

The boldness of philanthropists

Last week, Priscilla Chan and Mark Zuckerberg announced their new philanthropic initiative with the goal of “curing, preventing, and managing all diseases by the end of the century.” This may raise some eyebrows, but this effort—part of the \$45 billion Chan Zuckerberg Initiative—joins forces with other philanthropists to push the envelope and support audacious ideas, with long-term commitments, to solve some of our greatest challenges.

Philanthropists have long supported academic science, from endowing faculty positions to establishing new research centers. During the 20th century, their financing complemented the steady federal support that U.S. research and development (R&D) enjoyed, particularly in basic science. Regrettably, such government funding turned stagnant in the 21st century. Federal support of R&D at higher education institutions has fallen over 11% since 2011, the longest multi-year decline in federal funding for academic R&D since data collection began in 1972. What does this mean for achieving breakthrough discoveries in science?

To solve some of our greatest societal problems, we not only need to focus on basic science research—we also need sufficient resources and new approaches. Basic research allows innovative thinkers in science and engineering to work toward ambitious and important goals, including in biomedicine. This was certainly the case in cancer research, where substantial progress was made once scientists had gained sufficient understanding of gene structure and function to support translational thinking and convert basic findings into cures. However, without adequate resources, great visions cannot be fulfilled. Although private funding cannot match the scale of government funding (the U.S. National Institutes of Health alone is allocated \$30 billion per year), it can help fill gaps. Most importantly, it can initiate research thrusts into unproven directions, which generally do not draw government funding.

New approaches are also required. Chan and Zuckerberg will direct their first science-focused investment

to establish a “Biohub” that marries engineering and life sciences research from multiple institutions. Based in San Francisco’s Mission Bay, this hub will draw on the talented scientists and engineers from the University of California at Berkeley and at San Francisco, and Stanford University. Its proximity to the technologists of Silicon Valley is an asset as well. Future scientific advances likely will be at the interface of different disciplines—a “convergence” that requires breaking down barriers between fields. This is exactly what Biohub is planning. Such cross-disciplinary, open, and collaborative research also has been envisioned by other philanthropists, including Eli and Edythe Broad when the Broad Institute was organized in 2004.

In 2012, the Science Philanthropy Alliance was launched (for which I am an advisor) to shepherd private giving for basic research. Drawing on the expertise of foundations, philanthropists, and scientists across fields of basic research, the Alliance helps philanthropists make forays into supporting creative basic research. Indeed, Chan and Zuckerberg spoke with a wide range of scientists (including me) and philanthropists from around the world, through the Alliance network, to better understand where their intervention

could make important things happen that otherwise would languish. They have dared to think big, and I encourage philanthropists to engage with the scientific community for advice.

This year has already seen billions of philanthropic dollars go to science, including from Paul Allen to support bioscience, Sean Parker to advance cancer immunotherapy research, Sandy and Joan Weill for brain research, and Yuri Milner for the study of our universe. These dollars will play an important role in scientific progress. Big-profile gifts raise concerns for some, such as downplaying the need to increase federal dollars for basic research. But these gifts are certainly broadcasting a common message—philanthropists recognize that a long view of progress is worth investing in.

—David Baltimore



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