

Furthering America's Research Enterprise

Committee on Assessing the Value of Research in Advancing National Goals

Richard F. Celeste, Ann Griswold, and Miron L. Straf, *Editors*

**Division of Behavioral and Social Sciences and Education
National Research Council**

The National Academies Press

http://www.nap.edu/catalog.php?record_id=18804

A PDF of the report is available without cost at the above Website.

The Current Environment for Research

- **The nation faces increased global competition for new technologies and other innovations, even as it confronts growing economic exigencies.**
- **Congress wants to enhance the benefits of science and to keep the nation at the forefront of the global competition for new technologies and other innovations.**

The Charge to the Study Committee

- **Congress asked the National Academies to study measures of the impacts of research on society.**
- **Of particular interest were measures that could serve to increase the translation of research into commercial products and services.**
- **With NSF funding, a committee was appointed with a broader charge of investigating how research contributes to our economy and well-being and serves other national goals.**
- **The purview was all federally supported research, including that of NSF, NIH, the Department of Energy, and other agencies.**

The Committee on Assessing the Value of Research in Advancing National Goals

The Honorable **Richard F. Celeste** (*Chair*), Colorado College (Emeritus)

Rodney A. Brooks (NAE), Massachusetts Institute of Technology

Alicia Carriquiry, Iowa State University

Christopher M. Coburn, Partners HealthCare, Boston, Mass.

Stephen E. Fienberg (NAS), Carnegie Mellon University

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John E. Kelly, III, International Business Machines Corporation

Josh Lerner, Harvard Business School

David C. Mowery, University of California, Berkeley

Jason Owen-Smith, University of Michigan

The Honorable **John Edward Porter** (IOM), Hogan Lovells, Washington, D.C.

Stephanie S. Shipp, Virginia Tech

Gregory Tasse, University of Washington

Jeffrey Wadsworth (NAE), Battelle Memorial Institute

David Ward, University of Wisconsin—Madison (Emeritus)

Study Director: **Miron L. Straf**, The National Academies

Findings and Conclusions

- **Current measures are inadequate to guide national-level decisions about what research investments will expand the benefits of science.**
- **Nevertheless, the American research enterprise is capable of producing increased benefits for U.S. society, as well as for the global community.**

Why America's Research Enterprise has Been so Successful

It has evolved as a complex, dynamic system with many characteristics of American free enterprise:

- **Decentralized**
- **Pluralistic**
- **Competitive**
- **Meritocratic**
- **Entrepreneurial**

Increased Benefits of the Federal Investment in Research are far More Likely to Flow:

- **Not from promoting the commercialization of research discoveries.**
- **Not by trying to predict the scientific fields that would lead to commercial products and services.**
- **But instead by promoting the conditions for the research enterprise to thrive.**

Three Pillars of the Research Enterprise

- **A talented and interconnected workforce.**
- **Adequate and dependable resources.**
- **World-class basic research in all major areas of science.**

Why World-Class Basic Research in all Major Areas of Science is Important

- **Transformative scientific discoveries increasingly depend on research in a variety of fields.**
- **The competitive advantage may go not to the nation in which the discovery was made but to the nation that can use it more effectively to develop new technologies and other innovations by relying on a broad foundation of knowledge, talent, and capacity derived from basic research in a diversity of scientific fields.**
- **World-class basic research attracts scholars from around the world who further enhance excellence in research.**

Federally-Funded Research Needs to Meet Today's Circumstances

- **We need better metrics to inform policy decisions about research.**
- **No institution evaluates the nation's research enterprise as a whole, assesses its performance, and develops policy options for federally funded research.**
- **Measures of research activities, outputs, and technology transfer are important, but greater benefit will come from measures to guide the pillars of the research enterprise—talent, resources, and basic research—and to better understand the relationships among them.**

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