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Knowledge as Real Estate

Winston Churchill said that "the empires of the future are the empires of the mind," and his vision is now with us. Science and technology are, for the United States and our allies, highly valued resources. Political leaders know that "smart" weapons win conventional military encounters and that advanced technology capacity is vital to economic strength. Technology is on the agenda of the annual economic summit meetings, and presidential candidates debate the most effective ways to promote innovation and to educate American children to cope with our technological age.

Both policy-makers and the public now perceive science as central to major national imperatives and thus as a strategic national resource, a national commodity to be nurtured and protected. Decisions on how this may be accomplished increasingly will be made through the political process. This is the environment within which international cooperation will be pursued or denied. Cooperation will be weighed against clear and compelling military and economic security objectives by individuals with an imperfect understanding of the relation of science to these objectives and the value of international ties to scientific vitality.

It is likely that scientists and scientific institutions will become more influential and valued in Washington than they have been at any time in the past two decades. They will have the opportunity to enlighten the debate and deliberations about valued national objectives which appear to be in conflict. The political process will benefit from their informed contributions on such issues as the requirements and benefits of a strong domestic research structure; relationships and allocation of resources among universities, government, and industry; the nature of the industrial innovative process, in which research, development, manufacture, distribution, and marketing are interwoven; and the importance to domestic strengths of international intellectual bonds.

The scientific community must become more involved in these issues both for the public good and in the interest of international science. The value of open scientific communication among nations is not self-evident to those outside the scientific community, who know too little about the process of scientific discovery. Furthermore, if international scientific and technological cooperation is perceived as giving away essential national strategic resources, it will increasingly come under attack.

It is of real concern that, within this decade, admission of foreign graduate students to U.S. research universities, presentation at international forums of frontier work by American researchers, and collaboration with colleagues abroad in areas perceived as key to the country's international standing may be considered as contrary to U.S. interests as would be internationalization of the corn belt. Without the wisdom to recognize that science is a global endeavor with the potential to contribute to the welfare of all, this concern may become reality. It is this wisdom that the scientific community must provide. To do so, scientists must become active in the public policy process by such means as counseling political parties and candidates, writing articles for national magazines and opinion pieces for local newspapers, and speaking widely to public interest groups.

The international scientific community must become similarly involved. Resolving the apparent conflict between competition in advanced technology among allies, and their cooperation in scientific research which in the future may have commercially valuable applications, is a fundamental problem for those dedicated to international cooperation in R & D. It is a problem that requires the scientific community both to devise new creative approaches and to take on the difficult task of illuminating the political process and the public perception.—ANNE KEATLEY, *Senior Executive Staff Officer, National Research Council, Washington, D.C. 20418.*