19 vaccine candidates. Researchers from the University's COVID-19 Emergency Research Group (UNCOVER) have joined forces with Imophoron and are producing multiple vaccine candidates within weeks of the virus sequence being made available.

They are developing highly adaptable, easy-tomanufacture and rapid-response vaccines. These are extremely stable and require no refrigeration, potentially enabling unrestricted distribution world-wide. Bristol are now undergoing vaccine trials. This will involve health volunteers between 18 and 55 with upto 150 participants being recruited for the study. Vaccines are the most effective way of controlling outbreaks and the international community has stepped up efforts towards developing one.

World Health Organisation (WHO) hand sanitiser

The University of Bristol School of Chemistry has also been producing World Health Organisation (WHO) hand sanitiser for key workers as part of the ongoing community efforts throughout the outbreak. Technicians contributed to these efforts alongside academics and researchers. As demand for WHO-grade sanitiser was required and in short supply, the team providing this vital supply for front-line workers so that they were protected.





Brunel University pledge their support and have been collaborating to develop a test to tell you in 30 minutes if you have COVID-19.

Brunel University have joined businesses from across the UK in an initiative to help Britain and its most vulnerable citizens to pull through the coronavirus crisis. It is targeting not just the immediate challenges of coronavirus, but also the challenges of recovery. Brunel along with other employers have signed up to the pledge and give their backing to three main objectives built around employees, customers and communities. They



will not only help Britain through the immediate challenges of coronavirus, but also through its recovery. This is really encouraging as they are going to support their own employees throughout and beyond this challenging time, either through practical support and advice on financial security, mental health and personal wellbeing.



Brunel are working with the University of Surrey and Lancaster University to develop and easy to use test that can inform people if they have COVID-19 in just 30 minutes. The proposed molecular test and smartphone app would let people who are self-isolating test themselves, and allow health care workers test both patients and themselves – helping the UK to dramatically upscale its testing capacity. The battery-operated and hand-held smart phone-linked device is highly cost effective (£100/device) and easy to use. Developed in collaboration with Surrey's Centre for Vision Speech and Signal Processing (CVSSP) and Lancaster, it works by taking nasal or throat swabs, which are put into the device.

Lancaster University community responds to the crisis as well as reporting that research into drugs to treat HIV could help in alleviating symptoms.



Lauren Emery, Lancaster University staff, with her partner, Stephen McEvoy wearing the face shields that they have been making using 3D printing technology.

Specialist analytical equipment from the University's Lancaster Environment Centre, as well as from the Centre for Ecology and Hydrology, has been delivered by the military to scientists at Milton Keynes doing crucial testing work. Closer to home, experts from the University's Engineering Department have been using additive manufacturing (3D printing) technology and other manufacturing processes to produce moulds to make curtain hooks, headbands for protective visors and aerosol shielding boxes for healthcare workers at the Royal Lancaster Infirmary and Royal Preston Hospital.



This scanning electron microscope image shows SARS-VoV-2 (orange), the virus that causes COVID-19, isolated from a patient in the US. Credit: National Institute of Allergy and Infections Diseases - Rocky Mountain Laboratories, NIH.

A statistician at Lancaster University in the UK has revealed positive results from a randomised clinical trial conducted in China to assess HIV drugs lopinavir and ritonavir for alleviating COVID-19 symptoms. The drugs also led to a significantly shorter time to clinical improvement compared to patients on standard of care alone.

<u>Click here to find</u> <u>out more</u>

Birmingham technicians respond at the request of Public Health England to the shortage of hand sanitiser and researchers collaborate to support the NHS by developing and testing new ventilators.

University of Birmingham have been responding to the shortage of hand sanitiser to support their cities frontline staff. At the request of Public Health England, a team of technicians are working at the University's flagship Collaborative Teaching Laboratory (CTL) to produce urgently needed hand sanitiser for Birmingham's social care workers. The sanitiser is being sent to Birmingham City Council's Council House to be decanted into individual bottles and distributed to front-line staff.

