Correspondence

Coronavirus: postdoc winners need paid extensions

Constraints on laboratory work due to the COVID-19 pandemic are disproportionately affecting the career prospects of winners of prestigious postdoctoral fellowships (see also A. H. Behbahani *Nature* **583**, 202; 2020). These talented young scientists are being held back by funding agencies that offer no paid extensions for their research (see go.nature.com/3ihiskm).

Our survey of more than 500 sponsored postdocs at our institutions revealed that 72% have not received any funding extension. Their concern is that grant committees in the future will not take these circumstances into account, which will have an impact on their careers. Not being able to complete their projects is disrupting their publication record and preventing them from meeting deadlines for independent starter-grant applications.

We urge funding agencies to allow an extension of at least 6–12 months to compensate for the loss of applicants' research time so that they can meet the eligibility criteria for such follow-up funding. Funding agencies widening their criteria for research excellence beyond bibliometrics would also help.

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Public health is moot without water security

Personal measures against COVID-19 infection, such as hand-washing and wearing protective clothing, are redundant without proper sanitation and a reliable water supply. As future pandemics become more likely, we urge political leaders, the global financial community and international agencies to accelerate funding to tackle the issue of water security.

The pandemic has exposed huge inequalities in water security, with more than 2 billion people, half of schools, and one-quarter of health-care facilities lacking a basic water or sanitation service (see go.nature.com/2k1t5bn).

Among those most at risk are women and girls in low-income countries, who bexar the burden of water collection; people with disabilities; and people living in remote rural locations or in overcrowded settlements and refugee camps (see *Nature* **581**, 18; 2020).

The world is nowhere near achieving the sixth United Nations Sustainable Development Goal of 'clean water and sanitation for all' (R. Naidoo and B. Fisher *Nature* **583**, 198–201; 2020). COVID-19 has underlined how failure to provide water security to some compromises the public health and economic prospects of all. The UN secretary-general stated that "We are only as strong as the weakest health system." In turn, the world's health system is only as strong as its least water-secure region.

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Use AI to mine literature for policymaking

Developing policy informed by science and technology is now more complex than ever. Policymakers must address supply chains, climate change, inequality, technological breakthroughs, misinformation and more. Using artificial intelligence (AI) to mine the literature could put policymaking on a sounder footing.

Advanced big-data and natural-language-processing models enable decision makers to look beyond conventional indicators and expert discussions. Millions of scientific articles, patents and market reports can be readily analysed to identify megatrends or fading topics, and to provide predictive opportunities (see go.nature.com/31snkp5).

Machine learning can create maps of national competencies and centres of excellence of science and technology. It will find weak signals and potentially disruptive 'wild-card' effects, and can perform 'gap analyses' to guide legislation. Such applications could help steer more-proactive policymaking.

The COVID-19 pandemic needs coordination between teams with experience in applying AI (see, for example, J. Blumenstock *Nature* http://doi.org/d28w; 2020). The United Nations Educational, Scientific and Cultural Organization's Global Futures Literacy Network (see go.nature.com/2nqqfpd) could help. Otherwise, the mismatch between science policy and reality will cost us all even more in the future.

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Contact-tracing apps: contested answers to ethical questions

Jessica Morley and colleagues raise 16 questions regarding the ethical justifiability of potential COVID-19 tracing apps (*Nature* **582**, 29–31; 2020). Normative reference points for framing the answers need to be considered before we can even begin to address these issues.

For any given app, those answers will vary markedly, depending on whether the evaluation is primarily in terms of individual freedom, public health, solidarity with those most affected by the pandemic, the common good or some other ethical reference point. To guide decision-making, ethical principles must be embedded in a framework that allows us to make them precise and to weigh them up in cases of conflict. Reducing the ethicality of an app to its necessity, proportionality and sufficiency risks sidestepping fundamental debates on how to assess these features.

Morley *et al.* speak of governments having one chance to get it right. At best, this could induce a false sense of certainty. Ethical reflection involves continuously checking that all arguments have been heard. Introducing contact-tracing apps will be a learning process, not a one-shot game. Instead, we need swift, bold action that builds on democratic institutions, continuous societal discourse and a readiness to fix things if necessary.

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