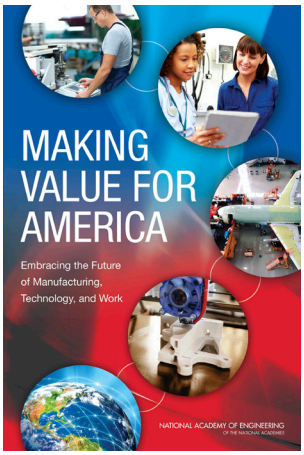
THE DISRUPTION MYTH AND GAPS IN THE INNOVATION ECOSYSTEM

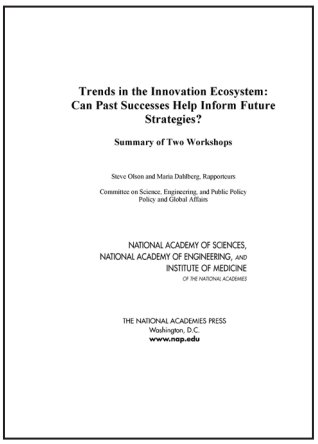
List of selected reports from the Academies related to the meeting topic:
Innovation Ecosystem



MAKING VALUE FOR AMERICA: EMBRACING THE FUTURE OF MANUFACTURING, TECHNOLOGY, AND WORK (NAE 2015)
Globalization, developments in technology, and new business models are transforming the way products and services are conceived, designed, made, and distributed in the U.S. and around the world. These forces present challenges - lower wages and fewer jobs for a growing fraction of middle-class workers - as well as opportunities for "makers" and aspiring entrepreneurs to create entirely new types of businesses and jobs. Making Value for America examines these challenges and opportunities and offers recommendations for collaborative actions between government, industry, and education institutions to help ensure that the U.S. thrives amid global economic changes and remains a leading environment for innovation.

Filled with real-life examples, Making Value for America presents a roadmap to enhance the nation's capacity to pursue opportunities and adapt to transforming value chains by widespread adoption of best practices, a well-prepared and innovative workforce, local innovation networks to support startups and new products, improved flow of capital investments, and infrastructure upgrades.

TRENDS IN THE INNOVATION ECOSYSTEM: CAN PAST SUCCESSES HELP INFORM FUTURE STRATEGIES? SUMMARY OF TWO WORKSHOPS (COSEPUP 2013)
Innovation has been a major engine of American economic and societal progress. It has increased per capita income more than sevenfold since the 19th century, has added three decades to the average lifespan, has revolutionized the way we communicate and share information, and has made the United States the strongest military power in the world. Without its historical leadership in innovation, the United States would be a very different country than it is today.



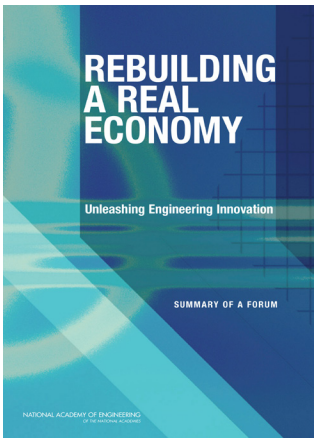
Trends in the Innovation Ecosystem is the summary of two workshops hosted by the Committee on Science, Engineering, and Public Policy (COSEPUP) of the National Academy of Sciences, National Academy of Engineering, and Institute of Medicine in February and May, 2013. Experts from industry, academia, and finance met to discuss the challenges involved in innovation pathways. Both workshops focused on the interactions between research universities and industry and the concept of innovation as a "culture" as opposed to an operational method. The goal was to gain a better understanding of what key factors contributed to successful innovations in the past, how today's environment might necessitate changes in strategy, and what changes are likely to occur in the future in the context of a global innovation ecosystem. This report discusses the state of innovation in America, obstacles to both innovation and to reaping the benefits of innovation, and ways of overcoming those obstacles.

RISING TO THE CHALLENGE: U.S. INNOVATION POLICY FOR THE GLOBAL ECONOMY (PGA 2012)
America's position as the source of much of the world's global innovation has been the foundation of its economic vitality and military power in the post-war. No longer is U.S. pre-eminence assured as a place to turn laboratory discoveries into new commercial products, companies, industries, and high-paying jobs. As the pillars of the U.S. innovation system erode through wavering financial and policy support, the rest of the world is racing to improve its capacity to generate new technologies and products, attract and grow existing industries, and build positions in the high technology industries of tomorrow.

Rising to the Challenge: U.S. Innovation Policy for Global Economy emphasizes the importance of sustaining global leadership in the commercialization of innovation which is vital to America's security, its role as a world power, and the welfare of its people. The second decade of the 21st century is witnessing the rise of a global competition that is based on innovative advantage. To this end, both advanced as well as emerging nations are developing and pursuing policies and programs that are in many cases less constrained by ideological limitations on the role of government and the concept of free market economics. The rapid transformation of the global innovation landscape presents tremendous challenges as well as important opportunities for the United States.

