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EDITORIAL

Science in the 21st Century

Imagine a new century, full of promise, molded by science, shaped by technology, powered by knowledge. We are now embarking on our most daring explorations, unraveling the mysteries of our inner world and charting new routes to the conquest of disease. We have not and we must not shrink from exploring the frontiers of science. But as we consider how to use the fruits of discovery, we must also never retreat from our commitment to human values, the good of society, our basic sense of right and wrong.

Science often moves faster than our ability to understand its implications, leaving a maze of moral and ethical questions in its wake. The Internet can be a new town square or a new Tower of Babel. The same computer that can put the Library of Congress at our fingertips can also be used by purveyors of hate to spread blueprints for bombs. The same knowledge that is developing new life-saving drugs can be used to create poisons of mass destruction.

Science has no soul of its own. It is up to us to determine whether it will be used as a force for good or evil. We must decide together how to apply ethical and moral principles to the dazzling new discoveries of science. Here are four guideposts.

First, science and its benefits must be directed toward making life better for all Americans—never just a privileged few. Its opportunities and benefits should be available to all. Science must not create a new line of separation between the haves and the have-nots, those with and those without the tools and understanding to learn and use technology.

In the 21st century, a child in a school that does not have a link to the Internet or the student who does not have access to a computer will be like the 19th-century child without school books. That is why we are ensuring that every child in every school, no matter how rich or poor, will have access to the same technology by connecting every classroom and library to the Internet by the year 2000.

Science must always respect the dignity of every American. We must never allow our citizens to be unwitting guinea pigs in scientific experiments that put them at risk without their consent and full knowledge.

Second, none of our discoveries should be used to label or discriminate against any group or individual. With stunning speed, scientists are now moving to unlock the secrets of our genetic code. Genetic testing has the potential to identify hidden inherited tendencies toward disease and to spur early treatment. But that information could also be used, for example, by insurance companies and others to discriminate against and stigmatize people.

Third, technology should not be used to break down the wall of privacy and autonomy free citizens are guaranteed in a free society. The right to privacy is one of our most cherished freedoms. As society has grown more complex and people have become more interconnected in every way, we have had to work even harder to respect the privacy, the dignity, and the autonomy of each individual. As the Internet reaches to touch every business and every household and we face the frightening prospect that private information—even medical records—could be made instantly available to the world, we must develop new protections for privacy in the face of new technological reality.

Fourth, we must always remember that science is not God. Our deepest truths remain outside the realm of science. We must temper our euphoria over the recent breakthrough in animal cloning with sobering attention to our most cherished concepts of humanity and faith. My own view is that each human life is unique, born of a miracle that reaches beyond laboratory science. I believe we should respect this profound gift. I believe we should resist the temptation to replicate ourselves. But this is a decision no president should make alone. No president is qualified to understand all of the implications.

If we hold fast to these principles, we can make this time of change a moment of dazzling opportunity for all Americans. Science can serve the values and interests of all Americans, but only if all Americans are given a chance to participate in science.

President Bill Clinton

This editorial is adapted from a commencement address given on 18 May 1997 at Morgan State University in Baltimore, Maryland.