DECADAL STUDIES AT NAS

Here is some information on previous non-space oriented decadal studies done at NAS.

Former committees:
Committee on AMO2010 - An Assessment of and Outlook for Atomic Molecular and Optical Science (Inactive)
Committee on Plasma 2010: An Assessment of and Outlook for Plasma and Fusion Science (Inactive)
Physics Survey Overview Committee (Inactive)
Planning Committee for Decadal Science Strategy surveys: A Workshop (Inactive)

Committee on AMO2010 - An Assessment of and Outlook for Atomic Molecular and Optical Science (Inactive)

Date Organized: 1/6/2005 Date Completed: 6/30/2006

As the first element of the next decadal assessment and outlook Physics 2010**, this study will produce a comprehensive report** on the status of AMO Science. The report shall: review the field of AMO science -- emphasizing recent accomplishments, and identifying new opportunities and compelling scientific questions; identify the impact of AMO science on other scientific fields, emerging technologies, and national needs; identify future workforce, societal and educational issues for AMO science; and make recommendations on how the U.S. research enterprise might realize the full potential of AMO science.

Controlling the Quantum World:
The Science of Atoms, Molecules, and Photons (2007)

http://www.nap.edu/catalog.php?record_id=11705#description
As part of the *Physics 2010* decadal survey project, the Department of Energy and the National Science Foundation requested that the National Research Council assess the opportunities, over roughly the next decade, in atomic, molecular, and optical (AMO) science and technology. In particular, the National Research Council was asked to cover the state of AMO science, emphasizing recent accomplishments and identifying new and compelling scientific questions. *Controlling the Quantum World,* discusses both the roles and challenges for AMO science in instrumentation; scientific research near absolute zero; development of extremely intense x-ray and laser sources; exploration and control of molecular processes; photonics at the nanoscale level; and development of quantum information technology. This book also offers an assessment of and recommendations about critical issues concerning maintaining U.S. leadership in AMO science and technology.

Committee on Plasma 2010: An Assessment of and Outlook for Plasma and Fusion Science (Inactive)

Date Organized: 3/2/2004 Date Completed: 6/30/2007

An assessment of plasma and fusion science in the United States is proposed for completion in 2005 as part of the decadal assessment and outlook for physics, Physics 2010, the **third decadal physics survey** by the NRC to include this field.

Plasma Science:
Advancing Knowledge in the National Interest (2007)

http://books.nap.edu/catalog.php?record_id=11960#description

As part of its current physics decadal survey, Physics 2010, the NRC was asked by the DOE, NSF, and NASA to carry out an assessment of and outlook for the broad field of plasma science and engineering over the next several years. The study was to focus on progress in plasma research, identify the most compelling new scientific opportunities, evaluate prospects for broader application of plasmas, and offer guidance to realize these opportunities. The study paid particular attention to these last two points. This "demand-side" perspective provided a clear look at what plasma research can do to help achieve national goals of fusion energy, economic competitiveness, and nuclear weapons stockpile stewardship. The report provides an examination of the broad themes that frame plasma research: low-temperature plasma science and engineering; plasma physics at high energy density; plasma science of magnetic fusion; space and astrophysical science; and basic plasma science. Within those themes, the report offers a bold vision for future developments in plasma science.

Physics Survey Overview Committee (Inactive)

Date Organized: 8/18/1998 Date Completed: 6/30/2001

The Board on Physics and Astronomy is currently conducting a new decadal survey of physics, through detailed examinations and free standing reports on the status of the main branches of physics and several emerging areas. **The overview volume** will summarize and synthesize the results of these studies and address cross-cutting issues that concern the field as a whole.

Physics in a New Era:
An Overview (2001)

http://www.nap.edu/catalog.php?record_id=10118

Physics at the beginning of the twenty-first century has reached new levels of accomplishment and impact in a society and nation that are changing rapidly. Accomplishments have led us into the information age and fueled broad technological and economic development. The pace of discovery is quickening and stronger links with other fields such as the biological sciences are being developed. The intellectual reach has never been greater, and the questions being asked are more ambitious than ever before.

Physics in a New Era is the final report of the NRC s six-volume decadal physics survey. The book reviews the frontiers of physics research, examines the role of physics in our society, and makes recommendations designed to strengthen physics and its ability to serve important needs such as national security, the economy, information technology, and education.

Planning Committee for Decadal Science Strategy surveys: A Workshop (Inactive)

Date Organized: 11/1/2006 Date Completed: 10/31/2007

A public workshop will be convened to review and discuss lessons learned from the most recent NRC decadal surveys in astronomy and astrophysics, planetary science, solar and space physics, and Earth science and to discuss potential approaches for future surveys so as to enhance their realism, utility, and endurance.

Decadal Science Strategy Surveys:
Report of a Workshop (2007)

http://www.nap.edu/catalog.php?record_id=11894

The Workshop on Decadal Science Strategy Surveys was held on November 14-16, 2006, to promote discussions of the use of National Research Council (NRC) decadal surveys for developing and implementing scientific priorities, to review lessons learned from the most recent surveys, and to identify potential approaches for future surveys that can enhance their realism, utility, and endurance.
The workshop involved approximately 60 participants from academia, industry, government, and the NRC. This report summarizes the workshop presentations, panel discussions, and general discussions on the use of decadal surveys for developing and implementing scientific priorities in astronomy and astrophysics, planetary science, solar and space physics, and Earth science. *Decadal Science Strategy Surveys: Report of a Workshop* summarizes the evnts of the three day workshop.