United States: invest infrastructure stimulus in astronomy facilities

We argue that US President Joe Biden's planned investment in national infrastructure (see *Nature* **593**, 19–20; 2021) should include the next generation of astronomy facilities. Priorities for these will be identified by the Astronomy and Astrophysics Decadal Survey, expected in July. They will be crucial to US research, development and diplomacy.

For example, the speedy development of vaccines against COVID-19 relied on previous big investments in scientific infrastructure, such as synchrotron X-ray sources and computational power. And remote working is predicated on Wi-Fi technologies that were a by-product of research in radio-astronomy facilities.

US leadership in science rests in part on the facilities we operate. These have generated international collaborations to provide insight into how the Universe is structured and have contributed to Nobel prizes.

However, this leadership is jeopardized by our ageing observatory infrastructure. The 2018 US National Academy of Sciences report 'Exoplanet Science Strategy' concluded that progress requires substantial investment in extremely large telescopes on the ground, and ambitious space-based capabilities (see go.nature.com/3wsmzi2). These can take decades to put in place, and cost billions of dollars. Let's start now.

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A.C. declares competing interests; see go.nature.com/2ubmzzt for details.

Europe's pandemic recovery: embed resilience

More than a year into the COVID-19 pandemic, the European Union is mobilizing extraordinary financial and human resources to foster the recovery and resilience of member states. This is a huge responsibility for policymakers at all levels. As EU commissioner for Innovation, Research, Culture, Education and Youth and chair of the ESIR expert group on the economic and societal impact of research and innovation, respectively, we contend that these EU and national programmes should be reinforced and coordinated to account for the needs of all Europeans.

The temporary recovery instrument NextGenerationEU will provide €750 billion (US$913 billion). Horizon Europe will initially invest €123 million from a budget of €95.5 billion to fund research into viral variants. Sustainable social recovery must leave no one behind, otherwise social, political and economic instability could stem from disenfranchisement and inequity.

Resilience must increase by design, not disaster. The EU's "protect, prepare and transform" approach will ready our communities for future health and environmental shocks (see go.nature.com/352gb2s). Policy initiatives such as the European Research Area, the European Education Area, the Digital Education Action Plan, the New European Bauhaus and Horizon Europe aim for such resilience. This will involve collaboration across government, finance and industry.

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Canada is right to classify single-use plastics as toxic

Last month, the Canadian government added manufactured plastic items to the list of toxic substances under Schedule 1 of the Canadian Environmental Protection Act. A group of Canadian industry leaders has launched the Responsible Plastic Use Coalition to pursue legal action against the move.

The legislation change will pave the way for a ban on single-use plastic items that the government considers harmful, such as bags, straws, stirring sticks, six-pack rings, cutlery and hard-to-recycle food containers.

In my view, this bold move should be applauded.

The continued production, use and disposal of single-use plastics is unsustainable and prevents Canada from meeting its commitments under the Federal Sustainable Development Strategy, the Canada-wide Strategy on Zero Plastic Waste and the Ocean Plastics Charter adopted by the G7 group of countries (T. R. Walker and D. Xanthos *Resour. Conserv. Recycl.* **133**, 99–100; 2018).

Cooperation from all stakeholders, including the plastics industry, is urgently required to address the rapidly growing menace of plastic pollution.

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A dangerous, wrong or unneeded experiment? Don't do it

While making a BBC radio documentary together about the history of genetic engineering, one of us (R. P.) was reminded of an unsent letter to *Nature* and *Science*, drafted 50 years ago with molecular biologist Joe Sambrook, in response to the first proposed recombinant DNA experiment.

Four years later, in 1975, the Asilomar Conference — a meeting of biologists, lawyers and even physicians — rescinded a temporary moratorium on recombinant DNA research.

Amid today's debates about heritable gene editing, viral gain-of-function research and embryo experiments beyond 14 days, these words from the letter resonate: "We ought to ask ourselves whether the experimental results are worth the calculable and unknown dangers to ourselves and to the general population … we are obliged to ask ourselves whether the experiment needs to be done, rather than if it ought to be done, or if it can be done."

The letter by R. P. and Sambrook (now deceased) was never sent. As early-career researchers, they decided not to risk antagonizing senior colleagues who might be hostile to the idea of limiting research.

The letter concluded: "If it is dangerous, or wrong, or both, and if it doesn't need to be done, we just ought not to do it." Then, as now, what is the right experiment to do should not be determined by scientists alone.

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