

IRISH UNIVERSITIES HELP FIGHT THE COVID-19 PANDEMIC



Doctors Samer Arnous, Tony Moloney and Nick Barrett at University Hospital Limerick, testing University of Limerick produced visors and shield box.

Exec Summary

The COVID-19 pandemic has created unprecedented societal challenges.

The Irish university sector has maintained 'business as usual' to the greatest extent possible by a rapid transition to remote learning and assessment. Meanwhile, the sector galvanised into immediate action, contributing to the national emergency response in every way possible as the pandemic developed.

Our universities and their staff and students have, and are, making a hugely valuable contribution to the national efforts to fight the COVID-19 pandemic.

We have captured key highlights in this publication. A more comprehensive schedule can be found at <https://www.iaa.ie/covid-19/universities-help-fight-the-pandemic/>



Here are the key highlights of university efforts:

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Expert advice with staff and students on the frontline:

Expert advice has been the hallmark of dealing with the COVID-19 crisis. Leading academics from across the university sector have been on hand to guide and support the response:

- University leaders such as **Maynooth University** President, Philip Nolan and **University College Dublin's** Dr Cillian de Gascun, have headed up key groups in the National Public Health Emergency Team (NPHE).
- The Mathematical Modelling that provided an evidence base for all the key policy decisions of NPHE comprised more than 50 experts, the majority of whom were drawn from Irish universities.
- Some of our top researchers have come together in groups such as the HSE COVID-19 Laboratory R&D Product Solutions Group, to find fast-track solutions to the COVID-19 testing process.
- Staff and students with clinical backgrounds and experience have responded to the HSE call and are working on the frontline.

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COVID-19 testing and contact tracing:

Highly skilled diagnostic laboratory staff from our universities have been readily mobilised to undertake laboratory processing of samples and to take swabs from patients at testing hubs.

- Our researchers rose to the challenge of the scarcity of testing reagents with our labs rallying to produce lysis buffer, viral transport medium and other essential solutions.
- Six contact tracing centres have been set up and resourced on our campuses with hundreds of staff to support the HSE in this regard.

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COVID-19 research and innovation:

University research is being deployed to help tackle the pandemic, leveraging expertise from across our institutions.

- For example, **Trinity College Dublin's** COVID-19 Immunology Project is working to develop antibody testing, investigating immune responses in COVID-19 patients and the design of new drugs and vaccines.
- The **NUI Galway** COVID-19 Response Team developed a safer way to ventilate multiple patients from a single ventilator.
- **Dublin City University's** COVID-19 Research and Innovation Hub is focusing on a range of technology solutions in the areas of rapid testing (lab-based and point of care), minimising transmission and contact tracing.

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Specialist equipment and training:

Our universities have supplied specialist equipment and other devices required for diagnostic testing and otherwise. They have also provided specialist training.

- Personal protective equipment (PPE) has been supplied to frontline staff, 3D printers have been repurposed to support the production of masks, and the production of hand sanitisers has been supported.
- The **University of Limerick** has provided the HSE with a COVID-19 Prevention and Treatment handbook. It has also collaborated with the HSE in the development of a protocol for communications with patients in isolation and ICU in University Hospital Limerick.

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Facilities and field hospital spaces:

Our seven universities have made a range of facilities available to the HSE, the Gardaí and to other government agencies.

- Over 5,000 bed spaces have been provided in student accommodation blocks as possible step-down facilities.
- Specialist facilities have also been provided. For example, **University College Cork** has accommodated the temporary transfer of cancer treatment services from Cork University Hospital (CUH).
- Pledges have been made for potential field hospitals on our campuses.
- Audio-visual equipment, office space for Gardaí and lecture halls as training rooms for medical personnel have been provided.

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Supports to students:

Student health services and counselling services continue to operate on a full-time basis, via video and phone consultations and additional resources have been put in place to support students through this difficult and stressful time.

- Accommodation has remained open for international and national students who are unable to get home.
- A number of universities are offering on-campus accommodation to students in direct provision, students who have lost their private rental accommodation and to medical and nursing students working on the frontline.

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Volunteering, fundraising and assisting local communities:

In all seven universities, staff and students are volunteering to support a range of groups including frontline health staff, parents, older people, isolated rural communities, unemployed people, disadvantaged groups, SMEs, social enterprises and community and voluntary organisations. Students are being encouraged to seek volunteering opportunities through the IUA-run portal www.studentvolunteer.ie.

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Informed communication to the public:

Top academics and researchers from all our universities offer daily contributions on media on the virus itself and actions that will lead to its suppression and elimination. They also provide practical advice for those struggling to cope with social distancing and isolation, as well as commentary on the impact on the economy, society and the environment. They stimulate debate, challenge perceptions and most importantly they provide knowledge and explanations as people seek to understand their new normal. Many of our staff have become well-known names through regular appearances on radio and television stations including RTE, Newstalk, and Sky News.



Dublin City University Nursing student **Aoife Howard** and **Maurice Burke**, Chief Technical Officer with the DCU Nano Research Centre.

1

Expert Advice With Staff and Students on the Frontline



University College Cork Professor of Emergency Medicine, **Stephen Cusack**, holding the COVID-19 Remote Early Warning System (CREW), a wearable digital thermometer sensor to remotely identify healthcare staff who may be developing a temperature. CREW is being developed in partnership between UCC College of Medicine and Health, the Cork based software consultancy 8 West, The ASSERT centre and Tyndall National Institute at UCC.

Experts in national groups guiding the response:

The Irish Government is basing decisions on COVID-19 crisis management on the advice of the National Public Health Emergency Team (NPHET). The NPHET oversees and provides guidance and support to the implementation of the strategy to contain COVID-19 and is supported by an Expert Advisory Group as well as sub-groups formed in response to the crisis.

- **Dr Cillian de Gascun**, Consultant Virologist & Laboratory Director, National Virus Reference Laboratory, University College Dublin is a member of the NPHET and Chair of the Expert Advisory Group providing advice on COVID-19 to the HSE and NPHET.
- **Prof. Martin Cormican**, Professor of Bacteriology at NUI Galway, Consultant Microbiologist and member of NPHET's Expert Advisory Group is the HSE National Clinical Lead for Infection Prevention and Control.
- The **NPHET Epidemiology & Modelling Advisory Group** monitors and models infection rates and other key statistics to determine the appropriate response for Ireland. Maynooth University President, **Prof. Philip Nolan** chairs this group, assisted by academics from across the higher education system and the public sector.

Being able to determine infections through diagnostic testing is the focal point of the national response to the pandemic. There is an urgent requirement to escalate testing, isolation and contact tracing, which will provide the "backbone" of the global response and the re-opening of economies.

To support this crucial endeavour, an **HSE COVID-19 Laboratory R&D Product Solutions Group** has been formed. Under the guidance of the HSE, academic researchers from Ireland's universities and higher education institutes, together with industry leaders and clinical experts, are developing solutions to enhance the testing process.

This Group is looking at RNA extraction — a key step to releasing the viral particles so that they can be detected in samples and on antibody assays – tests which look at specific proteins produced by the body of an infected person. This Group reports to the **HSE COVID-19 Laboratory Capacity Taskforce** and is chaired by **Prof. William Gallagher**, Director, UCD Conway Institute.

