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Science and politics are inseparable

***Nature* will be publishing more politics news, comment and primary research in the coming weeks and months.**

Since *Nature*'s earliest issues, we have been publishing news, commentary and primary research on science and politics. But why does a journal of science need to cover politics? It's an important question that readers often ask.

This week, *Nature* reporters outline what the impact on science might be if Joe Biden wins the US presidential election on 3 November (see page 177), and chronicle President Donald Trump's troubled legacy for science (page 190). We plan to increase politics coverage from around the world, and to publish more primary research in political science and related fields.

Science and politics have always depended on each other. The decisions and actions of politicians affect research funding and research-policy priorities. At the same time, science and research inform and shape a spectrum of public policies, from environmental protection to data ethics. The actions of politicians affect the higher-education environment, too. They can ensure that academic freedom is upheld, and commit institutions to work harder to protect equality, diversity and inclusion, and to give more space to voices from previously marginalized communities. However, politicians also have the power to pass laws that do the opposite.

The coronavirus pandemic, which has taken more than one million lives so far, has propelled the science–politics relationship into the public arena as never before, and highlighted some serious problems. COVID-related research is being produced at a rate unprecedented for an infectious disease, and there is, rightly, intense worldwide interest in how political leaders are using science to guide their decisions — and how some are misunderstanding, misusing or suppressing it. And there is much interest in the fluctuating relationship between politicians and the scientists who governments consult or employ.

Scholarly autonomy under threat

Perhaps even more troubling are signs that politicians are pushing back against the principle of protecting scholarly autonomy, or academic freedom. This principle, which has existed for centuries — including in previous civilizations — sits at the heart of modern science.

Today, this principle is taken to mean that researchers who access public funding for their work can expect no — or very limited — interference from politicians in the conduct of their science, or in the eventual conclusions at which they arrive. And that, when politicians and officials seek advice or information from researchers, it is on the understanding that they do not get to dictate the answers. This is the basis for today's covenant between science and politics, and it applies across a range of research, education, public-policy and regulatory domains.

> **"Politicians are pushing back against the principle of protecting scholarly autonomy, or academic freedom."**

It is not a perfect system by any means. Some research areas are more autonomous than others, and autonomy can never be a blank cheque: researchers must also be held accountable for their actions, and standards of quality and integrity must be upheld. But protection for autonomy is a long-standing benchmark, the standard to which experts and policymakers aspire. It requires a degree of trust between researcher and politician that each will keep to their word. And when this trust starts to ebb away, the system, too, begins to look vulnerable.

That trust is now under considerable pressure around the world. Cracks have been evident for years in the field of climate change, with a number of politicians ignoring or seeking to undermine the irrefutable evidence showing that humans are the cause. But this lack of trust can now also be seen in other public domains in which verifiable knowledge and research are needed for effective policy-making.

Last year, Brazil's President Jair Bolsonaro sacked the head of the country's National Institute for Space Research because the president refused to accept the agency's reports that deforestation in the Amazon has accelerated during his tenure. In the same year, more than 100 economists took the unprecedented step of writing to India's prime minister, Narendra Modi, urging an end to political influence over official statistics — especially economic data — in the country.

And just last week, in Japan, incoming Prime Minister Yoshihide Suga rejected the nomination of six academics, who have previously been critical of government science policy, to the Science Council of Japan. This is an independent organization meant to represent the voice of Japanese scientists. It is the first time that this has happened since prime ministers started approving nominations in 2004.

The pandemic, too, is uncovering examples of political interference in science. In June in the United Kingdom, the statistics regulator wrote to the government, highlighting repeated inaccuracies in its COVID-19 testing data, which the regulator says seem to be aimed at showing "the largest possible number of tests".

The fields of public-health and infectious-disease research have revealed much about the effects of pandemics and how to curb them. This year, a large volume of work on COVID-19 has illuminated the behaviour of both the virus and the disease. Research has also revealed uncertainties, gaps and errors in our knowledge, as would be expected. But that doesn't excuse the behaviour we are seeing from politicians around the world, exemplified by Trump's notorious actions: a chaotic, often ill-informed response, with scientists being attacked and undermined.

The principle that the state will respect scholarly independence is one of the foundations underpinning modern research, and its erosion carries grave risks for standards of quality and integrity in research and policy-making. When

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politicians break that covenant, they endanger the health of people, the environment and societies.

