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When genetically engineered food was introduced in America more than a decade ago, it was promoted as a solution to some of the world's food problems; however, the promised advantages have never been realized. In this volume, the author explores why these crops do not benefit consumers, do not feed the world, do not help the environment, and are not rigorously regulated.

Understanding, quantifying, and tracking atmospheric methane and emissions is essential for addressing concerns and informing decisions that affect the climate, economy, and human health and safety. Atmospheric methane is a potent greenhouse gas (GHG) that contributes to global warming. While carbon dioxide is by far the dominant cause of the rise in global average temperatures, methane also plays a significant role because it absorbs more energy per unit mass than carbon dioxide does, giving it a disproportionately large effect on global radiative forcing. In addition to contributing to climate change, methane also affects human health as a precursor to ozone pollution in the lower atmosphere. Improving Characterization of Anthropogenic Methane Emissions in the United States summarizes the current state of understanding of methane emissions sources and the measurement approaches and evaluates opportunities for methodological and inventory development improvements. This report will inform future research agendas of various U.S. agencies, including NOAA, the EPA, the DOE, NASA, the U.S. Department of Agriculture (USDA), and the National Science Foundation (NSF).

Chronic and episodic water shortages are becoming common in many regions of the United States, and population growth in water-scarce regions further compounds the challenges. Increasingly, alternative water sources such as gray-water-untreated wastewater that does not include water from the toilet but generally includes water from bathroom sinks, showers, bathtubs, clothes washers, and laundry sinks- and stormwater-water from rainfall or snow that can be measured downstream in a pipe, culvert, or stream shortly after the precipitation event-are being viewed as resources to supplement scarce water supplies rather than as waste to be discharged as

rapidly as possible. Graywater and stormwater can serve a range of non-potable uses, including irrigation, toilet flushing, washing, and cooling, although treatment may be needed. Stormwater may also be used to recharge groundwater, which may ultimately be tapped for potable use. In addition to providing additional sources of local water supply, harvesting stormwater has many potential benefits, including energy savings, pollution prevention, and reducing the impacts of urban development on urban streams. Similarly, the reuse of graywater can enhance water supply reliability and extend the capacity of existing wastewater systems in growing cities. Despite the benefits of using local alternative water sources to address water demands, many questions remain that have limited the broader application of graywater and stormwater capture and use. In particular, limited information is available on the costs, benefits, and risks of these projects, and beyond the simplest applications many state and local public health agencies have not developed regulatory frameworks for full use of these local water resources. To address these issues, Using Graywater and Stormwater to Enhance Local Water Supplies analyzes the risks, costs, and benefits on various uses of graywater and stormwater. This report examines technical, economic, regulatory, and social issues associated with graywater and stormwater capture for a range of uses, including non-potable urban uses, irrigation, and groundwater recharge. Using Graywater and Stormwater to Enhance Local Water Supplies considers the quality and suitability of water for reuse, treatment and storage technologies, and human health and environmental risks of water reuse. The findings and recommendations of this report will be valuable for water managers, citizens of states under a current drought, and local and state health and environmental agencies.

The Department of Commerce operates two telecommunications research laboratories located at the Department of Commerce's Boulder, Colorado, campus: the National Telecommunications and Information Administration's (NTIA's) Institute for Telecommunications Sciences (ITS) and the National Institute of Standards and Technology's (NIST's) Communications Technology Laboratory (CTL). ITS serves as a principal federal resource for solving the telecommunications concerns of federal agencies, state and local governments, private corporations and associations, standards bodies, and international organizations. ITS could provide an essential service to the nation by being a principal provider of instrumentation and spectrum measurement services; however, the inter-related shortages of funding, staff, and a coherent strategy limits its ability to fully function as a research laboratory. This report examines the institute's performance, resources, and capabilities and the extent to which these meet customer needs. The Boulder telecommunications laboratories currently play an important role in the economic vitality of the country and can play an even greater role given the importance of access to spectrum and spectrum sharing to the wireless networking and mobile cellular industries. Research advances are needed to ensure the continued evolution and enhancement of the connected world the public has come to expect.

The first nuclear engineers emerged from the Manhattan Project in the USA, UK and Canada, but remained hidden behind security for a further decade. Cosseted and cloistered by their govern-

ments, they worked to explore applications of atomic energy at a handful of national labs. This unique bottom-up history traces how the identities of these unusually voiceless experts - forming a uniquely state-managed discipline - were shaped in the context of pre-war nuclear physics, wartime industrial management, post-war politics and utopian energy programmes. Even after their eventual emergence at universities and companies, nuclear workers carried the enduring legacy of their origins. Their shared experiences shaped not only their identities, but our collective memories of the late twentieth century. And as illustrated by the Fukushima accident seven decades after the Manhattan project began, this book explains why they are still seen conflictingly as selfless heroes or as mistrusted guardians of a malevolent genie.

