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The Role of Science in Higher Education

As someone who has, for the past 4 years, been president of a major urban university, I am not impressed by recent polls purporting to show that in the American public opinion, science and its practitioners are as hallowed as ever. Scientists may consistently rank higher in public esteem than ministers, architects, lawyers, bankers, and congressmen, but from what I have observed on the college campus and in the classroom, faith in the beneficence of scientific endeavor and the promise of technology has been steadily eroding.

A scientifically literate public is more urgently needed than ever before if our society is to realize the full potential of the many technologies at our disposal. Scientifically well-informed voters, civic leaders, business persons, and journalists are essential if we are to make the right choices—if we are to invest our dollars and our energies in the most promising medical, environmental, and technological enterprises.

On the university level, we are a long way from achieving this kind of scientific comprehension. Science in its academic guise inspires in most of our students a mixture of anxiety and antipathy. Except for premedical students, who see their undergraduate science requirements as a kind of ordeal by fire, courses in "hard" sciences are avoided whenever possible.

Some of the reasons for today's more jaundiced view of science are obvious, others less so. Scientists have been the bearers of bad news in recent years, and bad tidings rarely enhance the popularity of those who deliver them. A DC-10 tumbles from the sky and, on investigation, the rest of the DC-10's are grounded; a nuclear reactor malfunctions and people fear for the genetic well-being of their unborn children. It is announced that a man-made satellite will reenter the earth's atmosphere, showering many tons of debris. In some vague but very real way, science is perceived as besmirched by these "failures."

The ascendant belief of the 19th and early 20th centuries was that science was omnipotent. With time enough and money enough, hunger and disease would vanish; technology would make work obsolete. Since science promised so much only a short while ago, the news that we are running out of energy and polluting our planet, that all future "solutions" to these problems may be only trade-offs involving certain risks that cannot be eliminated, is particularly difficult to swallow. Today's public disillusionment is threatening to create a scientific credibility gap just when it is most urgent that the work of scientists be understood and valued.

Along with the beliefs that scientists can no longer deliver on their promises and that they are guilty of intellectual trickery, there is the feeling that scientific research is insatiable in its appetite for the taxpayers' money, and that this money is increasingly swallowed up with little to show for it. Everyone could understand penicillin and polio vaccine, but recent efforts to find "cures" have met with no comparable success. The scientific credibility gap was probably widened when the "war on cancer," announced with fanfare by a former president, bogged down to the point where some researchers began characterizing it as a scientific Vietnam.

The scientific community as well as teachers and educators must do a better job of conveying to the public the importance of basic research. People do not comprehend the often circuitous paths to scientific discovery. Many people do not understand why men and women should be paid for studying the mating habits of spiders and the sonar systems of bats when the planet itself seems to be in peril.

The growing cynicism about science must be tackled at its roots through better scientific education. People must be taught the limits as well as the possibilities of science and, most important, its changing and vastly enlarged role in our national and global destiny.—JOHN C. SAWHILL, *President (on leave), New York University, New York 10012, and Deputy Secretary of Energy*