

VISION 2033

**Linking Science and Policy
for Tomorrow's World**

Proceedings Celebrating the
30th Anniversary of the
AAAS Science and Technology Policy
Fellowship Programs



ADVANCING SCIENCE. SERVING SOCIETY

*American Association for the Advancement of Science
Washington, DC*

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AAAS Science and Technology Policy
Fellowship Programs
1200 New York Avenue, NW
Washington, DC 20005, USA
Telephone: 202-326-6700
Fax: 202-289-4950
E-mail: joneill@aaas.org
Web: <http://fellowships.aaas.org/>

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Preface

September 2003 marked the 30th anniversary of the American Association for the Advancement of Science (AAAS) Science and Technology Policy Fellowship Programs. To celebrate the program's accomplishments, highlight the impact the program has had on its recipients, and the impact its recipients have had on science policy, AAAS convened a 30th Anniversary Planning Committee to guide the activities.

The Committee set out to define the scope and set the goals of the 30th anniversary celebrations, wishing to recognize the successes of the past while looking toward the future of science and public policy. Striving for an event with lasting impact, the Committee decided on a symposium, featuring speakers of stature focusing on issues that relate to science, technology and public policy over the next 30 years. This 1.5 day program, entitled *Vision 2033: Linking Science and Policy for Tomorrow's World*, became the focal point of the celebration marking the 30th anniversary of the AAAS Fellowship Programs.

Three themes were selected for the symposium:

- Science, Technology and the Human Condition;
- Science, Technology and Global Security; and
- Energy, the Environment and Global Change.

These themes became the panel discussion topics for the Vision 2033 symposium, which featured 27 speakers and panelists. Taking the discussion beyond Washington to the AAAS Annual Meeting held in Seattle, WA, in February, 2004, these areas of focus were used to design a separate three-hour symposium, which included an additional six speakers. This book is organized around the presentations at the Vision 2033 symposium and the AAAS Annual Meeting.

The 30th Anniversary event, originally to be held in September 2003 but postponed due to Hurricane Isabel, took place on May 13 and 14, 2004, in Washington, DC.

Statements of Support from the U.S. President and Congress

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108TH CONGRESS
1ST SESSION

H. CON. RES. 279

Recognizing the significance of the anniversary of the American Association for the Advancement of Science Congressional Science and Engineering Fellowship Program, and reaffirming the commitment to support the use of science in governmental decisionmaking through such Program.

IN THE HOUSE OF REPRESENTATIVES

SEPTEMBER 15, 2003

Mr. EHLERS (for himself, Mr. BOEHLERT, Mr. HOLT, Mr. HALL, Mr. STARK, Mr. PETERSON of Pennsylvania, Mr. MARKEY, Mr. RANGEL, Mr. BROWN of Ohio, Mr. ROHRBACHER, Mr. FILNER, Mr. LEVIN, Mr. McDERMOTT, Mr. SCHIFF, Mr. GUTKNECHT, Mr. OBERSTAR, Mr. HINCHEY, Mr. SMITH of Michigan, Ms. SLAUGHTER, Mr. ENGEL, Mr. BERMAN, Mr. LANTOS, Mr. BOUCHER, Mr. DOGGETT, Mr. JOHNSON of Illinois, Mr. SPRATT, and Mr. BARTON of Texas) submitted the following concurrent resolution; which was referred to the Committee on Science

CONCURRENT RESOLUTION

Recognizing the significance of the anniversary of the American Association for the Advancement of Science Congressional Science and Engineering Fellowship Program, and reaffirming the commitment to support the use of science in governmental decisionmaking through such Program.

Whereas Congress hosted the American Association for the Advancement of Science's (AAAS) first Congressional Science and Engineering Fellows 30 years ago in 1973;

Whereas the AAAS Congressional Science and Engineering Fellowship Program was the first to provide an opportunity for Ph.D.-level scientists and engineers to learn about the policymaking process while bolstering the technical expertise available to Members of Congress and staff;

Whereas Members of Congress hold the AAAS Congressional Science and Engineering Fellowship Program in high regard for the substantial contributions that Fellows have made, serving both in personal offices and on committee staff;

Whereas the Congress is increasingly involved in public policy issues of a scientific and technical nature and recognizes the need to develop additional in-house expertise in the areas of science and engineering;

Whereas more than 800 individuals have held AAAS Congressional Science and Engineering Fellowships since 1973;