Birmingham Uni science technicians have transformed the science labs at the university into hand sanitiser factories. Emma Melia, Director of Operations at the UOB's College of Engineering and Physical Sciences, says "Our technicians have been asked by Public Health England to help produce hand sanitiser for social care workers who are working with the vulnerable and elderly but are running short of supplies."



From virology to immunology, and from business to economics, Birmingham researchers are contributing to the global effort to counter the COVID-19 pandemic. Staff and students are also supporting the NHS and the community by volunteering their time to fight the effects of the outbreak. One of the roles that Birmingham have been leading in the national drive is to develop and test new ventilators that are so badly needed to save the worst-affected patients, and working on solutions to improve the seal and fit of facemasks and develop new types of PPE.



Hundreds of boxes of vital PPE from research labs and departments across the University of Birmingham have been generously donated by the teams to support NHS workers.



University of Exeter

Scientists from the University of Exeter are working to potentially "unlock" secrets of COVID-19.

Scientists and clinicians will use the University's state of the art equipment to ensure samples from Devon patients help to combat the disease. Scientists, along with the Royal Devon & Exeter NHS Foundation Trust (RD&E) are part of a group of the country's leading institutions who are joining together to sequence the virus from patients throughout the UK. The University says by knowing the sequence, it will be possible to know both how it is changing (or mutating) and also to map the spread of COVID-19.



Dr Stephen Michell, Senior Lecturer in Molecular Microbiology at the University of Exeter, said: "The RD&E and the University of Exeter are building on our outstanding collaboration of scientists and clinicians to contribute to the global understanding of this devastating virus. The University has invested more than £3 million pounds in state-of-the-art DNA sequencing supported by the Wellcome trust. This core facility is ideally placed to provide support from the South West towards this crucial national research consortium into COVID-19. This collaboration will aid in the advancement of therapies and diagnostics."



The University of York

University of York donate van loads of equipment to the NHS Teaching Hospitals and make face shields for NHS Trusts.

Departments, research groups and individuals from the University of York have come together and donated six van loads of equipment including hand gels, personal protective equipment and cleaning materials to donate to York NHS Teaching Hospitals before the closure of their campus. This effort was driven by Graeme McAllister and David Pugh who saw an incredible response from technicians across the university. David Pugh said: "We contacted the hospital and said we would hold on to the stuff until they needed it, but they replied within the hour and said – rather scarily – "send it now"."

Technicians from the University of York produced personal protective have equipment (PPE) for frontline workers as part of the national response to COVID-19. Staff from the departments of Biology and Archaeology produced hundreds of face shields using laser cut recyclable plastic, and are continuing to produce more in the coming weeks. Technicians BioArCh Laboratory Manager, Matthew Von Tersch and Biology Research Workshop Manager, Bentley Mark supporting the are cooperative.





Equipment, PPE and cleaning materials from the University and sorted to be donated to the NHS front line.

Newcastle University

Newcastle University have been instrumental in donating valuable equipment, set up a taxi service to reduce public transport use and provided their staff with access to health and wellbeing support services.

Newcastle University have played an important part in the fight against COVID-19 and have donated seven qPCR machines to the testing centre at Milton Keynes. These machines were amongst other equipment and instruments generously donated to the cause. They have also sent staff from their Faculty of Medical Sciences to the COVID-19 screening facility at Newcastle's Freeman Hospital. Newcastle have also set up a taxi service for screening staff at the Freeman Hospital to reduce their need for public transport.



The NIHR Newcastle Biomedical Research Centre have been using insight into the scientific understanding of ageing and long-term conditions to asses and plan for the impact of COVD-19 on those considered to be worse affected by the virus; older people, and those with pre-existing conditions. Experts have been examining the long-term impact this will have on this particular population across the North East, and beyond, in terms of health and social care.

Newcastle University are also contributing to the discovery of new drugs to combat COVID-19. The Newcastle University Drug Discovery Group is internationally recognised for success in discovering anti-cancer drugs. They have been using fragment-based drug design to contribute compounds that inhibit the COVID-19 main protease, an initiative instigated and led by Diamond Light Source. Targeting this protein has potential to lead to drugs that inhibit replication of the virus.

