

## Charles M. Vest

Charles M. Vest is President of the National Academy of Engineering and President Emeritus of the Massachusetts Institute of Technology.

Dr. Vest earned a BS in mechanical engineering from West Virginia University in 1963 and MSE and PhD degrees in mechanical engineering from the University of Michigan in 1964 and 1967 respectively. In 1968, he joined the faculty of the University of Michigan as an assistant professor; he taught in the areas of heat transfer, thermodynamics, and fluid mechanics, and conducted research in heat transfer and engineering applications of laser optics and holography. He and his graduate students developed techniques for making quantitative measurements of various properties and motions from holographic interferograms, especially the measurement of three-dimensional temperature and density fields using computer tomography. He became an associate professor in 1972 and a full professor in 1977. In 1981, he turned much of his attention to academic administration, and served as the university's associate dean of engineering (1981–1986) and dean of engineering (1986–1989) before becoming provost and vice president for academic affairs.

In 1990, Dr. Vest was elected president of the Massachusetts Institute of Technology (MIT) and served in that position until December 2004, when he became professor and president emeritus. As president of MIT, he was active in science, technology, and innovation policy; building partnerships among academia, government, and industry; and championing the importance of open, global scientific communication, travel, and sharing of intellectual resources. During his tenure, MIT launched its OpenCourseWare (OCW) initiative; cofounded the Alliance for Global Sustainability; enhanced the racial, gender, and cultural diversity of its students and faculty; established major new institutes in neuroscience and genomic medicine; and redeveloped much of its campus.

In 2007, Dr. Vest was elected to serve as president of the US National Academy of Engineering (NAE) for six years. Under his leadership, the NAE promoted the Grand Challenges for Engineering, a set of 14 critical challenges for engineers in the 21st century, which, if achieved, will improve the quality of life for humankind. This effort spawned a number of Grand Challenges Summits at universities around the United States and has contributed to improved public understanding of the value and importance of engineering advances to the well-being of the nation and the world.

Dr. Vest presided over the international expansion of the NAE's Frontiers of Engineering (FOE) program to include partnerships with China and the European Union. In 2009, he launched the annual NAE Frontiers of Engineering Education symposium series, aimed at identifying and propagating innovative approaches to engineering teaching and learning. He also initiated a major new NAE effort to understand and address changes in global manufacturing-design-innovation value chains and their implications for US employment, education, and competitiveness. And under his leadership, the NAE in 2011 undertook a novel partnership with the US Institute of Peace to consider how the application of technology and of knowledge and methods from engineering and science can serve the goals of conflict prevention, peacemaking, and peacekeeping.

In addition to strengthening and augmenting the strategic programs of the NAE, Dr. Vest exercised his visibility as NAE president to great effect during his tenure, playing a prominent role nationally and internationally in illuminating forces reshaping the landscape of engineering research, practice, and education, and in defining the attributes future engineers will require to compete and lead in the emerging global economy.

Dr. Vest was a director of DuPont for 14 years and of IBM for 13 years, and vice chair of the US Council on Competitiveness for 8 years. He also served on various federal committees and commissions, including the President's Committee of Advisors on Science and Technology (PCAST) during the Clinton and Bush administrations, the Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, the Secretary of Education's Commission on the Future of Higher Education, the Secretary of State's Advisory Committee on Transformational Diplomacy, and the Rice-Chertoff Secure Borders and Open Doors Advisory Committee. He serves on the boards of several nonprofit organizations and foundations devoted to education, science, and technology. He has authored a book on holographic interferometry and two books on higher education. He has received honorary doctoral degrees from 17 universities. He was awarded the 2006 National Medal of Technology by President Bush and received the 2011 Vannevar Bush Award from the National Science Board.