Whereas the AAAS Congressional Science and Engineering Fellows represent the full range of physical, biological, and social sciences, and all fields of engineering;

Whereas the AAAS Congressional Science and Engineering Fellows bring to the Congress new insights and ideas, extensive knowledge, and perspectives from a variety of disciplines;

Whereas the AAAS Congressional Science and Engineering Fellows learn about legislative, oversight, and investigative activities through assignments that offer a wide array of responsibilities;

Whereas AAAS Congressional Science and Engineering Fellowships provide an opportunity for scientists and engi-

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neers to transition into careers in government service;
and

Whereas many former AAAS Congressional Science and Engineering Fellows return to their disciplines and share knowledge with students and peers to encourage more scientists and engineers to participate in informing government processes: Now, therefore, be it

1 *Resolved by the House of Representatives (the Senate*
2 *concurring), That the Congress—*

3 (1) recognizes the significance of the anniversary
4 of the American Association for the Advancement
5 of Science Congressional Science and Engineering
6 Fellowship Program;

7 (2) acknowledges the value of 30 years of participation
8 by the American Association for the Advancement of Science
9 Congressional Science and Engineering Fellows; and
10 (3) reaffirms its commitment to support the use

11 of science in governmental decisionmaking through
12 the American Association for the Advancement of
13 Science Congressional Science and Engineering Fellowship
14 Program.
15

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108TH CONGRESS
2D SESSION

S. CON. RES. 107

Recognizing the significance of the 30th anniversary of the American Association for the Advancement of Science Congressional Science and Engineering Fellowship Program, and reaffirming the commitment of Congress to support the use of science in governmental decisionmaking through such program.

IN THE SENATE OF THE UNITED STATES

MAY 12, 2004

Mr. LIEBERMAN (for himself, Mr. BIDEN, Mr. LEVIN, Mr. ROCKEFELLER, Mr. DURBIN, Mr. DOMENICI, Mr. SCHUMER, Mr. BINGAMAN, Mr. CORZINE, Mr. HARKIN, Mr. KENNEDY, Mr. KOHL, Mr. REID, Mr. WARNER, Mr. WYDEN, Mrs. FEINSTEIN, Mr. INHOFE, and Ms. SNOWE) submitted the following concurrent resolution; which was considered and agreed to

CONCURRENT RESOLUTION

Recognizing the significance of the 30th anniversary of the American Association for the Advancement of Science Congressional Science and Engineering Fellowship Program, and reaffirming the commitment of Congress to support the use of science in governmental decisionmaking through such program.

Whereas Congress hosted the first American Association for the Advancement of Science (AAAS) Congressional Science and Engineering Fellows in 1973;

Whereas the AAAS Congressional Science and Engineering Fellowship Program was the first to provide an opportunity for Ph.D.-level scientists and engineers to learn about the policymaking process while bolstering the technical expertise available to members of Congress and their staff;

Whereas members of Congress hold the AAAS Congressional Science and Engineering Fellowship Program in high regard for the substantial contributions that AAAS Congressional Science and Engineering Fellows have made, serving both in personal offices and on committee staff;

Whereas Congress is increasingly involved in public policy issues of a scientific and technical nature, and recognizes the need to develop additional in-house expertise in the areas of science and engineering;

Whereas more than 800 individuals have held AAAS Congressional Science and Engineering Fellowships since 1973;

Whereas the AAAS Congressional Science and Engineering Fellows represent the full range of physical, biological, and social sciences and all fields of engineering;

Whereas the AAAS Congressional Science and Engineering Fellows bring to Congress new insights and ideas, extensive knowledge, and perspectives from a variety of disciplines;

Whereas the AAAS Congressional Science and Engineering Fellows learn about legislative, oversight, and investigative activities through assignments that offer a wide array of responsibilities;

Whereas AAAS Congressional Science and Engineering Fellowships provide an opportunity for scientists and engi-

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neers to transition into careers in government service;
and

Whereas many former AAAS Congressional Science and Engineering Fellows return to their disciplines and share knowledge with students and peers to encourage more scientists and engineers to participate in informing government processes: Now, therefore, be it

1 *Resolved by the Senate (the House of Representatives*
2 *concurring)*, That Congress—

3 (1) recognizes the significance of the 30th anniversary of the American Association for the Advancement of Science Congressional Science and Engineering Fellowship Program;

7 (2) acknowledges the value of over 30 years of participation in the legislative process by the AAAS Congressional Science and Engineering Fellows; and

10 (3) reaffirms its commitment to support the use of science in governmental decisionmaking through the AAAS Congressional Science and Engineering Fellowship Program.