This is why *Nature*'s news correspondents will redouble their efforts to watch and report on what is happening in politics and research worldwide. It is why authors of our expert commentaries will continue to assess and critique developments; and why the journal is looking to publish more primary research in political science.

And, in these editorial pages, we will continue to urge politicians to embrace the spirit of learning and collaboration, to value different perspectives, and to honour their commitment to scientific and scholarly autonomy.

The conventions that have guided the relationship between science and politics are under threat, and *Nature* cannot stand by in silence.

Let patients help define long-lasting COVID symptoms

The terminology for long-lasting COVID symptoms — and the definition of recovery — must incorporate patients' perspectives.

Breathlessness and fatigue are among the continuing and debilitating symptoms being reported by people with COVID-19 — often months after the onset of the disease, and often long after they have been declared recovered.

Researchers and clinicians have yet to agree on a name for these ongoing symptoms. The literature includes "post-COVID syndrome" and "chronic COVID-19". Now, researchers, patient groups and those affected by the condition are urging that "long COVID" be used.

They are also calling for the definition of recovery from COVID-19 to be based on criteria that extend beyond just testing negative for COVID. People's symptoms should be considered, too, such as chest heaviness, breathlessness, muscle pains, palpitations and fatigue, as Nisreen Alwan, a public-health researcher at the University of Southampton, UK, wrote in a World View article in August (N. A. Alwan *Nature* **584**, 170; 2020).

The World Health Organization is following developments on this topic closely. Researchers and funding agencies, too, must give more urgent consideration to the definition of COVID recovery and whether to adopt the long COVID terminology — and they must put the patient voice at the centre of the process.

In deciding how to act on long COVID, researchers and policymakers must take heed of what happened in the case of myalgic encephalomyelitis, also called chronic fatigue syndrome (ME/CFS). The condition shares some of the symptoms of long COVID, and people with ME/CFS struggled for many years to be recognized as having a serious and debilitating medical condition that needed specialized treatment and research.

> **"Researchers and funding agencies must give urgent consideration to the definition of COVID recovery."**

Around 40 years ago, people began reporting this previously unrecognized disease. Its symptoms included exhaustion, as well as insomnia, and recurring pain. However, in the early years, few of these reports were considered by funding agencies. It took sustained advocacy from patients' organizations — who had to organize their own independent science advice — to persuade research funders to listen. And although COVID is well known, long COVID isn't — at least, not yet. It is crucial that those with the condition are listened to in a way that, tragically, people with ME/CFS were not.

The difficulties faced by people with ME/CFS and their representatives resulted, in part, from the fact that the patient voice was marginalized. This contributed to delays in the condition being recognized. Sonya Chowdhury, the chief executive of the UK-based patients' group Action for M.E., says that even today, ME/CFS is not well studied.

Moreover, the name chronic fatigue syndrome suggested a condition whose primary symptom was tiredness, when people's experiences are both more painful and more complex. They commonly include recurring pain, which often fluctuates in severity; being unable to sleep; difficulty concentrating; and becoming exhausted after even relatively mild physical activity.

Reaching agreement on the appropriate terminology for long COVID is key, says Felicity Callard, a human geographer at the University of Glasgow,UK, who also has long COVID. Callard and Alwan are among a group of researchers who have experienced long COVID — and who last week wrote a blog post for the *British Medical Journal* (go.nature.com/2sv47wr), urging the research and medical communities to start using the term long COVID, instead of some of the alternatives. Words such as 'post', 'syndrome' and 'chronic' risk delegitimizing suffering, the authors argue, and that will make it harder for people to access care.

Such terms also carry assumptions about the condition's underlying physiology that have not yet been properly investigated. Long COVID, by contrast, states clearly that people's experience of illness after infection is long, but it doesn't presume to know anything else, Callard says.

It seems the WHO is listening. In August, director-general Tedros Adhanom Ghebreyesus told a meeting of COVID patient groups: "We have received your SOS. We have heard loud and clear that long COVID needs recognition, guidelines, research and ongoing patient input and narratives, to shape the WHO response from here on."

Public-health authorities, too, are taking note — and some have started to use the term long COVID. Researchers, clinicians and funders must also consider how they will refer to the illness, and how to more accurately define recovery from COVID-19.

And they must always give proper consideration to the voices of people with COVID-19 and their representatives, who have done so much to put long COVID on the health-research and policy agenda.