Dragon V2 is a futuristic vehicle that not only provides a means for NASA to transport its astronauts to the orbiting outpost but also advances SpaceX's core objective of reusability. A direct descendant of Dragon, Dragon V2 can be retrieved, refurbished and re-launched. It is a spacecraft with the potential to completely revolutionize the economics of an industry where equipment costing hundreds of millions of dollars is routinely discarded after a single use. It was presented by SpaceX CEO Elon Musk in May 2014 as the spaceship that will carry NASA astronauts to the International Space Station as soon as 2016. SpaceX's Dragon – America's Next Generation Spacecraft describes the extraordinary feats of engineering and human achievement that have placed this revolutionary spacecraft at the forefront of the launch industry and positioned it as the precursor for ultimately transporting humans to Mars. It describes the design and development of Dragon, provides mission highlights of the first six Commercial Resupply Missions, and explains how Musk hopes to eventually colonize Mars.

Research and innovation in the life sciences is driving rapid growth in agriculture, biomedical science, information science and computing, energy, and other sectors of the U.S. economy. This economic activity, conceptually referred to as the bioeconomy, presents many opportunities to create jobs, improve the quality of life, and continue to drive economic growth. While the United States has been a leader in advancements in the biological sciences, other countries are also actively investing in and expanding their capabilities in this area. Maintaining competitiveness in the bioeconomy is key to maintaining the economic health and security of the United States and other nations. Safeguarding the Bioeconomy evaluates preexisting and potential approaches for assessing the value of the bioeconomy and identifies intangible assets not sufficiently captured or that are missing from U.S. assessments. This study considers strategies for safeguarding and sustaining the economic activity driven by research and innovation in the life sciences. It also presents ideas for horizon scanning mechanisms to identify new technologies, markets, and data sources that have the potential to drive future development of the bioeconomy.

Although there is often opposition to individual wars, most people continue to believe that the arms industry is necessary in some form: to safeguard our security, provide jobs and stimulate the economy. Not only conservatives, but many progressives and liberals, support it for these reasons. Indefensible puts forward a devastating challenge to this conventional wisdom, which has normalised the existence of the most savage weapons of

mass destruction ever known. It is the essential handbook for those who want to debunk the arguments of the industry and its supporters: deploying case studies, statistics and irrefutable evidence to demonstrate they are fundamentally flawed, both factually and logically. Far from protecting us, the book shows how the arms trade undermines our security by fanning the flames of war, terrorism and global instability. In countering these myths, the book points to ways in which we can combat the arms trade’s malignant influence, reclaim our democracies and reshape our economies.

The Department of Commerce operates two telecommunications research laboratories located at the Department of Commerce's Boulder, Colorado, campus: the National Telecommunications and Information Administration's (NTIA's) Institute for Telecommunications Sciences (ITS) and the National Institute of Standards and Technology's (NIST's) Communications Technology Laboratory (CTL). CTL develops appropriate measurements and standards to enable interoperable public safety communications, effective and efficient spectrum use and sharing, and advanced communication technologies. CTL is a newly organized laboratory within NIST, formed mid-2014. As it is new and its planned work represents a departure from that carried out by the elements of which it was composed, this study focuses on its available resources and future plans rather than past work. The Boulder telecommunications laboratories currently play an important role in the economic vitality of the country and can play an even greater role given the importance of access to spectrum and spectrum sharing to the wireless networking and mobile cellular industries. Research advances are needed to ensure the continued evolution and enhancement of the connected world the public has come to expect.

This volume presents papers on the topics covered at the National Academy of Engineering's 2018 US Frontiers of Engineering Symposium. Every year the symposium brings together 100 outstanding young leaders in engineering to share their cutting-edge research and innovations in selected areas. The 2018 symposium was held September 5-7 and hosted by MIT Lincoln Laboratory in Lexington, Massachusetts. The intent of this book is to convey the excitement of this unique meeting and to highlight innovative developments in engineering research and technical work.

