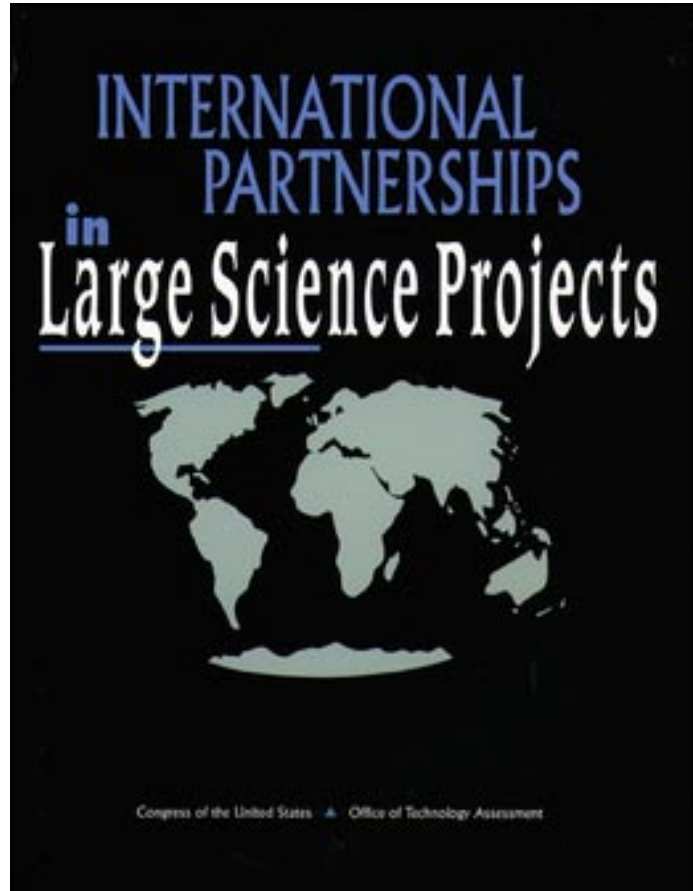


*International Partnerships in Large Science
Projects*

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Foreword

Federal investment in research and development (R&D) has been crucial to many of the nation's achievements in basic sciences. In recent years, however, budgetary pressures have made it difficult to sustain ongoing government R&D efforts and to initiate new ventures. These pressures and the growing international character of scientific research have focused greater attention on the potential contributions of international cooperation, particularly for large-scale, long-term science projects.

The United States has several decades of experience with international scientific collaborations. Numerous successful small-scale scientific cooperative efforts, largely through bilateral agreements, have been conducted. High-energy physics, fusion energy, and space are rich with examples of this type of cooperation. However, U.S. experience in the joint construction and operation of large-scale experiments and facilities is far more limited.

This background paper, requested by the Chairman and Ranking Minority Member of the House Committee on Science, reviews U.S. experience with collaborative projects in many different fields and their implications for future activities. It assesses the factors that facilitate international partnerships in big science projects and those that, conversely, favor the pursuit of purely national projects. The background paper also reviews and identifies several important issues to consider in structuring future collaborations. These include maintaining U.S. scientific expertise, setting research priorities, developing mechanisms to ensure long-term project stability, and safeguarding economic and national security interests.

In the course of this study, OTA drew on the experience of many organizations and individuals. In particular, we appreciate the invaluable assistance of the workshop participants, as well as the efforts of the project's contractors. We would also like to acknowledge the help of the many reviewers who gave their time to ensure the accuracy and comprehensiveness of this study. To all of them goes the gratitude of OTA and the personal thanks of the staff.