The Minister for Health has established a **National Research Ethics Committee** (NREC) for COVID-19 to review research ethics applications for COVID-19 related health research, where an expedited approach is essential for timely commencement of a public health research study. The Committee comprises 15 members, eight of whom are from Irish universities.

To advise the Expert Advisory Group on the best approach to the national research effort to combat COVID-19, a Research Sub-Group has been set up by Dr Cillian de Gascun. This is chaired by **Prof. Cliona O'Farrelly**, Chair of Comparative Immunology & Biochemistry at Trinity College Dublin along with her colleague, **Prof Colm Bergin, School of Medicine**.

The Chief Medical Officer, Dr Tony Holohan, has convened a **National Medical Leaders Forum** that will be centred around information, planning and response to COVID-19 for senior leaders in the clinical community. **Professor Mary Horgan**, University College Cork and Trinity College Dublin's **Professor Orla Sheils** have been asked to participate in this forum.



Left to right: **Prof. Philip Nolan**, President of Maynooth University and Chair of the NPHET Epidemiology & Modelling Advisory Group • **Dr Cillian De Gascun**, Laboratory Director at the University College Dublin based National Virus Reference Laboratory and Consultant Virologist • **Prof. Martin Cormican**, NUI Galway, Consultant Microbiologist, member of NPHET's Expert Advisory Group and HSE National Clinical Lead for Infection Prevention and Control • **Taoiseach Leo Varadkar**, **Minister Simon Harris** and **HSE CEO Paul Reid** talking to staff at the HSE COVID-19 Assessment Unit set up at Dublin City University to assist patients needing assessment but not immediate hospital care.

Important Support by Staff and Students on the frontline:

Many university academics have clinical backgrounds and experience which they are now directing towards combating the virus and supporting patients. University staff and students are actively supporting the national programme of assistance and support to combat COVID-19.

- All universities expedited the completion and assessment of final year medical exams to increase the number of qualified doctors available. Medical and nursing students are also on placements with the HSE.
- **University College Cork (UCC)** College of Medicine & Health staff have gone on full-time secondment to the HSE Public Health Medicine Department. UCC School of Pharmacy PhD students have volunteered to Hospital and Community Pharmacies to aid in the provision of medicine. Staff in the UCC Clinical Research Facility are working on the Short Period Incidence Study of Severe Acute Respiratory Infection in COVID-19 patients.
- **Trinity College Dublin (TCD)** has seconded clinical staff to teaching hospitals. Staff and students in the health sciences are working on the frontline as healthcare providers. Students from the School of Pharmacy have been helping to keep pharmacies open.
- **NUI Galway** students and staff with medical and laboratory backgrounds are volunteering with the HSE and testing patients for COVID-19 in Galway.
- **University College Dublin (UCD)** has provided volunteer scientific personnel to support the COVID-19 testing response across hospitals and in industry.
- **Maynooth University's (MU)** Dr Andrew Hogan is assisting in a trial which is studying COVID-19 patients with Type II diabetes in St Vincent's Hospital.
- **University of Limerick's (UL)** Graduate Entry Medical School, School of Allied Health, Dept. of Nursing and Dept. of Psychology staff have returned to frontline work to support the HSE.
- **Dublin City University (DCU)** nursing staff are assisting the National Ambulance Service in home and nursing home testing.



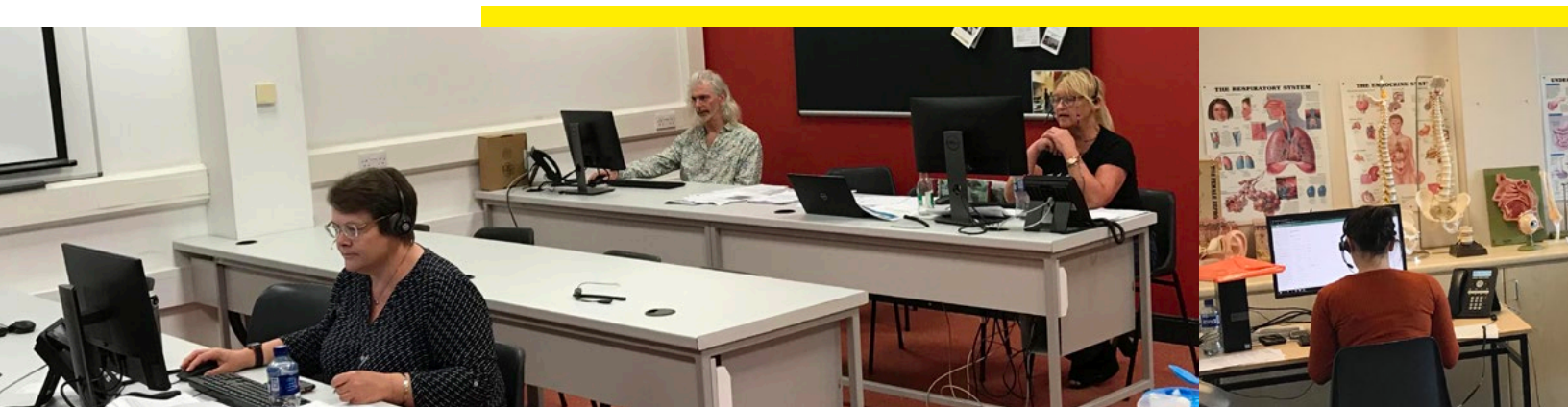
Contact tracing centre at Trinity Business School.

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COVID-19 testing & contact tracing



HSE doubles COVID-19 testing capacity through the National Virus reference Laboratory at University College Dublin.



Processing COVID-19 samples:

Diagnostic laboratory processing of samples requires skilled individuals who can be trained rapidly to operate in a clinical setting where precision and safety are paramount. Highly skilled individuals in each of our universities have been readily mobilised.

- In University College Dublin, the National Virus Reference Laboratory has tested thousands of samples since the start of the pandemic and continues to be the primary national COVID-19 testing laboratory.
- Trinity College Dublin has provided research fellows to undertake diagnostic laboratory processing of samples. Staff from TCD's School of Dentistry have been redeployed to work at testing hubs.

A significant impediment to processing samples was the scarcity of reagents needed to perform the diagnostic tests. Labs across higher education institutes rallied to produce lysis buffer, an essential solution required to extract viral particles to enable analysis.

- University College Cork's School of Microbiology is working with the Academy of Clinical Science & Laboratory Medicine to develop alternative reagents to the commercial reagents used for COVID-19 testing. UCC staff liaised with international colleagues and rapidly sourced a validated open-source detection protocol for COVID-19 for the CUH Diagnostic Lab. Dr Martina Scallan and Dr John McSharry, supported by Dr John O'Callaghan, have developed an alternative lysis buffer for testing which has been validated in the CUH Diagnostic Lab.
- Other reagents and buffers have been developed, produced and validated including Dublin City University's School of Biotechnology supporting Beaumont Hospital Lab by investigating the manufacture of reagents. Researchers at University College Dublin have developed a method and standard operating procedure for the lysis buffer used in RNA extraction which has been shared across institutions nationally.
- University of Limerick's Bernal Institute, Dept. of Chemical Sciences and Dept. of Biological Sciences scientists have prepared a validated lysis buffer for the HSE. The Bernal Institute is also providing technical expertise to University Hospital Limerick (UHL), while collaborating closely with HSE staff and colleagues in the Pharma sector on the testing reagents critical supply chain. Researchers are liaising with colleagues nationally to review alternative validated reagent preparation and use.



