

At a meeting of the FACULTY OF ARTS AND SCIENCES on May 17, 2005, the following tribute to the life and service of the late Harvey Brooks was spread upon the permanent records of the Faculty.

HARVEY BROOKS

BORN: August 5, 1915

DIED: May 28, 2004

In the Division of Engineering and Applied Sciences (DEAS), Harvey Brooks was Gordon McKay Professor of Applied Physics, *Emeritus*, and he served as its Dean from 1957 to 1975. He also was Benjamin Peirce Professor of Technology and Public Policy, *Emeritus*, in the Kennedy School of Government, where he created and led the program on Science, Technology and Public Policy. Born in Cleveland, Ohio on August 5, 1915, he died at his Cambridge, Massachusetts home on May 28, 2004, leaving behind Helen, his wife for nearly sixty years, their four children, Alice, Katharine, Kingsley, and Rosalind, and two grandchildren.

We should not hold it against him that Harvey graduated in mathematics from Yale in 1937 nor that he then took up physics as a Henry Fellow at Clare College in the other Cambridge. Seeing the light, he came to Harvard to study with Nobel laureate physicist John Van Vleck, the eventual founder of DEAS and Harvey's predecessor as its Dean. As a new PhD in 1940, Harvey became a Junior Fellow in Harvard's Society of Fellows. In an autobiographical article that he wrote in 2001, Harvey extols the "weekly dinners with the Senior Fellows, such as Alfred North Whitehead, Crane Brinton, L. J. Henderson, and Arthur Darby Nock, with exciting cross-disciplinary discussions on every conceivable subject."¹

Harvey's career epitomizes the Golden Age of American science and technology. He contributed mightily to America's rise to pre-eminence as the world's scientific, military and economic superpower. The demands of WWII thrust Harvey into technology and engineering. He took leave from the Society of Fellows and, from Pearl Harbor Day in 1941 to VJ Day in 1945, he worked on anti-submarine warfare at the Harvard Underwater Sound Laboratory. When Harvard disbanded that secret laboratory at war's end, Harvey chose "the possibilities of civilian applications of fission physics"² at General Electric's Knolls Atomic Power Laboratory over "new developments in semiconductor physics"³ at Bell Laboratories.

A report to President Conant by Vannevar Bush—formerly President Roosevelt's wartime science adviser—led Harvard, in 1950, to establish the DEAS with its multiple disciplines

focused on the applications of science and to invite Harvey to return to Harvard in a tenured position in DEAS, a position well matched to his by then well developed taste for multi-disciplinary and applied projects.

Between 1950 and 1957, Harvey displayed his power as a theoretical physicist, concentrating on the fundamental theory of semiconductors and the electronic energy levels of metals. In this very competitive field, he proved remarkably willing to share his ideas, thereby earning wide recognition as its leader.

The Harvard base and Harvey's decade of experience in undersea warfare and in atomic energy led to his recruitment into the science-and-public-policy arena where he dwelt for the rest of his long career and which he came to personify. His membership in the original Advisory Committee on Reactor Safeguards for the new Atomic Energy Commission and his chairmanship of the Committee on Undersea Warfare of the National Academy of Sciences were stepping stones to the President's Science Advisory Committee (PSAC), in which forum he served Presidents Eisenhower, Kennedy and Johnson.

As Harvey recalled in 2001, "The original exploitation of high-level advice by the federal government really could be described ... by saying that scientists were used to advise on alternate means to generally agreed-upon ends. That meant, in the 1950s and 1960s, defense and space."⁴ Harvey added this caution: "This does not necessarily mean that all the members of PSAC ... agreed on the goals, only that they were willing to advise on alternate means to these ends.... There was considerable skepticism, for example, about the wisdom of manned space flight to the moon."⁵ As Harvey put it: "Kennedy, I guess quite properly, took the attitude that the decision to go for the moon was a political one. He thanked PSAC for its advice but said that he was going to make the political decision and asked us to please help him carry it out in the most cost-effective way."⁶ Vietnam exacerbated disagreements over the role of science in public policy to the point when, in 1972, Nixon abolished his entire science advisory apparatus.

Not that all disagreements between high-level advisers and their patrons were high-minded either then or ever since. Overlaid on the high politics of national goals were and are the low politics of science advice. As no one knew better than Harvey, the premier scholar of the field, science policy has at least two aspects. The high-minded aspect is science in the service of national policy or, for that matter, of the corporate goals of both public and private enterprise. The self-serving aspect is policy *for* science, what governments or companies or universities should invest toward the creativity and value of the national or the corporate research and development enterprise. Conflicts arise because both aspects are susceptible to bias among advisors and to political agendas among politicians. How to resolve those conflicts preoccupied Harvey's scholarship throughout his life, as he addressed them in arenas ranging from American defense and space efforts "to technology assessment, to environmental policy analysis, to the humanization of work"⁷ and to the competitive performance of the U.S.

economy.

The monumental lists of Harvey's scholarly publications, collaborators, committee memberships, and honors are impossible to fit within this Minute. We conclude with a tribute to one of Harvey's most remarkable traits—manifested by his responses to people on a personal level. Every colleague who spoke at Harvey's memorial service and each of the undersigned has often experienced Harvey's amazingly generous, prompt, insightful, knowledgeable, thorough and extensive written critique for more than one draft document, critique invariably offered in Harvey's utterly modest, unassuming, matter-of-fact way. Each has reported wishing to cast away the original draft and to substitute for it Harvey's written comments! And each of us has been privileged to experience the warmth of Helen and Harvey's hospitality at their home. We offer our thanks from the heart.

Respectfully submitted,

Lewis Branscomb
Henry Ehrenreich
Michael McElroy
William Paul
Anthony Oettinger, Chair

¹ "Autonomous Science and Socially Responsive Science: A Search for Resolution," *Annu. Rev. Energy Environ.* 2001. 26:29-48

² Op. cit.

³ Op. cit.

⁴ Op. cit.

⁵ Op. cit.

⁶ Op. cit.

⁷ Op. cit.