ROGER C. HERDMAN
Director

Workshop

International Collaboration in Large Science Projects September 13, 1994

Nancy Carson,
Chair
Nancy Carson Associates
Alexandria, VA

Phillip Anderson
Princeton University
Princeton, NJ

Charles Baker
ITER Project
University of California,
San Diego
La Jolla, CA

David Burke
Stanford Linear Accelerator
Center
Menlo Park, CA

James Decker
Department of Energy
Washington, DC

Lyndon Evans
European Organization for
Nuclear Research
Geneva, Switzerland

Noel W. Hinnners
Martin Marietta Astronautics
Denver, CO

John Logsdon
Space Policy Institute
George Washington University
Washington, DC

Akihiro Maki
Japan Society for the Promotion
of Science
Washington, DC

Edward M. Malloy
Department of State
Washington, DC

Rodney W. Nichols
New York Academy of Sciences
New York, NY

David Overskei
General Atomics
San Diego, CA

Ian Pryke
European Space Agency
Washington, DC

J. Thomas Ratchford
George Mason University
Arlington, VA

John D. Schumacher
National Aeronautics and Space
Administration
Washington, DC

Mr. Anatoliy A. Shurygin
Embassy of the Russian
Federation
Washington, DC

Ken Stanfield
Fermi National Accelerator
Laboratory
Batavia, IL

Note: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the workshop participants. The participants do not, however, necessarily approve, disapprove, or endorse this report. OTA assumes full responsibility for the report and the accuracy of its contents.

Project Staff

Peter D. Blair

Assistant Director
Industry, Commerce, and
International Security Division

Emilia L. Govan

Program Director
Industry, Commerce, and
International Security Division

CONTRACTORS

Center for Science, Trade and
Technology Policy
George Mason University

John Krige

European University Institute

Kenneth Pechter

Research Center for Advanced
Science and Technology
University of Tokyo

Florence Poillon

Editor

PRINCIPAL STAFF**Joanne Sedor**

Project Director

Matthew Weinberg

Project Director

Richard Brody

Analyst

Karen Larsen

Senior Analyst

Robin Roy

Senior Analyst¹

ADMINISTRATIVE STAFF**Marsha Fenn**

Office Administrator

Tina Aikens

Administrative Secretary

Gay Jackson

PC Specialist

Lillian Chapman

Division Administrator

PUBLISHING STAFF**Mary Lou Higgs**

Manager, Publishing Services

Cheryl Davis

Electronic Publishing Specialist

Susan Hoffmeyer

Graphic Designer

Chip Moore

Production Editor

¹ Served as project director until January 1995.

Reviewers

Charles Baker

U.S. ITER Home Team Office
University of California,
San Diego

Julie Baker

National Aeronautics and Space
Administration

William A. Blanpied

National Science Foundation

David L. Burke

Stanford Linear Accelerator
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National Science Foundation

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Office of Technology Assessment

Herman Feshbach

Center for Theoretical Physics
Massachusetts Institute of
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Wendell Fletcher

Office of Technology Assessment

Harold Jaffe

Department of Energy

Don Kash

George Mason University

Genevieve J. Knezo

Congressional Research Service

Akihiro Maki

Japan Society for the Promotion
of Science

Beth A. Masters

National Aeronautics and Space
Administration

John E. Metzler

Department of Energy

David Overskei

SAIC

Francoise Praderie

Megascience Forum
Organization for Economic
Cooperation and Development

Ian Pryke

European Space Agency

J. Thomas Ratchford

George Mason University

Burton Richter

Stanford Linear Accelerator
Center

Michael Roberts

Department of Energy

Don A. Rolt

British Embassy

Rustum Roy

The Pennsylvania State University

Alan Schriesheim

Argonne National Laboratory

Eugene B. Skolnikoff

Massachusetts Institute of
Technology

Marcia Smith

Congressional Research Service

Peter Smith¹

Office of Technology Assessment

Rodney Sobin

Office of Technology Assessment

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Policy

Albert Teich

American Association for the
Advancement of Science

Alvin Trivelpiece

Oak Ridge National Laboratory

Paul F. Uhler

National Research Council

Ray Williamson

Office of Technology Assessment

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