Dear Friends,

2020 was a year like no other. It reminded us that for all our progress, we as humans live in a fragile balance with disease. It humbled us for our failings as a society to prevent the pandemic and to protect those most vulnerable among us. We pause in remembrance for the millions lost to COVID, and the millions more who will suffer its consequences for years to come.

But 2020 was also a year of remarkable scientific achievement, as we witnessed one of the greatest scientific triumphs in history—the development of new, but multiple, highly efficacious COVID-19 vaccines in less than a year. This tremendous outcome was based on decades of fundamental basic science and research platforms developed in response to the AIDS pandemic. We were also lucky that SARS-CoV-2 was a relatively straightforward target for vaccines, unlike HIV and many other pathogens.

The Urgency of Our Mission

Paradoxically, this remarkable accomplishment for COVID vaccine development reinforced, with a greater sense of urgency, the need to successfully achieve the mission of the Human Vaccines Project (HVP) to "decode the human immune space to accelerate development of vaccines and therapies for major global diseases." The world is still searching for vaccines and immune therapies against major global killers like HIV, TB and malaria, cancers, autoimmune and neurodegenerative diseases, and improvements in other vaccines to ensure greater effectiveness in all populations, including those most vulnerable—newborns, aging adults, and those living in low resource settings. Our current limited understanding of how the human immune system works to prevent and control disease remains the major obstacle impeding progress.

Remarkable Scientific Progress

Despite the challenges of 2020, it was an extraordinary year for HVP. Our scientific program made significant advances in conducting, in both animals of human relevance, identifying potential new vaccines that could be rapidly advanced to human trials with learning new ways to diagnose immune-mediated diseases. Moreover, we established new collaborations, including new partnerships with corporate and academic partners, and with broader support from a network of affiliated laboratory collaborators and individuals such as yourself.

At the other end of the spectrum, we established the Newborn Immunity Initiative, supported by the Michelson Prizes, to definitively determine the impact of pre-existing immunity in those populations most vulnerable to diseases. In collaboration with the Harvard T.H. Chan School of Public Health, we established the Harvard Newborn Initiative with the goal of finding solutions to immune-mediated diseases in our age that leaves us vulnerable to non-communicable and infectious diseases, such as cancers, Alzheimer’s, and COVID-19. In the other end of the spectrum, we established the HVP Center for Immunology Science with our partners at the Harvard T.H. Chan School of Public Health, to elucidate the human developmental window where immunity is established and extends the power of vaccines across populations.

We now have an unprecedented opportunity to seize on the recent convergence of technological advances from immunological sciences, artificial intelligence (AI), and machine learning to achieve this next frontier of human health, deciphering the principles of effective immunity and extending the power of vaccines across diseases and populations. Moreover, with multiple COVID vaccines currently undergoing testing across the world, we have a unique opportunity to design such tools to maximize learning across vaccine platforms and help usher in a new golden era of disease prevention.

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