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Acknowledgments

Many individuals contributed to the planning, preparation, and implementation of the AAAS Science and Technology Policy Fellowship Programs' 30th Anniversary celebration and production of these proceedings.

We are indebted to the members of the 30th Anniversary Planning Committee, who first came together in May 2002, not knowing that Hurricane Isabel would land in the Washington, DC, area on the very day of the planned symposium and extend their service. Paget Graham, Program Manager with the Fellowship Programs, took the lead staff role in coordinating activities, putting in countless hours with enthusiasm and diligence. The events and this resulting publication would not have happened without the hard work and dedication of all of the above people.

We are extremely grateful to the authors and presenters who shared their time and ideas to create such a high-quality Vision 2033 symposium and 2004 AAAS Annual Meeting symposium.

Carol Rosen, who had the monumental task of organizing and editing all of the presentations from the Vision 2033 symposium and the 2004 Annual Meeting symposium, and did so with great patience and perseverance, deserves substantial thanks. We also appreciate the design flair and quick turnaround of Beth Elzer, and the production management of Kathy Fishback, both with AAAS's Office of Publication Services.

Finally, we acknowledge and thank all the Science and Technology Policy Fellows, members of the AAAS Committee on Science, Engineering and Public Policy, members of the Congressional Fellowship Program Advisory Committee, and the collaborating scientific societies, agencies and other sponsors that have supported the Fellowship Programs through their first 30 years of successful activity. We look forward to many years of continuing partnership to engage science in policy.

Organizations Sponsoring Science and Technology Policy Fellows, 1973–2003

- AAAS Program on Science, Arms Control and National Security
- Acoustical Society of America
- Alfred P. Sloan Foundation
- American Academy of Physician Assistants
- American Agricultural Economics Association
- American Association for Clinical Chemistry
- American Association for the Advancement of Science
- American Association of Colleges of Pharmacy
- American Chemical Society
- American Dental Association
- American Geological Institute
- American Geophysical Union
- American Historical Association
- American Institute of Aeronautics & Astronautics
- American Institute of Biological Sciences
- American Institute of Chemical Engineers
- American Institute of Physics
- American Mathematical Society/Mathematical Association of America/Society for Industrial and Applied Mathematics
- American Meteorological Society
- American Nuclear Society
- American Philosophical Association
- American Physical Society
- American Podiatric Medical Association
- American Psychological Association
- American Society of Agronomy/Crop Science Society of America/Soil Science Society of America/Weed Science Society of America/North Central Weed Science Society/Northeastern Weed Science Society/Southern Weed Science Society/Western Society of Weed Science
- American Society for Horticultural Sciences
- American Society for Human Genetics
- American Society for Microbiology
- American Society of Civil Engineers
- American Society of Mechanical Engineers
- American Society of Photobiology
- American Society of Plant Physiologists
- American Society of Zoologists
- American Veterinary Medical Association
- American Welding Society
- ASM International, The Materials Information Society
- Biophysical Society
- Computing Research Association
- Congressional Office of Technology Assessment
- Duke Roundtable on Science and Public Affairs
- Ecological Society of America
- Endocrine Society
- Engineering Society of Detroit
- Federation of American Societies for Experimental Biology
- Federation of American Societies of Food Animal Sciences
- Federation of Animal Science Societies
- Geological Society of America
- Greater Houston Hospital Council
- Industrial Research Institute, Inc.
- Institute of Electrical & Electronics Engineers-USA
- Institute of Food Technologists
- Institute of Navigation
- The International Society for Optical Engineering
- Intersociety Consortium for Plant Protection
- Library of Congress, Congressional Research Service
- Materials Research Society
- National Institutes of Health
- National Science Foundation
- National Society of Professional Engineers
- Nuclear Threat Initiative
- Optical Society of America
- RAND Science and Technology Policy Institute
- Society for Conservation Biology
- Society for Research in Child Development
- Society of Automotive Engineers
- Triangle Coalition for Science & Technology Education

- U.S. Agency for International Development
- U.S. Department of Agriculture
- U.S. Department of Commerce
- U.S. Department of Defense
- U.S. Department of Homeland Security
- U.S. Department of State
- U.S. Environmental Protection Agency
- U.S. Food and Drug Administration
- Universities Council on Water Resources