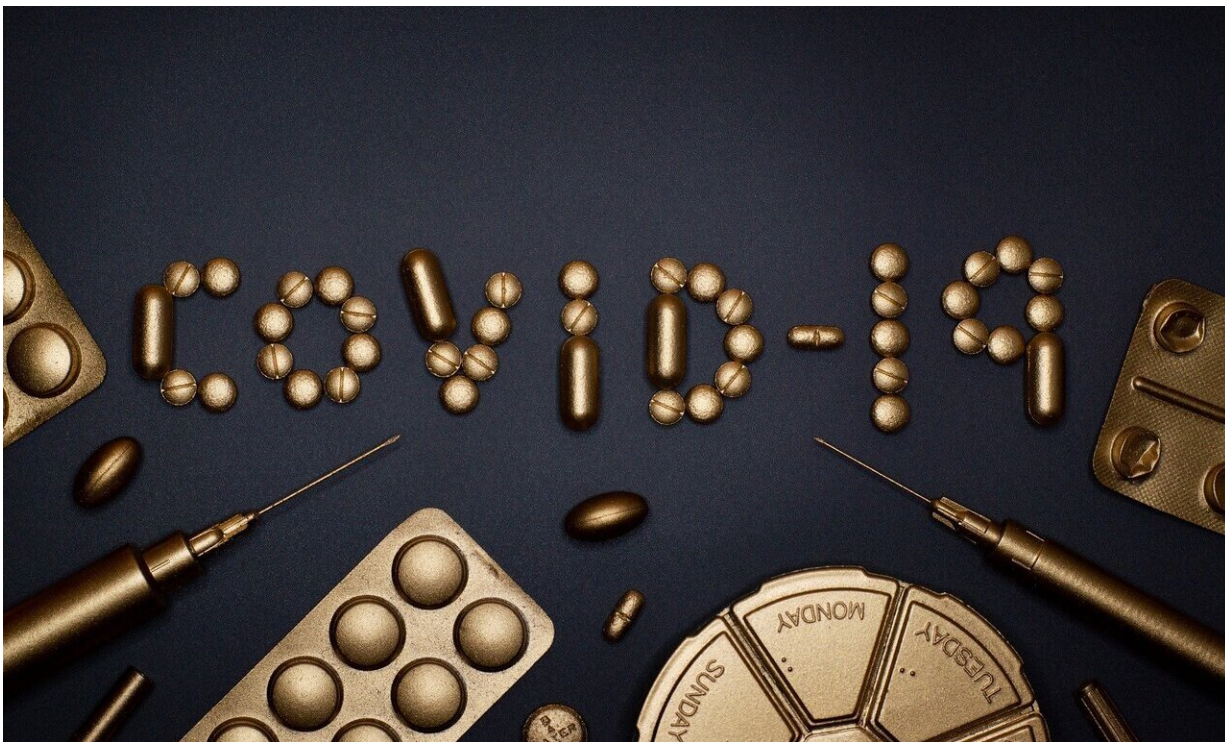# Could environmental data be the key to a greater understanding of COVID-19?

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Credit: CC0 Public Domain

Cranfield University is hosting a digital sprint where scientists from across the world will collaborate during three successive hackathons in developing digital environmental tools that can help track, understand and predict the effects of COVID-19 and help lead to a greener post-pandemic future.

Environmental data can play a key role in managing resources and behaviours in tackling COVID-19. Already, a number of studies including those underway by Cranfield University staff are investigating this, for example Dr. Zhugen Yang's work looking at whether wastewater can be used to monitor incidences of COVID-19.

Scientists believe it may also be possible to use past air-quality data to improve predictions of the likelihood of future acute hospitalisation of COVID-19 patients due to respiratory stress. By using historical urban air quality patterns, correlated with incidence of the coronavirus and the likelihood of intensive care treatment, it is hoped that a tool can be developed that can identify areas which may face pressure on intensive care resources.

The sprint is also hoping to reveal what effects 'lockdown' has had on the environment and whether there are patterns of behaviour that could be maintained, such as reduced transport and travel, that with reduced greenhouse gas emissions for example would benefit the environment in the longer term.

The collaborative digital events are being funded by the Natural Environment Research Council (NERC) and are being led by its Digital Environment Champions, Cranfield University's Professor Ron Corstanje and Dr. Stephen Hallett, with Ideathon input from Professor Leon Williams.

Professor Ron Corstanje, Professor of Environmental Data Science and Head of the Centre for Environmental and Agricultural Informatics, at Cranfield University, said: "Environmental data can play a huge part in managing the effects of COVID-19 and helping lead a green recovery from this pandemic but we need to urgently develop the digital tools. This digital sprint will enable scientists, from across the world, to rapidly develop their ideas and turn them into practical digital solutions that can

be deployed urgently.

"As the world starts to focus on a potential second wave of COVID-19, environmental data can provide a vital early-warning system, enabling better decision-making and deployment of resources."

Dr. Stephen Hallett, Associate Professor in Environmental Informatics, at Cranfield University, said: "Lockdowns across the world are having a significant effect on the natural environment. Already, we are seeing improvements in measures such as air and water quality in places where human behaviours have had to be modified because of COVID-19.

"These temporary benefits are unlikely to lead to a long-lasting environmental gain, however. We need to develop solutions from these changes in behaviour that leads to a greener recovery from the pandemic."

Professor Neil Harris, Professor of Atmospheric Informatics at Cranfield University, added: "Understanding the spread of COVID-19 by applying data analytics approaches and bringing together data on air quality with those on human activity, such as traffic and industry, will allow us to develop better tools to manage the next steps of the pandemic, by improving knowledge of the environmental factors that can increase people's risk to infection. For example, it might bring out in more detail the relationship between particulate matter and the pre-disposition to COVID-19 infection, as well as to its transmission."

  More information: To sign-up for the digital sprint events, visit digitalenvironment.org/home/co … l-sprint-hackathons/

Provided by Cranfield University

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