# Correspondence

## COVID-19: sample for future analysis

Resources for COVID-19 testing in many parts of the world are still limited. We suggest that future value could be realized if samples were to be widely taken now and saved for analysis as more resources become available.

Besides diagnostic screening, this sample analysis alone — or in combination with mobile and other data — could provide insight into incubation periods, the relationship between transmissibility and symptoms, disease progression in individuals, and the effectiveness of different mitigation measures.

Simple buffers that are commercially available or readily prepared in the laboratory (for details, see S. Menke *et al. Front. Microbiol.* https://doi.org/dr2s; 2017) can indefinitely preserve nucleic acids in samples of saliva, nasal mucus and other biological material at room temperature. This form of sample preservation would obviate the need for refrigeration under difficult field or hospital conditions (see M. Camacho-Sanchez *et al. Mol. Ecol. Resour.* **13**, 663–673; 2013).

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## Lockdown: keeping research on track

As researchers in one of the regions most severely affected by COVID-19, we have been able to continue our work by using a rigid system of 24-hour shift-working that complies with the Italian government's strict lockdown conditions.

Under this scheme, group leaders allocated volunteers from their teams to one of three shifts, taking into account ethical issues around sample handling and the cost and relevance of ongoing experiments. The shifts run from 05:00 until 12:00, 12:30 to 17:30 and 18:00 to 04:00; time between shifts is used to sanitize exposed surfaces. Laboratory occupancy at any one time is 10–15% of normal, optimizing safety. For experiments that take longer than a single shift, researchers modify their protocols — for example, by freezing samples — or ask colleagues on the next shift to take over.

People must self-report their health status before coming in: anyone knowingly exposed to or showing symptoms of coronavirus infection is excluded. And those sharing a work space with an individual who develops symptoms, or has come into contact with a symptomatic person, are immediately quarantined and medically tested if necessary (the department is a certified centre for SARS-CoV-2 diagnostic testing).

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## Revamp economics for global fixes

Hetan Shah rightly argues that social insight is needed to help meet the challenges of the next decade (*Nature* **577**, 295; 2020). The important question is whether social science — and economics, in particular, as the queen of the social sciences — is up to the task of informing government policy.

After spending two decades drilling down on economic theory, I can testify that the field lags badly behind the development of hard science and engineering. Our universities must bring into the present the essential considerations of economics that were formed in the mid- to late-nineteenth century — when economic behaviour was explained in terms of the 'marginal revolution' (W. Jaffé *Hist. Polit. Econ.* **4**, 379–405; 1972). To do so, they need to incorporate the important advances made since then in basic temporal and expectational economics.

Mathematical economics is not a sufficient condition for meeting the next decade's challenges — but it is certainly a necessary one.

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## Scientists think on the move

Your 'Where I Work' series (see, for example, *Nature* **580**, 158; 2020) reminds me that travel itself can be scientifically productive. Travel can free the mind from its routine tasks, opening it up to new ideas. The polymerase chain reaction, for example, came to the late Kary Mullis while driving late one night from Berkeley to Mendocino in California. A lynchpin in today's screening of thousands for COVID-19, it earned him the Nobel Prize in Chemistry in 1993.

Other Nobel-worthy ideas seeded on the move include Subrahmanyan Chandrasekhar's insight into the maximum mass of a white dwarf star, and John Robert Schrieffer's mathematical description of the ground state of superconducting atoms. Chandrasekhar was on a ship from India to England when he had his brainwave at the age of 19; it won him the Nobel Prize in Physics in 1983. Schrieffer's came to him on New York City's subway, earning him a Physics Nobel in 1972.

Imagined travel, too, has contributed to discoveries. A notable example is Albert Einstein's 1907 'elevator' thought experiment, which inspired his general theory of relativity. Another is mentioned in Dante Alighieri's *The Divine Comedy*, when the poet describes Galilean relativity in the context of flight on the back of a monster (L. Ricci *Nature* **434**, 717; 2005).

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