#SciencelsBack

The election of Joe Biden to the US presidency has rekindled optimism in the world of science. To truly bring science to center stage will require bold political moves, the pulling together of all stakeholders, and time.

Since President Biden was declared the winner of the 2020 US presidential election last November, reactions to his and his office's science-related announcements on social media have been accompanied by the #SciencelsBack hashtag. These three words aptly capture the scientific community's palpable sense of relief and hope that the damage incurred to science during the past four years will be repaired. To say that the Biden administration is faced with a herculean task is not hyperbole. The previous administration's approach included pervasive science denialism and the sidelining of scientists and key agencies in favor of political interests, which led to a systematic assault on the climate and environment, efforts to cut science budgets, short-sighted immigration policies and a catastrophic pandemic response. To say that this caused singular harm not only to the US scientific enterprise but also to the American people, global public health and the future of our planet is not hyperbole either.

At this juncture of multiple intersecting crises, President Biden has stated that his mandate is "to marshal the forces of science and the forces of hope in the great battles of our time." The first steps of his administration have been in line with this sentiment, unveiling ambitious science-related plans, and selecting eminent scientists and policy-makers for key positions. Placing the pandemic at the top of his agenda, President Biden convened a group of leading experts as his COVID-19 advisory board to guide the pandemic response through science-based decisions. He also marked the urgency of addressing the climate crisis by creating the new roles of climate czar and climate envoy, the latter as part of the National Security Council. In sharp contrast to his predecessor, who took 19 months to appoint a presidential science advisor to head the US Office of Science and Technology Policy (OSTP), President Biden announced Eric Lander as his choice and elevated this position to cabinet level, a long-overdue move that underscores the importance he assigns to the role. Should they be confirmed to the OSTP, Lander, who served as co-chair of the President's Council of Advisors on Science and Technology under former President Obama, and Alondra Nelson,

the leading sociologist nominated as the OSTP's inaugural deputy director for science and society, will exemplify the bridging of past efforts with the plans of the current administration, which include a renewed focus on understanding and addressing inequalities. Elsewhere, appointees of previous administrations, including Francis Collins as director of the National Institutes of Health and Ned Sharpless as director of the National Cancer Institute (NCI), have remained in their posts, which inspires confidence in the continuity of successful tenures. In keeping with President Biden's broader strategy for staffing his administration so far, his picks bring together wide-ranging qualifications, experience, innovation, diversity and forward-looking attitudes. Nothing less is needed to tackle the far-reaching science agenda of this president, which, beyond addressing the pandemic and climate change, also includes technological development, research integrity and excellence, and racial and socioeconomic justice in science and healthcare, as he outlined in an open letter to Lander earlier this year¹.

And what about cancer? In Joe Biden, the USA has a president who, since the death of his son Beau from brain cancer in 2015, has also been one of its most prominent cancer advocates. The first lady, Dr. Jill Biden, has herself long been a cancer advocate, starting with the Biden Breast Health Initiative in the 1990s. The new vice president, Kamala Harris, is the daughter of breast cancer researcher Shyamala Gopalan, who died of colon cancer in 2009. Their personal stories helped forge their commitment to support cancer research and care, as all three noted separately, when commemorating World Cancer Day earlier this month.

A key part of Joe Biden's legacy as vice president is the Cancer Moonshot initiative, the effort he led, following his son's death, during the final year of the Obama presidency to accelerate cancer research, improve prevention and diagnosis and make more therapies available to more patients. The Cancer Moonshot was subsequently included in the 21st Century Cures Act, which was signed into law in December 2016 and earmarked \$1.8 billion in cancer research funding through the NCI over a seven-year period. This vision and level

of investment in cancer research was not matched by the previous administration, but with the Bidens in the White House, this is expected to change: one of the key issues the president is asking the OSTP to tackle is the application of lessons learned from the pandemic to accelerate the development and clinical testing of therapies for other diseases, such as cancer. The first lady has included fighting cancer in the main causes she will continue to work on, and she is already showing her commitment actively, most recently during a virtual visit to the NCI.

This changing of the guard in Washington, DC, comes at a critical time. As Dr. Jill Biden said during her visit to the NCI, cancer is the "one thread of pain that runs through every community." Not only has that not been reduced during the pandemic, it has been exacerbated. The burden of COVID-19 on healthcare systems, combined with lockdown measures and fear of exposure to the virus, has been delaying cancer diagnoses and reducing access to treatment and care, with the impact on cancer outcomes expected to be substantial². Lockdowns have also disrupted and slowed down biomedical research, with repercussions knowable only in the longer term. The economic crisis is threatening research funding, which for cancer research was already in need of a boost. The hostile immigration policies of the previous administration have been sapping the US research enterprise of global talent³. Public-health efforts for cancer prevention and early detection need to be reinvigorated with a boost in public trust in science, and the pervasive racial and socioeconomic disparities in cancer research and care require bold action.

That the Biden presidency starts in 2021, 50 years after the National Cancer Act of 1971 that declared the USA's "war on cancer" was signed into law, adds symbolic importance to the president's expressed commitment to "win this fight once and for all." Whether this will be by revitalizing and expanding the Cancer Moonshot initiative or through a newly convened taskforce dedicated to reassessing priorities and proposing solutions, or by other initiatives and political and legislative means, remains to be seen. Still, the early days of the Biden administration, from advocacy at the very

top, to the teams of experts selected to lead science-related efforts, to the reversal of harsh immigration policies that have been harming research, increase optimism that the cancer cause will be at the forefront of federal action. However, optimism must be tempered with a dose of realism. The Biden administration has inherited a series of crises that require immediate action, including a raging pandemic, an accompanying economic crisis, and eroded

faith in science, so wide-ranging tangible support for cancer research is less likely to be among its first initiatives. Time will be needed, and the new administration is called to balance that time with the urgency to address the multifaceted challenges facing cancer research and healthcare systems. Ultimately, winning this fight will require not only inspired leadership, vision and support at the federal level, but also the cooperation and constructive input of the

cancer research and oncology community as a whole. □

Published online: 23 February 2021
<https://doi.org/10.1038/s43018-021-00182-z>

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