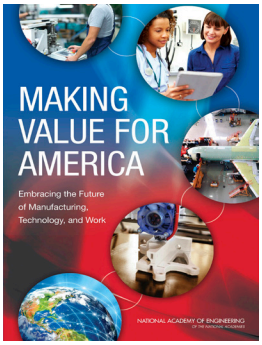
The Role of State Governments in ECONOMIC DEVELOPMENT and R&D COMPETITIVENESS

Government-University-Industry Research Roundtable

List of selected reports from the National Academies related to the meeting topic

A NEW VISION FOR CENTER-BASED ENGINEERING RESEARCH (2017)
The future security, economic growth, and competitiveness of the United States depend on its capacity to innovate. Major sources of innovative capacity are the new knowledge and trained students generated by U.S. research universities. However, many of the complex technical and societal problems the United States faces cannot be addressed by the traditional model of individual university research groups headed by a single principal investigator. Instead, they can only be solved if researchers from multiple institutions and with diverse expertise combine their efforts. The National Science Foundation (NSF), among other federal agencies, began to explore the potential of such center-scale research programs in the 1970s and 1980s; in many ways, the NSF Engineering Research Center (ERC) program is its flagship program in this regard. The ERCs are "interdisciplinary, multi-institutional centers that join academia, industry, and government in partnership to produce transformational engineered systems and engineering graduates who are adept at innovation and primed for leadership in the global economy. To ensure that the ERCs continue to be a source of innovation, economic development, and educational excellence, A New Vision for Center-Based Engineering Research explores the future of center-based engineering research, the skills needed for effective center leadership, and opportunities to enhance engineering education through the centers.

MAKING VALUE FOR AMERICA: EMBRACING THE FUTURE OF MANUFACTURING, TECHNOLOGY, AND WORK (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.



BUILDING THE OHIO INNOVATION ECONOMY: SUMMARY OF A SYMPOSIUM (2013)
Since 1991, the National Research Council, under the auspices of the Board on Science, Technology, and Economic Policy, has undertaken a program of activities to improve policymakers' understandings of the interconnections of science, technology, and economic policy and their importance for the American economy and its international competitive position. The Board's activities have corresponded with increased policy recognition of the importance of knowledge and technology to economic growth. Similarly, many state and local governments and regional entities in the United States are undertaking a variety of initiatives to enhance local economic development and employment through investment programs designed to attract knowledge-based industries and grow innovation clusters. STEP's project on State and Regional Innovation Initiatives is intended to generate a better understanding of the challenges associated with the transition of research into products, the practices associated with successful state and regional programs, and their interaction with federal programs and private initiatives.

BEST PRACTICES IN STATE AND REGIONAL INNOVATION INITIATIVES: COMPETING IN THE 21ST CENTURY (2013)

Most of the policy discussion about stimulating innovation has focused on the federal level. This study focuses on the significant activity at the state level, with the goal of improving the public's understanding of key policy strategies and exemplary practices. Based on a series of workshops and conferences that brought together policymakers along with leaders of industry and academia in a select number of states, the study highlights a rich variety of policy initiatives underway at the state and regional level to foster knowledge based growth and employment. Perhaps what distinguishes this effort at the state level is most of all the high degree of pragmatism. Operating out of necessity, innovation policies at the state level often involve taking advantage of existing resources and recombining them in new ways, forging innovative partnerships among universities, industry and government organizations, growing the skill base, and investing in the infrastructure to develop new technologies and new industries. Many of these initiatives are being guided by leaders from the private sector and universities. The objective of Best Practices in State and Regional Innovation Initiatives: Competing in the 21st Century is not to do an empirical review of the inputs and outputs of various state programs. Nor is it to evaluate which programs are superior. Indeed, some of the notable successes, such as the Albany nanotechnology cluster, represent a leap of leadership, investment, and sustained commitment that has had remarkable results in an industry that is actively pursued by many countries. The study's goal is to illustrate the approaches taken by a variety of highly diverse states as they confront the increasing challenges of global competition for the industries and jobs of today and tomorrow.

NEW YORK'S NANOTECHNOLOGY MODEL: BUILDING THE INNOVATION ECONOMY: SUMMARY OF A SYMPOSIUM (2013)

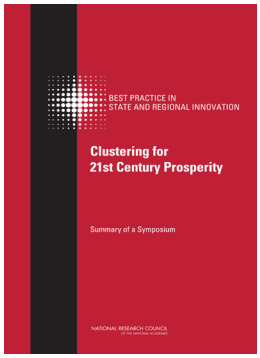
New York's Nanotechnology Model: Building the Innovation Economy is the summary of a 2013 symposium convened by the National Research Council Board on Science, Technology, and Economic Policy and members of the Nano Consortium that drew state officials and staff, business leaders, and leading national figures in early-stage finance, technology, engineering, education, and state and federal policies to review challenges, plans, and opportunities for innovation-led growth in New York. The symposium participants assessed New York's academic, industrial, and human resources, identified key policy issues, and engaged in a discussion of how the state might leverage regional development organizations, state initiatives, and national programs focused on manufacturing and innovation to support its economic development goals. This report highlights the accomplishments and growth of the innovation ecosystem in New York, while also identifying needs, challenges, and opportunities. New York's Nanotechnology Model reviews the development of the Albany nanotech cluster and its usefulness as a model for innovation-based growth, while also discussing the New York innovation ecosystem more broadly.