This report argues that far more vigorous attention be paid to capturing the outputs of innovation - the commercial products, the industries, and particularly high-quality jobs to restore full employment. America's economic and national security future depends on our succeeding in this endeavor.

PUBLIC ENGAGEMENT AND CLINICAL TRIALS: NEW MODELS AND DISRUPTIVE TECHNOLOGIES: WORKSHOP SUMMARY (IOM 2011)
Clinical trials provide essential information needed to turn basic medical research findings into patient treatments. New treatments must be studied in large numbers of humans to find out whether they are effective and to assess any harm that may arise from treatment. There is growing recognition among many stakeholders that the U.S. clinical trials enterprise is unable to keep pace with the national demand for research results. The IOM, along with the Mount Sinai School of Medicine, held a workshop June 27-28, 2011, to engage stakeholders and experts in a discussion about possible solutions to improve public engagement in clinical trials.



REBUILDING A REAL ECONOMY: UNLEASHING ENGINEERING INNOVATION: SUMMARY OF A FORUM (NAE 2010)
The financial crisis that began in 2008 is a stark demonstration that we as a nation take great risks when we build too much of our economy on a base that does not create real value. Relying on vaporous transactions to generate wealth is no substitute for making real products and providing real services. In the 21st century, the United States and the rest of the world will face some of the greatest challenges of the modern age: feeding a growing population, generating adequate energy without destroying the environment, countering chronic and emerging infectious diseases. The first decade of the new century has shown that technological innovation is essential for the United States and other countries to meet these challenges.

At the 2009 Annual Meeting of the National Academy of Engineering in Irvine, California, a public forum entitled 'Rebuilding a Real Economy: Unleashing Engineering Innovation' brought together seven prominent leaders of the innovation system to discuss the challenges facing America. The insights of the panel members cut to the heart of what this nation needs to do to remain a global leader in the turbulent world of the 21st century.

This summary captures the main points made by the forum participants with the aim of encouraging further reflection and discussion. As the panelists pointed out, no single action can reenergize our innovation system. A portfolio of interconnected and interdependent initiatives must be undertaken to generate new knowledge and technology and move that new knowledge successfully into a competitive world marketplace. But the panelists clarified the goal toward which we must strive and some of the most important steps we need to take to achieve that goal.

PERSISTENT FORECASTING OF DISRUPTIVE TECHNOLOGIES--REPORT 2 (NRC 2010)
The term "disruptive technology" describes a technology that results in a sudden change affecting already established technologies or markets. Disruptive technologies cause one or more discontinuities in the normal evolutionary life cycle of technology. This may lead to an unexpected destabilization of an older technology order and an opportunity for new competitors to displace incumbents. Frequently cited examples include digital photography and desktop publishing.

The first report of the series, Persistent Forecasting of Disruptive Technologies, discussed how technology forecasts were historically made, assessed various existing forecasting systems, and identified desirable attributes of a next-generation persistent long-term forecasting system for disruptive technologies. This second book attempts to sketch out high-level forecasting system designs. In addition, the book provides further evaluation of the system attributes defined in the first report, and evidence of the feasibility of creating a system with those attributes. Together, the reports are intended to help the Department of Defense and the intelligence community identify and develop a forecasting system that will assist in detecting and tracking global technology trends, producing persistent long-term forecasts of disruptive technologies, and characterizing their potential impact on future U.S. warfighting and homeland defense capabilities.

PERSISTENT FORECASTING OF DISRUPTIVE TECHNOLOGIES (NRC 2009)
Technological innovations are key causal agents of surprise and disruption. In the recent past, the United States military has encountered unexpected challenges in the battlefield due in part to the adversary's incorporation of technologies not traditionally associated with weaponry. Recognizing the need to broaden the scope of current technology forecasting efforts, the Office of the Director, Defense Research and Engineering (DDR&E) and the Defense Intelligence Agency (DIA) tasked the Committee for Forecasting Future Disruptive Technologies with providing guidance and insight on how to build a persistent forecasting system to predict, analyze, and reduce the impact of the most dramatically disruptive technologies. The first of two reports, this volume analyzes existing forecasting methods and processes. It then outlines the necessary characteristics of a comprehensive forecasting system that integrates data from diverse sources to identify potentially game-changing technological innovations and facilitates informed decision making by policymakers.

The committee's goal was to help the reader understand current forecasting methodologies, the nature of disruptive technologies and the characteristics of a persistent forecasting system for disruptive technology. Persistent Forecasting of Disruptive Technologies is a useful text for the Department of Defense, Homeland Security, the Intelligence community and other defense agencies across the nation.

About the Government-University-Industry Research Roundtable (GUIRR)

GUIRR's mission is to convene senior-most representatives from government, universities, and industry to define and explore critical issues related to the national and global science and technology agenda that are of shared interest; to frame the next critical question stemming from current debate and analysis; and to incubate activities of on-going value to the stakeholders. The forum is designed to facilitate candid dialogue among participants, to foster self-implementing activities, and, where appropriate, to carry awareness of consequences to the wider public.

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For more information about GUIRR, visit our web site at
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