AAAS *Science and Technology Policy Yearbook* 2003

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PREFACE

The events of 2002 were dramatically shaped by the tragedy of September 11, 2001. The year began with the United States in the preparatory stages of a global War on Terrorism and military action in Afghanistan, and ended with the foreshadowing of a war in Iraq in 2003. The events on, and after, September 11 have necessitated that the science and technology community consider the contributions that it can make in combating terrorism and strengthening homeland defense. In light of this, the annual AAAS Colloquium on Science and Technology Policy, April 11-12, 2002, in Washington, DC, was held under the theme of "Science and Technology in a Vulnerable World: Rethinking Our Roles."

Security measures initiated by the government are already having an impact on many S&T institutions; most notably research universities. The Association believes that it is critical that the scientific community and the lay public be engaged in evaluating new security-related policies and their impact on the research environment. Therefore, AAAS expedited the publication of a supplement to this *Yearbook*. *Science and Technology in a Vulnerable World*, was printed in July 2002, and is comprised of six chapters based on talks presented at the 2002 Colloquium.

As in the past, much of this book's content is drawn from the proceedings of the Science and Technology Policy Colloquium. In addition, there are a number of important articles and reprints from other sources.

With the recent establishment of the U.S. Department of Homeland Security and its Office of Under Secretary for Science and Technology, national science and technology priorities have shifted. Included in Part 1 are chapters by John H. Marburger III, the director of the White House Office of Science and Technology Policy; Scott Lilly, minority staff director of the House Appropriations Committee; G. Wayne Clough, president of the Georgia Institute of Technology; and Deborah Wince-Smith, president of the Council on Competitiveness.

Four chapters make up Part 2, which deals with technological challenges to governance and the new issues that governments face based on advances in science and technology. Contributors include David W. Rejeski, of the Woodrow Wilson International Center for Scholars; Robert H. Blank, from Brunel University in England; Deborah G. Johnson of the University of Virginia; and Steven W. Popper, a senior economist at RAND.

Over the past five years, the United States has seen tremendous growth in biomedical research funding, as well as commercialization of that research. As the boundaries between the non-profit academic research and the for-profit research industry blur, new concerns have been raised regarding conflicts of interest. Part 3 offers chapters by Anne Dievler of the U.S. General Accounting Office, Virginia Ashby Sharpe of the Integrity in Science project at the Center for Science in the Public Interest, and independent consultant Bert Spilker, discussing the current responsibilities of those involved in biomedical research regarding conflicts of interest.

Part 4 offers alternative perspectives on the U.S. science and technology system, two from disciplinary areas with great policy significance, and two from the types of voices rarely heard in S&T policy circles. Included here are chapters by Daniel Sarewitz of Columbia University; Gilbert Omenn of the University of Michigan; Judi Wangala Wakhungu, from the African Centre for Technology Studies in Kenya; and Eva Harris, of the School of Public Health at the University of California at Berkeley.

Part 5 looks at "forbidden science" issues such as human reproductive cloning and genetically-engineered bioweapons, and asks rhetorically: should some avenues of research be outlawed? Ronald M. Green, professor of ethics at Dartmouth College, presents a discussion of human reproductive cloning. David Kay, of the Center for Counterterrorism Technology at SAIC, examines the issue of genetically engineered bioweapons. And Daniel Kevles, professor of history at Yale, closes the part with his views on cloning.

The United States stands as a world leader in science, technology, and research, yet it also leads in consumption of the earth's resources and production of waste. Part 6 includes chapters by Ismail Serageldin, director of the Library of Alexandria in Egypt, and Peter Raven, former chair of the AAAS Board of Directors and director of

the Missouri Botanical Garden who remind Americans of their responsibilities as global leaders to apply their science and technology resources to the sustainability of the planet.

The *Yearbook* concludes with Part 7 which deals with the role of science and technology in national security. What are the challenges of performing science in today's climate of increased security concerns? And how do scientists balance security with openness of research results? Lee Hamilton, director of the Woodrow Wilson International Center for Scholars, reminds us that we have to fight terrorism with the tools of peace as well as the tools of war. Chapter 22 contains the executive summary of a report by the Commission on Science and Security regarding the science and security programs at the U.S. Department of Energy. The book closes with the executive summary of a report by the National Research Council, "Making the Nation Safer: The Role of Science and Technology in Countering Terrorism" which addresses technical initiatives and recommendations for how science and technology can help protect the nation from the threat of terrorism.

As in past years, this Yearbook was produced by the staff of the AAAS Directorate for Science and Policy Programs with guidance and support from the Committee on Science, Engineering, and Public Policy (COSEPP). Related AAAS publications include the annual series of AAAS R&D Reports, published in the spring, which examine funding trends and policy issues associated with R&D in the President's budget, and their fall counterparts, the AAAS Reports on Congressional Action on R&D in the Federal Budget, which present the results of the annual congressional budget process.

Periodic updates on science and technology policy and budget issues are provided on the R&D Budget and Policy Program home page on the directorate's web site and through a newsletter, Science and Technology in Congress, published monthly in hardcopy and on the web when Congress is in session. The directorate maintains e-mail lists to inform regular readers when updates have been posted on the web. Information about these and other AAAS science and technology policy publications, programs, meetings, and services can be found on the web at www.aaas.org/spp.

A number of the Colloquium papers included in this volume are based on texts provided by the authors; others have been prepared

from transcripts of presentations delivered at the meeting. All have been professionally edited and reviewed by their authors prior to publication. The reader should note that the views and opinions expressed in these papers are those of the authors and do not necessarily represent the views of AAAS.

Many people contributed to this Yearbook and we are grateful for their contributions. Most important, of course, are the authors whose works are contained here and whose ideas are the *raison d'être* for the book. We appreciate the efforts of editor Rebecca Brune and cover designer Peggy Friedlander. And, once again, we acknowledge with gratitude the contributions of the members of COSEPP. The full text of past editions of this *Yearbook* are available online at www.aaas.org/spp/yearbook.

Up-to-date information about AAAS's S&T policy activities and publications may also be obtained by contacting the Directorate at AAAS, 1200 New York Avenue, NW, Washington, DC 20005 (telephone: 202 326 6600; fax: 202 289 4950; e-mail: science_policy@aaas.org). Comments on this book and suggestions for articles to be included in future editions are welcome. Please address them to the editors at the address above (e-mail: ateich or snelson@aaas.org).

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