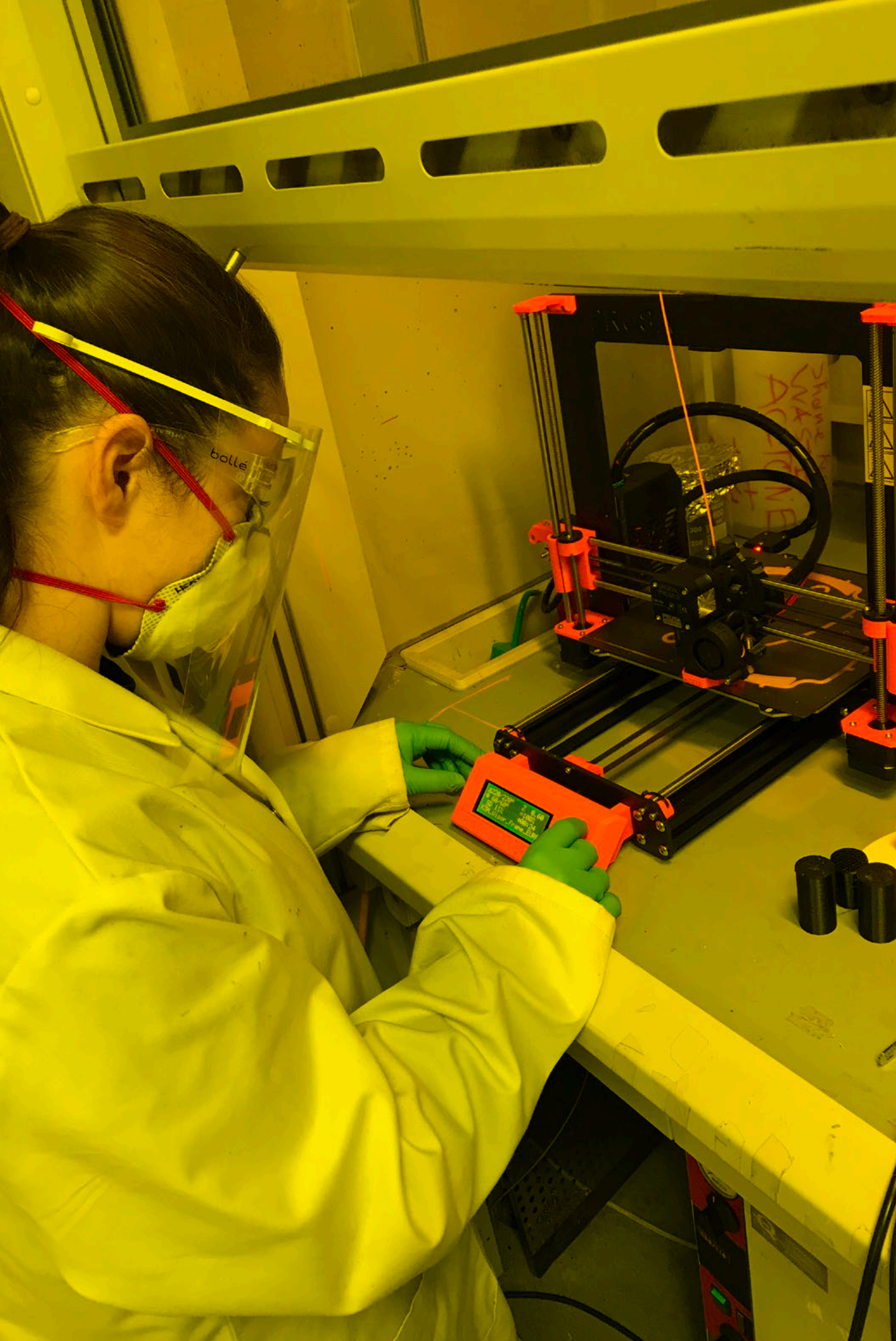
Left to right: Dublin City University Contact Tracing Centre. Contact tracing centre at Trinity Business School.

Kilian Mc Grane, director, contact management programme, **Gavin O'Neill**, national contact tracing centre manager, Trinity College Dublin's **Dr Sarah Doyle**, specialist in public health medicine.

Contact tracing centres:

The benefit of a national diagnostic testing regime is optimised in conjunction with comprehensive contract tracing.

- University College Dublin researchers, Dr Patrick Wall and Professor Mary Codd of the UCD School of Public Health set up Ireland's first Contact Tracing Centre outside the HSE to provide test results, information and advice to people who have had COVID-19 tests and to gather information on close contacts for tracing purposes. A contact tracing centre of 72 phone lines and 200 operators is located in the UCD sciences building. Clinical and public health expertise is provided onsite by several doctors from the UCD staff with a HSE public health lead assigned as back up support to the centre.
- University of Limerick in partnership with the HSE and Revenue, has set up the UL Virtual Hub with over 50 senior health sciences students trained to engage in contact tracing. They are averaging around 100 calls a day.
- University College Cork's Contact Tracing Clinicians are the first point of contact with an individual post-testing to inform them of their diagnosis. They conduct a detailed medical assessment, triaging or escalating as required to a Public Health Specialist/Consultant and identifying key groups such as health care professionals. Once completed, they route to the call centre for contact tracing of a positive result, which is manned by 50 UCC staff.
- Dublin City University is also operating a contact tracing centre with 50 phone lines and 100 staff. Trinity College Dublin has similar centres at D'Olier House and in the TCD Business School. A 40-seat contact tracing centre is also located at NUI Galway.



Dr Heather O'Connor, a postdoctoral researcher in UCD within the I-Form Advanced Manufacturing Research Centre, producing Face Shields for use by medical staff on the front-line against COVID-19.

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COVID-19 Research & Innovation



University College Cork and Cork University Maternity Hospital
collaborate on virtual visiting for premature babies.

Akara Robotics, founded at Trinity College Dublin, has produced Robot Violet, which can decontaminate a room in half the time, killing the coronavirus. • An emergency ventilator system designed as part of the open source programme at University College Dublin.



University research is being carried out across a broad range of areas and is informing our understanding of, and response to, the pandemic. While the fundamental challenge is a health-related emergency, this pandemic will have significant implications for society, the economy and future policy.

