

## Introduction

Since its publication in 1945, Vannevar Bush's report *Science: The Endless Frontier* has come to occupy a biblical status in science policy. On the day it was issued, the report was greeted by front page headlines in the *New York Times*. Since then it has been the subject of innumerable studies, reports, analyses and interpretations, studied as if it were the word of God, invoked to legitimate a wide range of sometimes contradictory science policy models, decisions, and priorities. The Bush Report is most often associated with a linear and unidirectional model of knowledge creation and application, where lone researchers work at the frontiers of science to provide the intellectual grist for societal progress. From this perspective, *Science: The Endless Frontier* has often been interpreted as a pillar of support for the prerogatives of fundamental and unfettered research. Yet Vannevar Bush was an engineer with a keen appreciation for the complexities of the innovation process, and others have seen his report as a clear assertion of the close and necessary links between fundamental investigation and practical application. Despite its Rorschach quality, all would probably agree that the report was intended to be a blueprint for a new era of science—and of government in science—following the transformational experience of World War II and its technological culmination in the detonation of two atomic bombs over Japan.

Of course, every dogma wants revisiting and clarification from time to time. The Catholic Church has grappled with evolving doctrine (not to mention competing Popes) over the centuries, even as the words of the bible have remained more-or-less the same. Likewise has the context for Bush's report—and science policy—in modern society evolved, with the end of the Cold War in particular demanding a careful reconsideration of the meaning, relevance, and implications of *Science: The Endless Frontier*. In response to this changing context, Columbia University organized what might be thought of as a Vatican Council for science policy, an ambitious exploration of the historical, present, and future implications of Bush's seminal work at the time of its 50<sup>th</sup> anniversary.

Three conferences were held, on December 9, 1994, June 9, 1995, and September 21-22, 1996. Fifty-three leading scholars, practitioners, and observers of science policy made formal presentations addressing an extraordinarily broad range of issues—testimony to the

impact and influence of science on modern society, and of the Bush Report on science. This booklet contains highlights from those three conferences—a selection of presentations aimed at illustrating both the breadth and depth of Bush’s work, and the challenges facing science policy fifty years after he completed his report.

One concrete outgrowth of the conferences was the creation of a new organization, the Center for Science, Policy, and Outcomes (CSPO). In compiling these presentations, CSPO seeks to make more widely available a resource that contributes to and advances Bush’s legacy, while also shedding light on CSPO’s own mission of enhancing the capacity of science to achieve desired societal outcomes.

Even in the several years between the three conferences and the compilation of this booklet, the context for science policy has continued to change. What may seem, from the perspective of the year 2000, like an irrational despondency in several of the presentations, has given way to the irrational exuberance of the dot-com world. Budget deficits of the mid-1990s have been replaced by budget surpluses, economic expansion has persisted at historically unprecedented rates, and the texture of society has tangibly evolved under the influence of transformational innovations in information technologies and molecular genetics. So soon after the conferences were held, these presentations, which shed so much light on the Bush legacy, seem themselves to capture a moment in history. In doing so, they vividly illustrate the need to design science policies that are themselves flexible and adaptive—policies that allow the world to continue to benefit from science, even as science continues to change the world.

The full transcript of all sixty-two presentations made at the three conferences is available on the CSPO web site: [www.cspo.org](http://www.cspo.org).