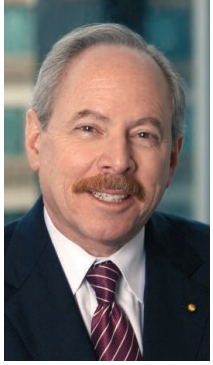

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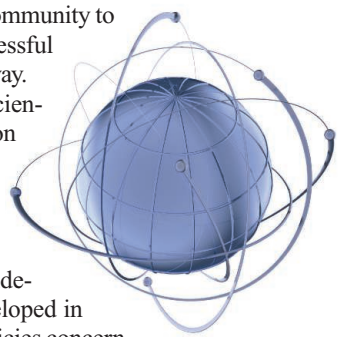
Harmonizing Global Science

EVERY MAJOR PROBLEM FACING MODERN SOCIETY NOW HAS A SCIENCE AND TECHNOLOGY COMPONENT—either as a cause or cure—whether it's energy and the environment, access to water and fertile land, the spread of infectious diseases, or sustaining a viable economy. Although every societal problem has unique regional characteristics that require attention, there are sufficient implications across regions for which only globally coordinated efforts will be successful. The recent assessments of the Intergovernmental Panel on Climate Change and their impacts on public and policy-maker perceptions provide one example of successful cooperation on a near-global scale. The betterment of humankind depends on a deliberate move from being an international community of scientists to being a truly global community.

As more countries have invested in science and technology to advance their societies, high-quality science is increasingly being carried out in every part of the world. The scientific enterprise has become highly collaborative both within and across countries. These trends present great opportunities and increasing obligations for the scientific community to contribute to solving society's major problems. But efforts will be successful only if the community can function in a much more globally integrated way.



Becoming global can only happen if the differences among national scientific communities are reduced. For example, there is substantial variation in the norms and standards that govern the work of scientists in different countries. Effective collaboration requires harmonizing these standards of conduct so that scientists can work together with full trust and confidence. Consider the work of the International Society for Stem Cell Research, which has been striving as a community to develop global guidelines for embryonic stem cell research so that biological materials developed in one nation can be shared with others. Similar concerns apply to other policies concerning the conduct of science, such as those regarding the use of human subjects, animal welfare, or work on genetically modified organisms. Harmonizing norms and standards may be the most pressing need for successful globalization. But disparate national intellectual property rules and regulations can also deter international cooperation, as can differing publication and information access policies.

The heavily nationalistic funding policies of some wealthier countries and regions that make it difficult to support noncitizen students or to fund science conducted in other countries raise particularly difficult barriers to effective global collaboration. There is also the problem of daunting and widely varying administrative policies. A recent study by the U.S. Federal Demonstration Project showed that U.S. researchers spend 42% of the time allocated to research on administrative tasks. Add to this the need to meet the diverse bureaucratic requirements of different nations, and the burden on the global scientific community becomes truly excessive.

Creating greater uniformity across countries to reduce such deterrents will require both individual and institutional leadership. Perhaps regular international gatherings, such as the annual Science and Technology in Society Forum in Japan, the annual American Association for the Advancement of Science (AAAS) meeting, or the biannual World Science Forum in Hungary, could dedicate a major part of their time to working on these issues. However, globalizing science will require sustained efforts throughout the year, of a type not normally associated with these meetings. International scientific organizations could take the lead in efforts to harmonize overarching ethical norms and standards or intellectual property policies. Both public and private funders and policy-makers must be brought into the process early to make these endeavors successful.

The widespread increase in scientific activity throughout the world reflects great confidence in science's ability not only to reveal the nature of the natural world but also to contribute to the betterment of humankind. To exploit its full potential power, however, those involved in science and technology must become better able to function as a truly global community.

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