- The **Trinity College Dublin** COVID-19 Immunology Project is a research programme led by the Trinity Biomedical Sciences Institute in collaboration with Trinity Translational Medicine Institute and the Clinical Research Facility at St. James's Hospital. It involves infectious disease consultants, immunologists, respiratory disease physicians and IC specialists working with patients and is led by **Prof. Kingston Mills** and **Prof. Aideen Long**. The Project will develop new antibody tests, scale up antibody testing, investigate immune response in patients and design new drugs and vaccines for COVID-19.
- **Dr Conor McGinn** of Akara Robotics, a spin-out of Trinity's Robotics & Innovation Lab has developed Violet, the germ-killing ultra violet light robot which is clinically proven to kill viruses and bacteria. The HSE has fast-tracked its development. Violet will reduce dependency on the use of chemical-based solutions, which require hospital rooms to be vacated for several hours during sterilisation.
- **NUI Galway** start up Aquila Bioscience has developed a chemical-free wipe that effectively removes bacteria, viruses, fungi and biological toxins from surfaces. The wipes not only remove pathogens from surfaces but also 'trap' them within the material so prevent them spreading. The solution is non-toxic so can be used on human skin, mucosal surfaces and wounds. The project is led by **Prof. Lokesh Joshi**.
- **University College Dublin's Prof. Walter Cullen** is mapping the pandemic by cluster and county, while UCD computer scientists are developing new ways of facilitating contact tracing. **Prof. Fionnuala McAuliffe** from UCD and the National Maternity Hospital is undertaking a clinical trial with pregnant women who have contracted COVID-19. **Prof. Mark Coyne** is involved in a convalescent serum study with clinical trials involving the use of anti-SARS-CoV-2 serum.
- **Prof. Chris Brunsdon** from **Maynooth University's** National Centre for Geocomputation is a member of the Public Health Emergency Team modelling subgroup. The Centre is working on monitoring of social distancing in public spaces.
- **Maynooth University's** Joanna Mc Hugh Power, Rebecca Maguire and Sean Commins are conducting a study on loneliness and social isolation during social distancing.
- The **NUI Galway** Inspire Initiative has a number of collaborative projects spanning the journey of the virus from transmission to critical care and recovery. NUI Galway, NCAD, UHG, multinational MedTech Companies and Start-Ups have rapidly developed, verified and are now implementing solutions that will support health care workers response to COVID-19.
- **University College Cork's Dr. Alan Morrison** is modifying the design of intelligent lighting incorporating UV-LEDs to develop a contactless sterilisation mechanism that can be used for sanitisation in clinical settings.
- **UCC's Prof. Cora O'Neill** has retargeted research into brain degenerative disease of the aging to COVID-19 due to its predominant impact on the elderly health and people living with dementia.
- **Maynooth University** and **Trinity College Dublin** academics Dr Philip Hyland and Dr Frédérique Vallières are collaborating on a multi-wave COVID-19 Psychological Survey on vaccine hesitancy and the mental health effects of quarantine and physical distancing measures.



Trinity College Dublin and AIB collaborate on research hub to battle COVID-19.

- COVID-19 Remote Early Warning System (CREW) is a quarantine management platform that will allow the remote identification of healthcare staff who may be developing a temperature symptomatic of COVID-19 and who therefore should not present to work. CREW combines existing technologies in an innovative way to allow remote continuous monitoring of healthcare workers to ensure early and reliable detection of a temperature. University College Cork, **Tyndall National Institute** and software consultancy 8West are partners on this project.
- Research staff in **UCC's** School of Microbiology have developed rapid-response research projects aimed at detecting, diagnosing or mitigating COVID-19 infections using a range of microbiological, virological, immunological and computational approaches.
- Staff at the HRB Clinical Research Facility and the **Tyndall National Institute** at **UCC** are collaborating with industry to test and perfect an Ultra-Fast Single Patient COVID-19 Health Screening Tool.
- **University of Limerick** researchers are working with HSE on digitising their ward maps for use in a hospital acquired infection app adapted for COVID-19 crisis.
- **Dublin City University** School of Humanities and Social Sciences, **Dr Caitriona Dowd** has re-directed a research network on humanitarian resilience in South Sudan to build in a specific pillar on COVID-19 response with partners in South Sudan and the wider region.
- **Dr Patrick Cadwell** in the **DCU** School of Applied Language & Intercultural Studies is researching sign language interpreting in the COVID-19 Crisis in Ireland and the UK.
- **DCU's Dr Louise Hopper** is carrying out a study to capture the impact of the uncertainty surrounding the COVID-19 outbreak. The study aims to identify useful coping skills and habits for managing wellbeing as well as potential predictors for problematic mental health during a pandemic.
- **Prof. Mary Rogan**, at **Trinity College Dublin**, is conducting a research project called Prisons: the rule of law; accountability and rights. Prisons are particularly vulnerable to infectious disease. Many prisoners have underlying health conditions, some are in older age groups, and there are pregnant women in prisons across the world.



New approaches to Respiratory Support:

Approximately 15% of individuals with COVID-19 develop moderate to severe disease and require hospitalisation and oxygen support, with a further 5% requiring admission to an Intensive Care Unit and supportive therapies including intubation and ventilation. Researchers and academics are aiding our national response and exploring new approaches.

- The Inspire Initiative, led by **Professors John Laffey** and **Martin O'Halloran**, is an industry-academic partnership based at **NUI Galway**, designed to deliver fast-to-clinic medical devices. The team is addressing topics ranging from infection control to improving oxygen delivery to critically ill patients.
- The Galway VentShare is a rapid response team, including **NUI Galway** expertise, investigating a safer way to ventilate multiple patients from a single ventilator. After intensive design and testing, they have developed a ventilator system which can provide

independent tidal volume titration to two patients at the same time. A second project seeks to reduce the infection risk associated with high-flow oxygen delivery. If successful, this will reduce dependency on ventilators, enabling more patients to receive life-saving oxygen therapy.

- In collaboration with the Irish Society of Chartered Physiotherapists and the Lecturers in Respiratory Physiotherapy from other Universities, **University College Cork's Dr Joseph McVeigh** is advising and upskilling physiotherapists who are returning to work or being redeployed.

This is a snapshot of research activity in our universities that has taken place since COVID-19 emerged. Many university researchers and academic staff are responding to calls from national funders (IRC, HRB, SFI, EI, etc) and international research funders including the European Commission.

Researchers involved in international networks that are being leveraged for Ireland:

In addition to our universities leveraging multidisciplinary research and innovation expertise from across our academic institutions research leaders are also key players in large international research collaborations working directly or indirectly on COVID-19.

Prof. Pat Dolan in **NUI Galway's** Institute for Lifecourse and Society and UNESCO Chair for Youth Civic Engagement is co-leading an International Global Youth Response to COVID-19 on how empathy, kindness and compassion are key to limiting suffering, protecting the vulnerable and quickly recovering in the aftermath of the crisis.

University College Cork's Prof. Gerry Killeen, School of Biological, Earth & Environmental Sciences, collaborates with active players in the global COVID modelling effort and is qualified to critically evaluate any models and predictions.

UCC's Dr Zubair Kabir, School of Public Health, is a collaborator on the Global Burden of Disease (GBD) Study with the Institute of Health Metrics & Evaluation (IHME) in the University of Washington, Seattle. Dr Kabir also contributed to the IHME COVID-19 forecasting modelling study for Irish data just published on 7th April.

Alistair Nichol, Professor of Intensive Care Medicine at **University College Dublin** and St Vincent's University Hospital, is leading the REMAP CAP clinical trial. The trial tests interventions for COVID-19 in critically ill patients, captures the outcomes and analyses data across an international network in a global effort to reduce the impact of COVID-19 in intensive care settings. Rapid data sharing with others working in the area is underway and will inform decision making.

Alistair Nichol, Professor of Intensive Care Medicine at University College Dublin and St Vincent's University Hospital, is leading the REMAP CAP clinical trial • **Colin Keogh**, a research engineer at University College Dublin and co-founder of Open Source Ventilator (OSV) Ireland.



University College Dublin's Profs Cormac McCarthy and Paddy Mallon are joining the WHO International Trial Solidarity, which looks at the use of remdesivir, chloroquine, hydroxychloroquine, lopinavir / ritonavir and b interferon to treat COVID-19.

