

The Perils of Complacency

America at the Tipping Point in Science & Engineering

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Scientific and technological advances are fundamental to the prosperity, health, and security of America. Innovation and rapid application of new technologies emerge from investments in Research and Development (R&D), and rely on cooperation among universities, federal and state governments, and industry. Unfortunately, America's total investment in R&D as a fraction of its Gross Domestic Product (GDP) has remained stagnant at 2.4–2.7% for nearly half a century. Meanwhile, other nations have accelerated their R&D investments. Because of America's tepid response to rising competition from abroad, the United States has fallen to tenth place among leading nations in R&D investment as a fraction of GDP. This rapid drop in R&D global ranking reflects government policy-makers, corporate boards, and CEOs focusing on near-term issues at the expense of longer-term, potentially existential issues. This does not bode well for the future of our country in a world where others, particularly China, are committed to, and investing in, long-term strategies for success. Improving America's global competitiveness will require a stronger partnership and a greater focus on long-term planning in scientific and engineering research. The authors will describe actions necessary to reverse this steady decline in U.S technological leadership.



Norman Augustine, an IEEE Life Fellow, is retired Lockheed Martin Corp. Chairman and CEO. He also served as Under Secretary of the Army, co-author of *Rising Above the Gathering Storm*, American Red Cross chairman, US Human Space Flight Plans Review Committee chairman, and numerous other roles.



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