



How are TCD researchers helping to tackle the COVID-19 pandemic?

The Covid-19 crisis is the greatest challenge we have faced in recent times and experts around the world have rallied to the cause to try and deal with the pandemic. TCD researchers are working hard to understand SARS-CoV2 and to develop solutions and protect our communities.

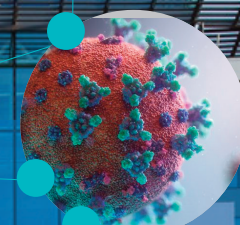
We developed the **COVID-19 Immunology Project** to bring together doctors in Infectious Disease, Immunology, Intensive Care Medicine and Respiratory Medicine based in St James Hospital (SJH) and Tallaght University Hospital (TUH) with leading Immunologists to create a centre of excellence in Trinity College Dublin. Our team has a variety of projects underway based on campus in TTMI and TBSI (pictured) and in SJH and TUH.

Investigating the Immune Response to the Virus

We are interested in understanding the immunological and molecular basis underlying COVID-19 and have studies examining disease progression and immune response to infection/vaccination in young vs old, male vs female, socioeconomic studies and in those with underlying medical conditions. This will allow us to identify risk factors in determining disease severity and progression.



Trinity COVID-19 Immunology Project



We have developed the largest COVID-19 biobank (collection of samples) in the country.

These studies require us to grow different strains of the SARS-CoV-2 virus within our Containment Level 3 Laboratory.

Therapeutics and Vaccine Studies

Using in house expertise we are evaluating novel therapeutic agents to block SARS-CoV2 infection and the associated inflammation. We are also undertaking studies to design future improved vaccines that induce long-term sterilizing immunity, thereby preventing spread of the virus.

Development & Validation of SARS-CoV-2 Screening/Diagnostic Methods

Since the beginning of the pandemic, we were interested in developing novel testing strategies to identify SARS-CoV2 infected individuals looking both at the virus and the host Immune response. We developed TriniScreen- a rapid and cost-effective method for screening for SARS-CoV2 infections in students and staff at Trinity. Trinity is participating in UniCov, a randomised controlled clinical study evaluating rapid antigen tests as a means of detecting SARS-CoV2 detection in Ireland. We have also developed serology test that detects the production of antibodies to SARS-CoV2 infection/vaccination.

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Education and Public Engagement

Researchers from our team regularly contribute to initiatives (TV, radio, education events) to help explain the scientific research behind the pandemic to the public.

We also collaborate with researchers from international institutions such as the Whitehead Institute, Harvard and the Institut Pasteur and we are making meaningful contributions in the global fight against COVID-19. We have published multiple scientific articles covering a range of themes related to COVID-19.

"When the COVID19 pandemic started several immunologists in TCD began working on SARS-CoV2, given the unfolding situation. This led to the establishment of the COVID-19 research hub where we have built a team of scientists, working together to share ideas and provide feedback on the research we are doing. Our labs want to play their part in the fight against COVID19, the biggest public health emergency in the past 100 years."

Professor Luke O'Neill, pictured here in his lab in TBSI.



More information on our project can be found [here](#)