Dublin City University's Edoardo Celeste is carrying out research on privacy and State measures to address COVID-19 in the context of the Digital Constitutionalism international research network. **Roisin Lyons, DCU**

Business School is one of the cofounders of OSVX which is a platform for open-source innovation designs for the COVID-19 crisis.

Led by **Prof. Molly Byrne**, researchers in the **NUI Galway** Health Behaviour Change Research Group at the School of Psychology are collaborating with over 100 behavioural scientists from more than 20 countries around the world on an international study evaluating awareness and responses to the pandemic.

Academics providing policy advice to healthcare bodies and governments:

In addition to providing expertise to the national groups listed previously which informs national decisions, there are many other examples of university academics and researchers as policy advocates.

- **Maynooth University's Prof. Paul Moynagh**, is advising national policy on testing strategy.
- **Trinity College** Dublin researchers in the School of Nursing & Midwifery led by **Prof. Joan Lalor** have developed a protocol for maternity care during the COVID-19 crisis that is openly available to healthcare providers around the world.
- **Trinity College** Centre for Ageing and Intellectual Disability has created a range of resources related to COVID-19 for people with an intellectual disability.
- **University College Cork's Prof. Ursula Kilkelly**, School of Law, together with Prof Laura Lundy QUB are developing research to explore children's rights and COVID-19 in a policy context.
- **University College Dublin's Prof. Rachel Crowley** is developing an ethical decision-making framework to guide pandemic decision making.
- **Prof. Aidan Regan** of **UCD** led the submission of an open letter, backed by over 400 academics, calling for the European Council of Ministers to raise finance for the eurozone through a eurobond.
- **Dublin City University's Dr Patrick Cadwell** advised officers in the Wuhan Ministry for Foreigners on the provision of translated content on COVID-19 for foreign nationals in China.



Trinity College Dublin PPE donation to St James's Hospital.

4

Specialist equipment and training



Respiratory Hub Training for GPs at NUI Galway.

Irish universities have donated personal protective equipment to frontline staff, delivered 3D printers and diagnostic tools to local hospitals and instigated production of hand sanitiser.



Dublin City University School of Mechanical & Manufacturing Engineering & I-Form produce PPE for frontline health staff • One of 100,000 visors produced by a collaboration between University of Limerick's Rapid Innovation Unit and UL Hospitals Group.

Personal Protective Equipment (PPE):

The critical need for PPE emerged at pace and a global shortage ensued. Irish universities gathered all supplies available and provided these to the HSE and its frontline workers.

- **Prof. Derek O'Keeffe** from **NUI Galway** and **Dr Kevin Johnson** from **University of Limerick** created a new website www.covidmedsupply.org which connects HEI and industry PPE stock to hospitals worldwide.
- **Dublin City University** has delivered PPE and 3D printers to local hospitals. **Maynooth University** has provided PPE to Tallaght University Hospital (TUH) and Naas hospital. **Trinity College Dublin** has provided PPE to St James Hospital and TUH.
- **University College Cork** School of Pharmacy has donated all available PPE to Cork University Hospital (CUH). The School of Pharmacy has also instigated production of hand sanitiser. It is envisaged that this will be particularly valuable when the University enters

a ramp up phase after the current regime of restriction. UCC's Biological Services Unit has donated all available PPE to the Red Cross.

- **University College Dublin** has donated over 55,000 pairs of nitrile gloves to the Mater Hospital, and UCD College and Institute stores have been facilitating requests by the HSE and clinical colleagues to secure additional equipment and consumables to support the wider COVID-19 testing response.
- All **University of Limerick** departments, schools and labs have donated PPE to HSE, Gardaí and frontline staff.
- **Dublin City University** staff have produced 50 litres of hand sanitiser for use in the contact tracing centre and local hospice. **Trinity College Dublin** staff produced 100 litres of hand sanitiser and provided it to St James Hospital.



UCD Centre EMS preparing Personal Protective Equipment as part of a daily training session
 • MU's Kathleen Lonsdale Institute for Human Health Research, donated PPE from its labs to Naas Hospital • Respiratory Hub Training for GPs in NUI Galway.

Medical and specialist equipment:

To carry out diagnostic testing, it is essential to have the right equipment that is specifically matched with the commercially manufactured test kits.

- **Dublin City University** has loaned 2 PCR instruments to NVRL/Enfer. **Trinity College Dublin** has made available Q-PCR Instruments for testing.
- The **University College Cork** School for Microbiology has made available to the CUH diagnostic lab 2 Roche Light Cycler instruments which are the main platform

for COVID-19 testing. APC Microbiome SFI funded research centre, based in **UCC** has also provided a biosafety cabinet to a new testing facility established in Bandon and has supplied ventilators, infusion pumps, syringe drivers and IV training arms to the HSE.

- **Maynooth University's Prof. Sean Doyle** is involved in the supply of PCR testing equipment to National Virus Testing laboratory.

Training and support services:

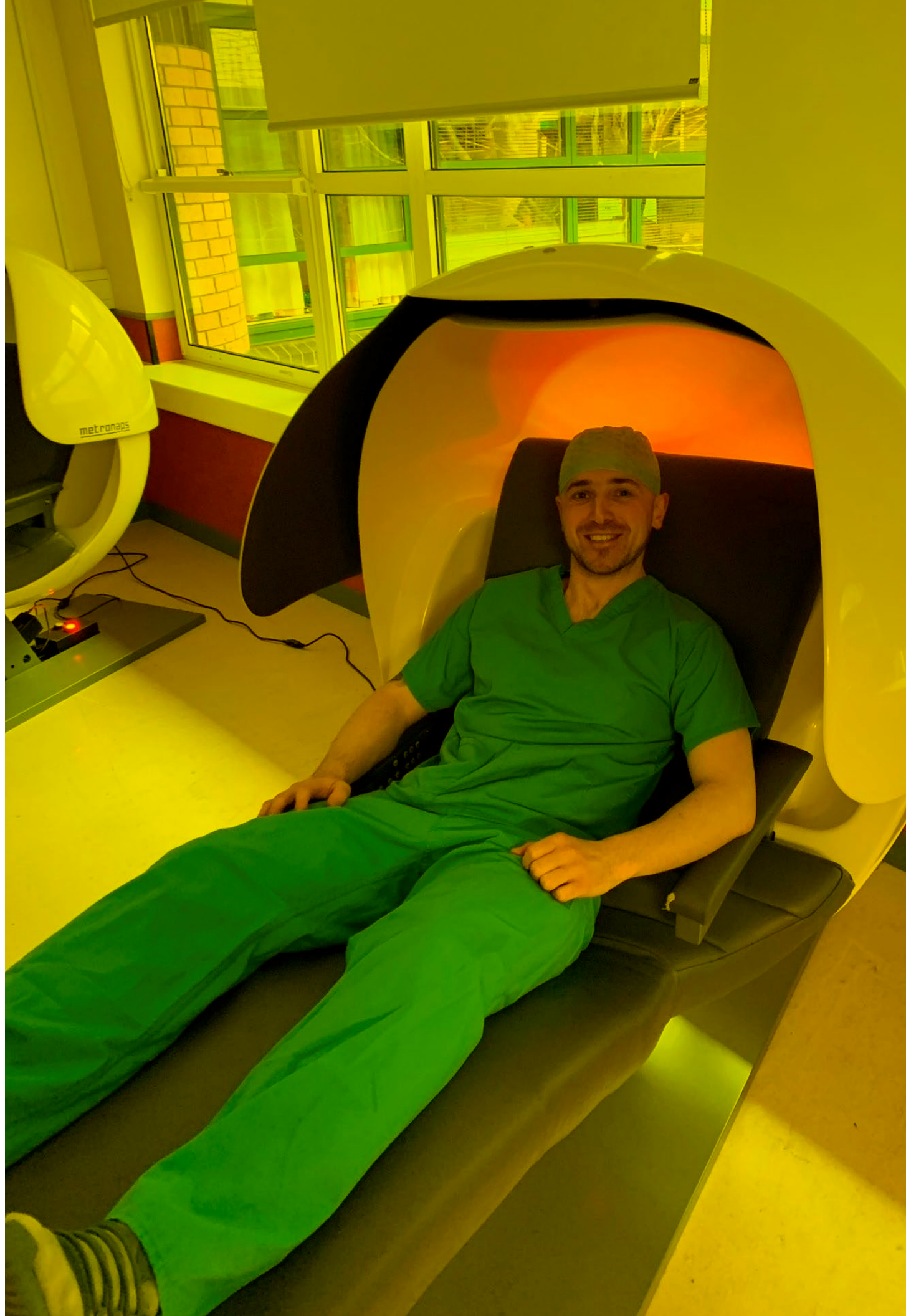
University representatives have offered support in the form of specific COVID-19 training to testers, contact tracing volunteers and call centre staff. Other support services include the development of protocols to communicate with patients in isolation and ICU.