Growing Up America brings together new scholarship that considers the role of children and teenagers in shaping American political life during the decades following the Second World War. Growing Up America places young people—and their representations—at the center of key political trends, illuminating the dynamic and complex roles played by youth in the midcentury rights revolutions, in constructing and challenging cultural norms, and in navigating the vicissitudes of American foreign policy and diplomatic relations. The authors featured here reveal how young people have served as both political actors and subjects from the early Cold War through the late twentieth-century Age of Fracture. At the same time, Growing Up America contends that the politics of childhood and youth extends far beyond organized activism and the ballot box. By unveiling how science fairs, breakfast nooks, Boy Scout meetings, home economics classrooms, and correspondence functioned as political spaces, this anthology encourages a reassessment of the scope and

nature of modern politics itself.

This book presents the proceedings of the First National Conference on “Sustainable Management of Environment & Natural Resource through Innovation in Science and Technology” (SMTST2020). The book highlights the latest development and innovations in the fields of sustainability, natural resource management, ecology and its environmental fields, geosciences and geology, atmospheric sciences, sustainability, climate change, and extreme weather, global warming, and global change, the effect of climate change on the ecosystem, environment, and pollution, as well as putting a strong emphasis on the multidisciplinary studies.

This volume focuses on frontiers in regional research and identifies trends and future developments in the areas of innovation, regional growth and migration. It also addresses topics such as mobility, regional forecasting, and regional policy, and includes expert contributions on disasters, resilience, and sustainability. Building on recent methodological and modelling advances, as well as on extensive policy-analysis experience, top international regional scientists identify and evaluate emerging new conceptual and methodological trends and directions in regional research. This book will appeal to a wide readership, from regional scientists and economists to geographers, quantitatively oriented regional planners and other related disciplines. It offers a source of relevant information for academic researchers and policy analysts in government, and is also suitable for advanced teaching courses on regional and spatial science, economics and political science.

It is the publicity about the Pollutant Release Inventory’s data which creates an incentive for firms to achieve emission reductions. Accordingly, public access to environmental information constitutes a core characteristic of the aforementioned inventory. Here, in essence, two facets arise. First, with regard to the collection, it is disputed whether such information, which may comprise confidential commercial and industrial information in the EU as well as trade secrets in the US, can be protected under fundamental and constitutional property rights respectively. Second, in the context of dissemination and utilisation, it is arguable whether the information indeed impacts polluters and produces an outcome that secures a certain level of environmental protection. The author responds to the first issue by taking the EU and US jurisdictions into account and strives to analyse how this novel form of Internet disclosure liberates market mechanisms in the quest for effective and efficient emission reductions.

The classic teaching toolbox, updated with new research and ideas Teaching at Its Best is the bestselling, research-based toolbox for college instructors at any level, in any higher education setting. Packed with practical guidance, proven techniques, and expert perspectives, this book helps instructors improve student learning both face-to-face and online. This new fourth edition features five new chapters on building critical thinking into course design, creating a welcoming classroom environment, helping students learn how to learn, giving and receiving feedback, and teaching in multiple modes, along with the latest research and new questions to facilitate faculty discussion. Topics include new coverage of the flipped classroom, cutting-edge technologies, self-regulated learning, the mental processes involved in learning and memory, and more, in

the accessible format and easy-to-understand style that has made this book a much-valued resource among college faculty. Good instructors are always looking for ways to improve student learning. With college classrooms becoming increasingly varied by age, ability, and experience, the need for fresh ideas and techniques has never been greater. This book provides a wealth of research-backed practices that apply across the board. Teach students practical, real-world problem solving Interpret student ratings accurately Boost motivation and help students understand how they learn Explore alternative techniques, formats, activities, and exercises Given the ever-growing body of research on student learning, faculty now have many more choices of effective teaching strategies than they used to have, along with many more ways to achieve excellence in the classroom. Teaching at Its Best is an invaluable toolbox for refreshing your approach, and providing the exceptional education your students deserve.

This book provides multifaceted components and full practical perspectives of systems engineering and risk management in security and defense operations with a focus on infrastructure and manpower control systems, missile design, space technology, satellites, intercontinental ballistic missiles, and space security. While there are many existing selections of systems engineering and risk management textbooks, there is no existing work that connects systems engineering and risk management concepts to solidify its usability in the entire security and defense actions. With this book Dr. Anna M. Doro-on rectifies the current imbalance. She provides a comprehensive overview of systems engineering and risk management before moving to deeper practical engineering principles integrated with newly developed concepts and examples based on industry and government methodologies. The chapters also cover related points including design principles for defeating and deactivating improvised explosive devices and land mines and security measures against kinds of threats. The book is designed for systems engineers in practice, political risk professionals, managers, policy makers, engineers in other engineering fields, scientists, decision makers in industry and government and to serve as a reference work in systems engineering and risk management courses with focus on security and defense operations.