BUILDING HAWAII'S INNOVATION ECONOMY: SUMMARY OF A SYMPOSIUM (2012)

Building Hawaii's Innovation Economy: Summary of a Symposium explains the study of selected state and regional programs in order to identify best practices with regard to their goals, structures, instruments, modes of operation, synergies across private and public programs, funding mechanisms and levels, and evaluation efforts. This report reviews selected state and regional efforts to capitalize on federal and state investments in areas of critical national needs. Building Hawaii's Innovation Economy also reviews efforts to strengthen existing industries as well as specific new technology focus areas such as nanotechnology, stem cells, and energy in order to better understand program goals, challenges, and accomplishments.

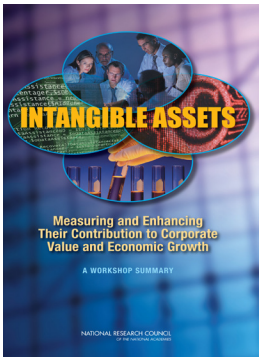
CLUSTERING FOR 21ST CENTURY PROSPERITY: SUMMARY OF A SYMPOSIUM (2012)

Responding to the challenges of fostering regional growth and employment in an increasingly competitive global economy, many U.S. states and regions have developed programs to attract and grow companies as well as attract the talent and resources necessary to develop regional innovation clusters. These state and regionally based initiatives have a broad range of goals and increasingly include larger resources commitments, often with a sectoral focus and often in partnership with foundations and universities. Recent studies, however, have pointed out that many of these efforts lack the scale and the steady commitment needed for success. This has prompted new initiatives to coordinate and concentrate investments from a variety of federal agencies to develop research parks, business incubators, and other strategies to encourage entrepreneurships and high-tech development in the nation's regions. Understanding the nature of innovation clusters and public policies associated with successful cluster development is therefore of current relevance.



RISING TO THE CHALLENGE: U.S. INNOVATION POLICY FOR THE GLOBAL ECONOMY (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.

GROWING INNOVATION CLUSTERS FOR AMERICAN PROSPERITY: SUMMARY OF A SYMPOSIUM (2011)
Responding to the challenges of fostering regional growth and employment in an increasingly competitive global economy, many U.S. states and regions have developed programs to attract and grow companies as well as attract the talent and resources necessary to develop innovation clusters. These state and regionally based initiatives have a broad range of goals and increasingly include significant resources, often with a sectoral focus and often in partnership with foundations and universities. These are being joined by recent initiatives to coordinate and concentrate investments from a variety of federal agencies that provide significant resources to develop regional centers of innovation, business incubators, and other strategies to encourage entrepreneurship and high-tech development. This has led to renewed interest in understanding the nature of innovation clusters and public policies associated with successful cluster development.



INTANGIBLE ASSETS: MEASURING AND ENHANCING THEIR CONTRIBUTION TO CORPORATE VALUE AND ECONOMIC GROWTH (2009)
Intangible assets—which include computer software, research and development (R&D), intellectual property, workforce training, and spending to raise the efficiency and brand identification of firms—comprise a subset of services, which, in turn, accounts for three-quarters of all economic activity. Increasingly, intangibles are a principal driver of the competitiveness of U.S.-based firms, economic growth, and opportunities for U.S. workers. Yet, despite these developments, many intangible assets are not reported by companies, and, in the national economic accounts, they are treated as expenses rather than investments. On June 23, 2008, a workshop was held to examine measurement of intangibles and their role in the U.S. and global economies. The workshop, summarized in the present volume, included discussions of a range of policy-relevant topics, including: what intangibles are and how they work; the variety and scale of emerging markets in intangibles; and what the government's role should be in supporting markets and promoting investment in intangibles.

IMPACT OF SCIENCE AND TECHNOLOGY ON REGIONAL ECONOMIC DEVELOPMENT: AN ASSESSMENT OF NATIONAL POLICIES REGARDING RESEARCH AND DEVELOPMENT IN THE CONTEXT OF REGIONAL ECONOMIC DEVELOPMENT (1969)
This study identified factors related to the interaction of scientific and engineering research and regional development which are important in the consideration of Federal policies for the support of scientific engineering research. Although the report is concerned largely with Federal policies or programs, it was concluded that many of the solutions to regional problems are to be sought in the encouragement of entrepreneurial activities in the private as well as public sectors and at local, state, and regional levels.

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 www.nas.edu/guirr
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