- **University of Limerick's Dr Ann Ledwith** has been training the HSE Management Team with specific focus on COVID-19.
- **Dublin City University** nursing staff are involved in Train the Trainers for COVID-19 testers.
- **Trinity College Dublin** staff are providing training to contact tracing centre clinical staff volunteers. **UCC's** School of Public Health is training all contact tracing volunteers in its centre. **UCD** is providing public health academics to train staff for the HSE call centre.
- **University of Limerick's Dr Guang Ren** has provided the HSE with a COVID-19 Prevention and Treatment handbook that was devised by The First Affiliated Hospital, Zhejiang University School of Medicine.
- **University of Limerick's Prof. Ita Richardson** collaborated with the HSE in the development of a protocol for communications for patients in isolation and ICU in University Hospital Limerick (UHL). This will be used by the Patient Advisory and Liaison Support within UHL.
- **University of Limerick's Michelle O'Donoghue** and the Autism@UL Special Interest Group are compiling advice on supporting wellness in autistic adults and parents of children with autism for the HSE.
- **University College Cork** and **University College Dublin** have also together founded a National Foundation module in Critical Care Nursing – an online accelerated programme aimed at increasing the number of nurses available to provide critical care.
- **University College Cork's Dr Menon Margassery** has been educating Indian students about COVID-19, including mental health counselling, guidance on various govt legislations.
- **NUI Galway's Prof. Martin Cormican** has, through the HSE Health Protection Surveillance Centre, produced a series of COVID-19 video resources for clinical and non-clinical staff.

University-developed websites and apps:

As well as www.covidmedsupply.org, **Prof. Derek O'Keeffe** from **NUI Galway** with **Dr Kevin Johnson** from **University of Limerick** have created a second website to track the symptoms of the virus. www.MyCovidSymptoms.ie is a research application tool to quickly and easily track the spread of COVID-19 by gathering anonymous symptom data. It will result in more accurate estimations of the prevalence of COVID-19 infections which will be provided to the Irish health authorities to assist with planning.

Maynooth University Library lent its napping pods to Tallaght Hospital to provide much-needed respite for frontline health care workers.



5

Facilities and Field Hospital Spaces



Cancer patients from Tallaght University Hospital are receiving treatment now at Trinity Centre for Population Health.



University College Cork hosts HSE Oncology service during COVID-19 crisis. (Left —right): **Valerie O'Mahony**, Oncology Clinical Nurse Manager II, Mercy University Hospital; **Margaret McKiernan**, Director of Nursing, MUH; **Dr Derek Power**, Oncology Consultant; **Nuala Walshe**, Clinical Skills Manager, School of Nursing and Midwifery, UCC; **Marie O'Connor** Oncology Staff Nurse, MUH; **Professor Josephine Hegarty**, Head of School of Nursing and Midwifery, UCC; **Dr Ayman Amasayb**, Oncology Registrar pictured at the School of Nursing and Midwifery, UCC.

Facilities:

Our seven universities have made a range of facilities available including accommodation, space for potential field hospitals, and for office and medical work.

- Over 5,000 bed spaces in on-campus student accommodation for HSE staff.
- Accommodation has also been kept open in many universities for students, including international students who are unable to go home and students in direct provision.
- **University College Cork** has accommodated the temporary transfer of cancer treatment services from Cork Hospitals. CUH and Mercy University Hospital have moved their Oncology outpatient facilities to the Brookfield Health Sciences complex.
- The **UCC** INFANT space in the Paediatrics unit of CUH is now the new location for Clinical Neurophysiology. The Outpatients/Warfarin clinics from CUH have relocated to Cork University Dental School.
- **Maynooth University** has partnered with Ireland's Call, which was started by Irish businessman and MU alumnus Neil Sands. 20 rooms at MU's campus will become available free of charge to returning health workers and frontline health care workers who need isolation away from their own home during the pandemic. MU Buildings and audio-visual equipment have been made available to Gardaí.
- At **Dublin City University** the main gym hall on Glasnevin campus and 2 sports halls on St Pat's campus are available to the HSE as potential field hospitals. Similar provisions have been made at **University College Cork** and at **University of Limerick**. DCU also has a 5 Bay Clinical Hub on Glasnevin Campus.
- **Trinity College Dublin** classrooms at Trinity Centre have been provided to St. James' Hospital for staff training use. It has also provided the Institute of Population Health at Tallaght University Hospital for clinical activity.
- **NUI Galway** has provided Medical Academy facilities in Letterkenny, Castlebar, Ballinasloe and Sligo to the HSE. The university has also enabled its Clinical Science Building in University Hospital Galway to be used by the HSE for training purposes. On campus a 150-bed step down facility is available in Aras na Mac Leinn, O'Donoghue Centre.

6

Support to Students



Conor Clancy and **Aubree Worobetz**, second year medical students at the UL Graduate Entry Medical School, who live in the same house, pictured working on the virtual contact tracing.



All seven universities are endeavouring to look after the health, wellbeing and academic progress of all current students. Student health services and counselling services continue to operate on a full-time basis, via video and phone consultations and additional resources have been put in place to support students through this stressful time.

In each university accommodation has remained open for international and national students who are unable to get home. A number of universities are offering on-campus accommodation to students who have lost their private rental and to medical and nursing students working on the frontline who have been unable to remain in their private rental accommodation.

All learning and teaching for the seven universities has gone online delivered through each university's Virtual Learning Environment and students are currently completing their academic year as planned, with alternative plans now in place for exams.

