



Charles M. Vliet

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1941–2013

Elected in 1993

President of the National Academy of Engineering 2007–2013

“For technical and educational contributions to holographic interferometry and leadership as an educator.”

BY JAMES J. DUDERSTADT AND PAUL E. GRAY

CHARLES MARSTILLER VEST, former president of the National Academy of Engineering, president emeritus of the Massachusetts Institute of Technology, and one of the nation’s leaders in higher education, engineering, and national science policy, died on December 12, 2013, at the age of 72.

Chuck Vest was born on September 9, 1941, in Morgantown, West Virginia. Throughout his life, he credited much of his professional success to the simple values and emphasis on family that he learned as a boy growing up in Morgantown.

While studying for his degree in mechanical engineering at West Virginia University, he met Rebecca McCue on a blind date. They married and, after graduating in 1963, made their way to the University of Michigan in Ann Arbor, where they lived, worked, and raised their family for 27 years.

Chuck earned his MSE in 1964 and his PhD from Michigan in 1967. He joined the faculty of the university’s Department of Mechanical Engineering as an assistant professor, teaching in the areas of heat transfer, thermodynamics, and fluid mechanics, and conducting 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 was promoted to associate professor in 1972 and full professor in 1977.

In 1981 Chuck began a series of leadership appointments. As the senior associate dean of engineering he played a major role in moving the College of Engineering from its Central Campus location to new facilities on the university's North Campus. He went on to become dean of engineering (1986–1989) and then provost and vice president for academic affairs at Michigan. His performance and visibility in this new role soon attracted the attention of other universities seeking leadership, and MIT put before him “a call to national service” as their president. As he was preparing to leave Michigan, he left important words of advice:

Above all, I hope that the University of Michigan will forever set its central agenda to be excellence in research, scholarship, and education. It is my belief that the nation needs a small number of universities truly committed to excellence and to the education of an elite. But I think of this elite in a somewhat Jeffersonian sense. That is, it must be accessible. Admission to it must be available to people from all segments of our society and earned through dedication, hard work, and talent, not through race or social position.

In 1990 Chuck was elected the 15th president of the Massachusetts Institute of Technology, where he served with great distinction for nearly 14 years. His predecessor, Paul Gray, noted: “Chuck came to lead MIT at a difficult time for American higher education. In 1990, many in Washington had come to feel that the nation's universities had not acted as wise stewards of their federal funding. He made frequent trips to Washington as an ambassador not only for MIT but indeed for academia as a whole—and he did so supremely well.”

Chuck rapidly became an important national and international figure in higher education, helping to influence policy and to set the national agenda for science and technology at the very highest levels of government. 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. Again quoting Paul Gray:

Chuck strengthened the Institute academically and financially, greatly expanded our facilities, and dramatically enhanced the stature and the image of the Institute with government, with industry, and with the larger academic community. The life motto of Karl Taylor Compton, MIT's ninth president, was: "Leave every campground better than you found it." Chuck did just that here, with style, with extraordinary energy and with integrity.

As he stepped down from his MIT presidency, Chuck observed:

Serving as president of a major research university is not a sandbox ambition for any child—I remain frankly astonished at the road that led me here. But looking back at that road—the bends and dips, the forks and unintended shortcuts—I'm struck by how little one can predict at the journey's outset and by how much of life comes down to how one handles the points where the roads cross. I am also overwhelmed with the sense of how much I owe to the insight, imagination, inspiration, and judgment of the many, many gifted people I have been lucky enough to work with at MIT.

In 2007 Chuck was elected to serve as president of the National Academy of Engineering. Under his leadership the NAE promoted the Grand Challenges for Engineering, a set of 14 critical challenges for engineers in the 21st century that, 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.

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 presided over the international expansion of the NAE's Frontiers of Engineering program in 2013 to include partnerships with China and the European Union. He 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, Chuck Vest exercised his visibility as NAE president to great effect, 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.

He served on the board of directors of DuPont for 14 years and of IBM for 13 years, and was vice chair of the 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. In addition, he served on the boards of several nonprofit organizations and foundations devoted to education, science, and technology.

Chuck was awarded the Arthur M. Bueche Award in 2000, the 2006 National Medal of Technology by President Bush,

and in 2011 both the Vannevar Bush Award from the National Science Board and the Robert Fletcher Award from Dartmouth University. He received honorary doctoral degrees from 18 universities.

Perhaps the best way to understand Chuck's remarkable character is to recall his comments at Michigan when his selection as president of MIT was announced:

Among the many notes of congratulations I have received on this appointment, one really sticks out in my mind. It was a brief note I had from Paul McCracken, one of the most distinguished members of our faculty. That letter said, almost in its entirety, "Boy from West Virginia becomes president of MIT: The American Dream."

Despite his distinguished professional career, Chuck's greatest love and accomplishment was his family. He was a devoted husband and father who was immensely proud of both his children and his grandchildren. Together with Becky, they created a warm and loving home where they raised their family with the same simple values that served him so well on his own life's journey.

Throughout Chuck's years in Cambridge and Washington his most cherished time was spent at his home on Lake Winnepesaukee, New Hampshire, where he enjoyed paddling in his kayak, pursuing his passion as a voracious reader and, most importantly, spending time with his beloved wife, children, and grandchildren. Travel and long walks with Becky were also among his favorite pastimes.

He is survived by his wife, Becky; daughter and son-in-law, Kemper Vest Gay and John Gay; son and daughter-in-law, John and Christina Vest; and grandchildren Mary and Robert Gay and Ameri and Charles Vest.

Chuck Vest will be remembered as one of the great leaders of higher education through his service to Michigan and MIT. His presidency of the National Academy of Engineering and his role as a leader of American science, engineering, and technology will be viewed as immensely important to both the prosperity and security of our nation.