Newcastle have a put together resources for their staff importantly highlighting health and wellbeing support services using telephone or video call. Pastoral support is available along with mental health advice, specialist learning and disability advice. They also have plenty of advice and support on the charity Student Minds website.

ALS Laboratories Ltd

ALS are a leading provider of testing services across more than 350 sites and have put precautionary measures in place to ensure they are helping to contain the spread of coronavirus. ALS have 15,000 staff including technical scientists. ALS are working

to prevent their staff from being exposed to the risk of coronavirus.

ALS are ensuring the continuity of services and is reviewing its plans constantly to ensure it can work for its partners. ALS uses state-of-the-art instrumentation to provide highly sensitive screening and identification for a vast variety of drug compounds as well as delivering reliable environmental testing data with superior service and quality. ALS also offer an unrivalled choice of food and drink testing services for an extensive range of food categories. These services are essential to keep our economy going and are a good reminder of how essential technical staff are in the continuing efforts to provide key services and return back to operations after the lockdown.



The Environment Agency

The Environment Agency are working hard with the Government and other emergency services to protect the public and the environment from the effects of Coronavirus. Front line teams are active, and where necessary, on the ground tackling priority issues such as flood risk and pollution. The Environment Agency is reviewing flood defence schemes currently under construction to make sure staff and contractors are able to work safely while trying to meet deadlines to reduce flood risk for vulnerable communities.

Creative Industries Federation

Creative industries professionals can sign up to get 6 months free membership with the Creative Industries Federation, who will support professionals with relevant news and updates whilst they navigate the challenges of the ongoing Coronavirus emergency. This initiative is particularly aimed at freelancers and micro businesses, who are expected to be amongst those hit hardest by the global coronavirus crisis.



With the rapidly changing nature of the COVID-19 outbreak, information and advice from government is constantly being updated. The Creative Industries have collated advice from across the sector to provide guidance to those in the creative industries who are affected by the Coronavirus. This can be viewed here.

The Technical Community

National Technician Development Centre

To support the government in the fight against COVID-19, the NTDC is providing its' resources to collate and disseminate key information regarding the access to a variety of resources at this difficult time their key aim is to provide knowledge exchange and sharing of resources to combat COVID-19. NTDC is working with partners across the UK to provide access to approved methodology for production and processes, PPE, equipment, consumables and reagents, as well as online training and webinars for technicians. To see resources click here.

The NTDC have also developed in collaboration with the IST and Manchester Metropolitan University an online portal for the recording of CPD and development activities. <u>CPD Central</u> allows you to record accurately CPD activities and if you supervise individuals you can set tasks for them to complete which becomes part of their CPD record. This has been reported to be a useful tool when it comes to annual appraisal.



HEaTED free courses to support the technical community

HEaTED have been undertaking a few changes recently yet its support for members is consistent. They are offering a number of free courses in management, laboratory skills and a course on sustainability skills in collaboration with University College London. HEaTED are the Higher Education and Technician's Educational Development (HEaTED) organisation that provide professional development and opportunities for the technical workforce. Their courses can be signed upto by contacting their email <u>heated@sheffield.ac.uk</u> or by calling 0114 222 9671.

Many members of the University Bioscience Managers Association (UBMA) and Technical Managers in University (TMU) are technical specialists, managers and technical staff predominantly in Higher Education playing their important roles in the fight against the virus.







Institute of Science & Technology



Our Corporate Affiliated organisations can receive a number of benefits from the IST including promotion / delivery of events and workshops for technical staff, support for and promotion of Professional Registration, validation of in-house training programmes etc. Other more bespoke benefits can be discussed, where appropriate.

Our Partners are those who we have collaborated with such as the NTDC to develop CPD Central and share knowledge of the sector, as well as UBMA, TMU and HEaTED or Newcastle University and the University of York by holding National Conferences together.

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https://istonline.org.uk/membership/corporate-affiliation/



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