In putting in place these revised assessment procedures, universities are applying a number of key principles and approaches including:

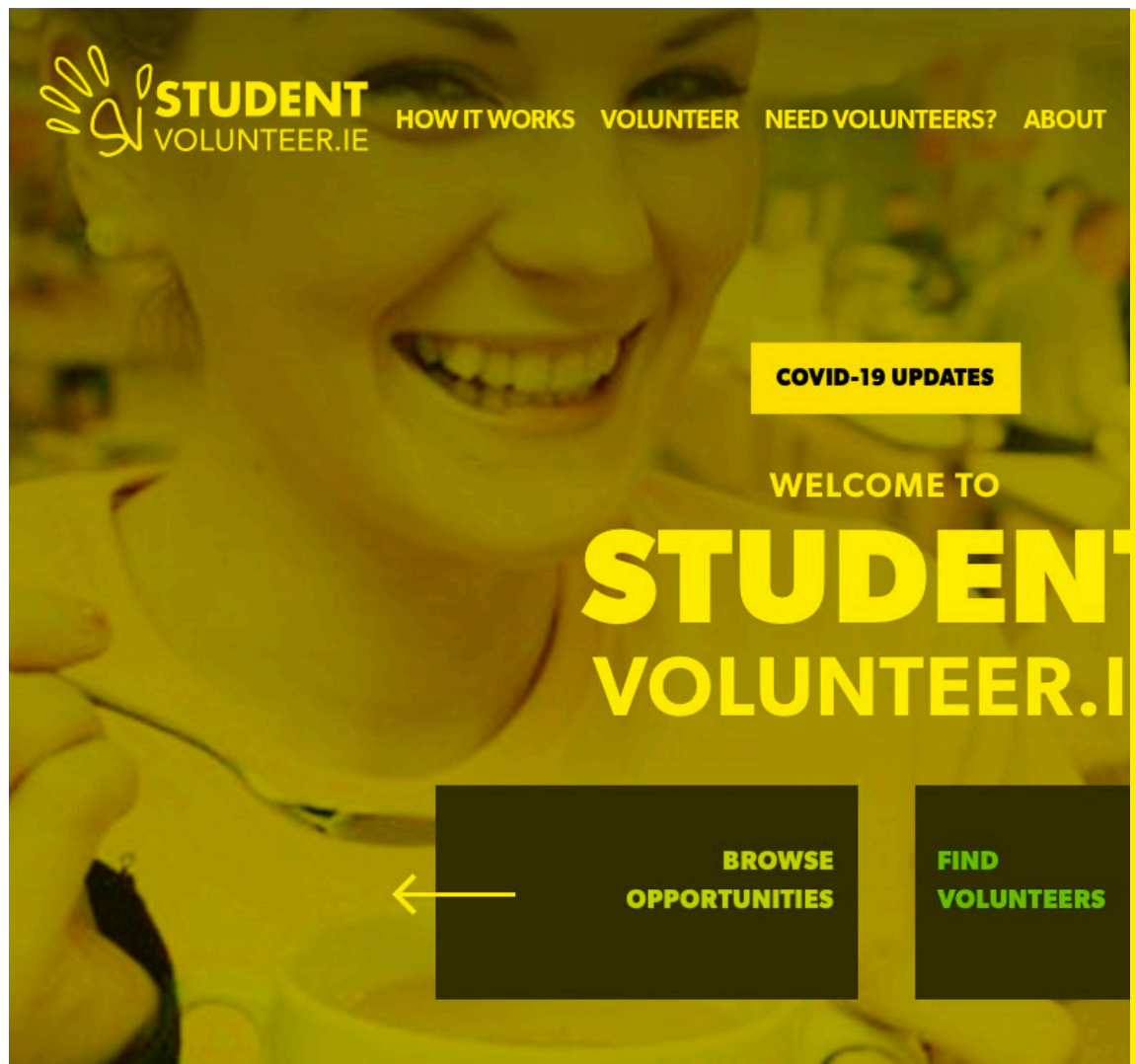
- Ensuring that students suffer no academic disadvantage, with all universities introducing flexible arrangements in these exceptional circumstances in relation to exam formats, marking and re-sits if required.
- A recognition that some students may have technical issues with poor connectivity, exam formats and timing adjusted appropriately by the flexible arrangements in place in each university.
- Supports and arrangements for students with recognised disabilities. The university disability services are working with both academics and students to ensure these are in place.

The seven universities are working with the CAO and other stakeholders to ensure that new university students can begin their studies as soon as possible after the publication of the 2020 Leaving Certificate results. This work and all planning for the 2020-21 academic year will continue to be guided by the latest public health advice.

- **Dublin City University** is offering teachers and lecturers a free online course to help them make the most of technology to continue teaching their own students through the COVID-19 school and college shutdown. The course is open to teachers, lecturers and trainers around the world and over 3,000 educators from more than 125 countries have signed up.
- **University of Limerick's Prof. Conor Ryan** is collaborating with Scoilnet to develop and roll out an online platform for support of teachers and schools, which will provide an interactive tool for Leaving Cert students.
- Academics from **University College Cork** and **University College Dublin** are working with RTE to provide educational programming for primary school children through its daily Home School Hub broadcasts.
- **Maynooth University** is working with Midlands Science on youth science programme broadcast via social media channels.

7

Volunteering, Fundraising and Assisting Communities



Trinity College Dublin MedDay fundraiser donated to COVID-19 efforts.

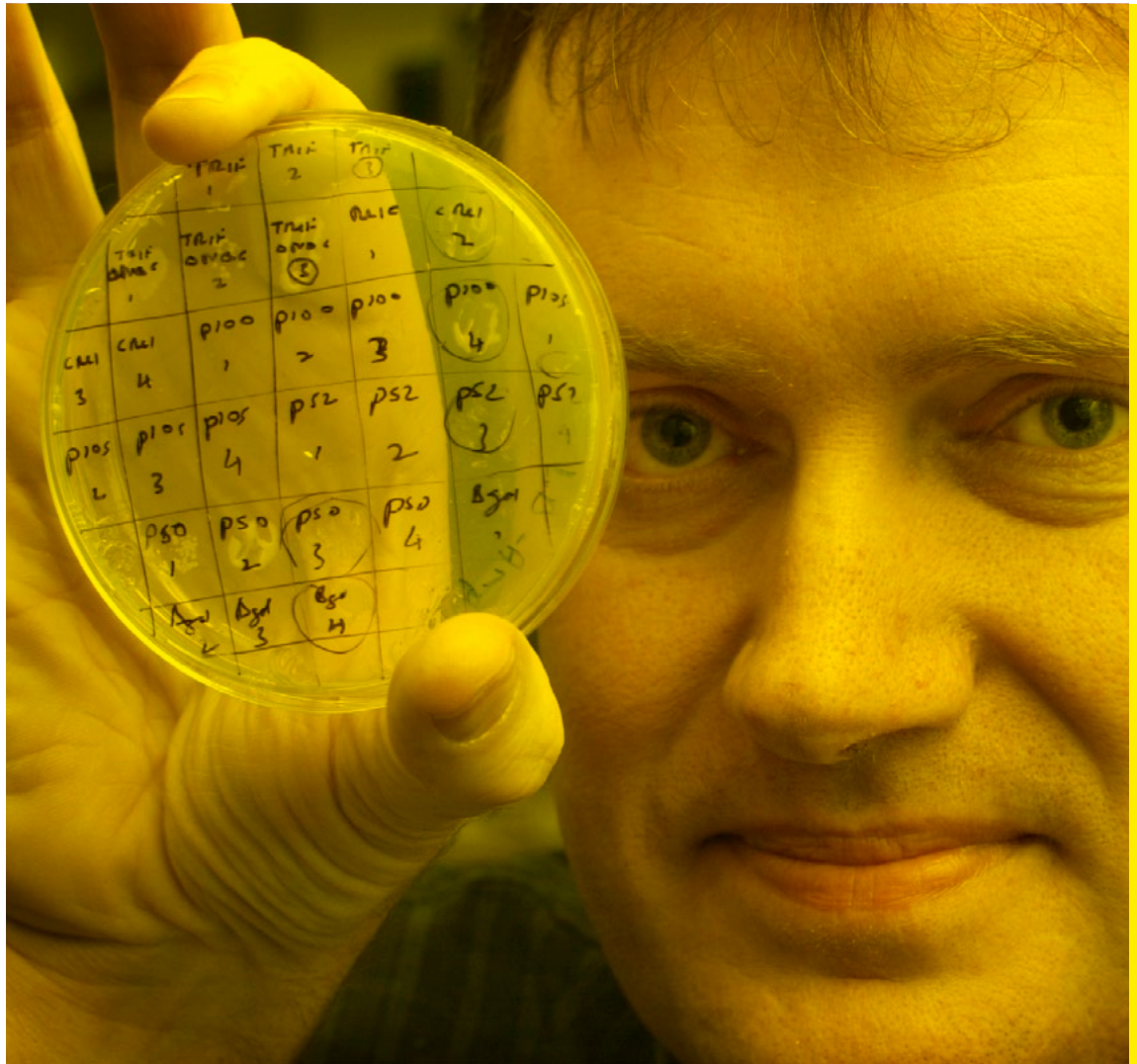


In all seven universities, staff and students are volunteering to support a range of groups including frontline health staff, parents, older people, isolated rural communities, unemployed people, disadvantaged groups, SME's, social enterprises and community and voluntary organisations etc.

- Students are being encouraged to seek volunteering opportunities through the portal www.studentvolunteer.ie.
- **'UCC Responds'** is an initiative to encourage staff and student community support initiatives and present them coherently to the public.
- Medical students at **University College Dublin** have set up the COVID-19 Medicine Deliveries Group, which delivers medicines to vulnerable people who are self-isolating. Over 800 students have volunteered and the group has linked with 355 pharmacies across the country.
- **Trinity College Dublin's** Research Motor Neurone group led by **Prof. Orla Hardiman** has innovated its services in collaboration with IMNDA to ensure people with MND receive 24/7 cover and home visits.
- **University of Limerick** medical student, **Cathal Freeman**, has raised €54,000 for frontline healthcare workers fighting COVID-19 by completing a marathon-length run around a circuit close to his home on UL campus (while soloing a sliotar throughout.)
- Tech2Students is part of an innovative collaboration between **Trinity College Dublin** Access and Camara Education Ireland, supported by ESB. The initiative is to gather donations of disused laptops for redistribution to vulnerable secondary school students who need them.
- **Eileen Culloty** from the **Dublin City University** School of Communication is working with Age Action to create resources for older people around COVID-19 disinformation and scams.
- Academics from **Dublin City University's** School of Health and Human Performance and the Insight SFI Research Centre for Data Analytics have teamed up for a four-part series of Facebook live events providing practical advice on how adults and children can stay active at home.

8

Informed Communication to the Public



Trinity College Dublin Professor of Immunology **Luke O'Neill** has been on RTE, MTV News, RTE Junior, Clair Byrne Live discussing ways to strengthen the immune system and sharing information on COVID-19.



John Concannon, Vice President for Development NUI Galway • **Dr Akke Velinga**, Lecturer in epidemiology, NUI Galway
• Maynooth University's **Prof. Paul Moynagh** has discussed testing strategy on many media outlets.

In these uncertain times, the views of experts provide clarity and reassurance. Academic researchers from across the higher education sector in Ireland offer daily contributions on the virus and actions that will lead to its suppression. They also provide practical advice for those struggling to cope with social distancing and isolation, as well as commentary on the impact on the economy, society and the environment.

- John Concannon, **NUI Galway** Vice President for Development, has been tasked with coordinating the national public communications campaign on the coronavirus outbreak.
- **Maynooth University's Prof. Paul Moynagh** has discussed testing strategy on RTE Morning Ireland and many other media outlets.
- **Dr Akke Velinga** of **NUI Galway** participated in an RTE 'Explained by Prime Time' piece seeking to break down knowledge about the nightly confirmed positive number.
- **Trinity College Dublin's Prof. Kingston Mills** has appeared on national radio and television broadcasts as an expert commentator including Prime Time and Morning Ireland. **Prof. Luke O'Neill** has provided expert commentary on Prime Time, Newstalk, Sky News and contributed to print media. **Dr Kim Roberts** has appeared on Prime Time and in print media to explain social distancing and to discuss how viruses are transmitted.
- **Trinity College Dublin's Prof. Catherine Comiskey** from the School of Nursing & Midwifery has appeared on broadcast media to give expert commentary on the crisis from a health sector perspective.
- **University College Cork's Prof. Gerry Killeen** published an article in the Irish Examiner entitled "Slowing the growth of the COVID-19 epidemic is simply not enough". He has also adapted a scientific paper into a series of articles entitled "COVID-19: A reality check on the numbers".
- **Trinity College Dublin's Arts and Humanities and the Long Room Hub** held a number of online events for the general public covering the topics of democracy and climate change in a pandemic.
- **University College Cork's Dr Frances Shiely** and **Dr Darren Dahly** are Evidence Advisors on iHealthFacts, ie. Dr Dahly has organised a group of clinical trial statisticians to evaluate COVID-19 related clinical trials. One of their 4 expert reviews has been downloaded over 24,000 times.
- **University College Dublin's Prof. Liam Delaney**, has contributed expertise around behavioural economics to the Irish Times, looking at the concept of behavioural fatigue. He is also working with the HSE to better understand how to help incentivise key behaviours in response to the pandemic.
- **University College Dublin's Prof. Paddy Mallon**, Professor of Microbial Diseases in the School of Medicine and a Consultant in Infectious Diseases in St Vincent's University Hospital, has contributed to podcasts, radio interviews and television interviews in recent weeks.
- **University College Dublin's Prof. Patrick Wall** was on The Tonight Show on Virgin Media One to explain how UCD set up the first operational satellite contract tracing centre for the HSE. UCD's **Dr Virginie Gautier** explained the science behind social distancing on RTE Prime Time.
- **University of Limerick's Prof. Liam Glynn** and GP, Dr Mike O'Callaghan are providing daily updates on the national COVID-19 crisis using reliable, validated information on Twitter, #COVIDWATCH, endorsed as an ICGP/UL collaboration. Prof. Glynn has also provided expert opinion on RTE and in national newspapers.
- **Dublin City University's Eoin O'Malley** has provided commentary on political leadership in context of COVID-19, **Eileen Culloty** on COVID-19 conspiracy theories and counteracting disinformation, **Prof. Anthony Staines** on the epidemiology of COVID-19.

The Irish Universities Association is the voice of the university sector in Ireland. We are committed to representing the interests of our seven member universities as key contributors to the economic, social and cultural well-being of Ireland.

For more see <https://www.iaa.ie/covid-19/universities-help-fight-the-pandemic/>

www.iaa.ie
@IUAofficial
48 Merrion Square, Dublin D02PK02