Addressing the need for full and accurate functional information during the design process, this guide offers a comprehensive overview of functional verification from the points of view of leading experts at work in the electronic-design industry.

As the result of disposal practices from the early to mid-twentieth century, approximately 250 sites in 40 states, the District of Columbia, and 3 territories are known or suspected to have buried chemical warfare materiel (CWM). Much of this CWM is likely to occur in the form of small finds that necessitate the continuation of the Army's capability to transport treatment systems to disposal locations for destruction. Of greatest concern for the future are sites in residential areas and large sites on legacy military installations. The Army mission regarding the remediation of recovered chemical warfare materiel (RCWM) is turning into a program much larger than the existing munition and hazardous substance cleanup programs. The Army asked the Nation Research Council (NRC) to examine this evolving mission in part because this

change is significant and becoming even more prominent as the stockpile destruction is nearing completion. One focus in this report is the current and future status of the Non-Stockpile Chemical Material Project (NSCMP), which now plays a central role in the remediation of recovered chemical warfare materiel and which reports to the Chemical Materials Agency. Remediation of Buried Chemical Warfare Materiel also reviews current supporting technologies for cleanup of CWM sites and surveys organizations involved with remediation of suspected CWM disposal sites to determine current practices and coordination. In this report, potential deficiencies in operational areas based on the review of current supporting technologies for cleanup of CWM sites and develop options for targeted research and development efforts to mitigate potential problem areas are identified.

Though thousands of articles and books have been published on various aspects of the Manhattan Project, this book is the first comprehensive single-volume history prepared by a specialist for curious readers without a scientific background. This project, the United States Army’s program to develop and deploy atomic weapons in World War II, was a pivotal event in human history. The author presents a wide-ranging survey that not only tells the story of how the project was organized and carried out, but also introduces the leading personalities involved and features simplified but accurate descriptions of the underlying science and the engineering challenges. The technical points are illustrated by reader-friendly graphics. .

While the big bad corporation has often been the offender in many of the world's greatest environmental disasters, in the case of the mass poisoning at Camp Lejeune the culprit is a revered institution: the US Marine Corps. For two decades now, revelations have steadily emerged about pervasive contamination, associated clusters of illness and death among the Marine families stationed there, and military stonewalling and failure to act. Mike Magner's chilling investigation creates a suspenseful narrative from the individual stories, scientific evidence, and smoldering sense of betrayal among those whose motto is undying fidelity. He also raises far-reaching and ominous questions about widespread contamination on US military bases worldwide.

Annotation Engineering in a Land-Grant Context considers the US government's first foray into higher education by examining engineering education at the nation's land-grant universities over the past 140 years. The authors demonstrate how that history has framed the present and suggest how it is likely to influence the fashioning of the future.

"Doubt is our product," a cigarette executive once observed, "since it is the best means of competing with the 'body of fact' that exists in the minds of the general public. It is also the means of establishing a controversy." In this eye-opening expose, David Michaels reveals how the tobacco industry's duplicitous tactics spawned a multimillion dollar industry that is dismantling public health safeguards. Product defense consultants, he argues, have increasingly skewed the scientific literature, manufactured and magnified scientific uncertainty, and influenced policy decisions to the advantage of polluters and the manufacturers of dangerous products. To keep the public confused about the hazards posed by global warming, second-hand smoke, asbestos, lead, plastics, and many other toxic materials, industry executives have

hired unscrupulous scientists and lobbyists to dispute scientific evidence about health risks. In doing so, they have not only delayed action on specific hazards, but they have constructed barriers to make it harder for lawmakers, government agencies, and courts to respond to future threats. The Orwellian strategy of dismissing research conducted by the scientific community as "junk science" and elevating science conducted by product defense specialists to "sound science" status also creates confusion about the very nature of scientific inquiry and undermines the public's confidence in science's ability to address public health and environmental concerns Such reckless practices have long existed, but Michaels argues that the Bush administration deepened the dysfunction by virtually handing over regulatory agencies to the very corporate powers whose products and behavior they are charged with overseeing. In Doubt Is Their Product Michaels proves, beyond a doubt, that our regulatory system has been broken. He offers concrete, workable suggestions for how it can be restored by taking the politics out of science and ensuring that concern for public safety, rather than private profits, guides our regulatory policy. Named one of the best Sci-Tech books of 2008 by Library Journal!

More than 3.7 million U.S. service members have participated in operations taking place in the Southwest Asia Theater of Military Operations since 1990. These operations include the 1990-1991 Persian Gulf War, a post-war stabilization period spanning 1992 through September 2001, and the campaigns undertaken in the wake of the September 11, 2001, attacks. Deployment to Iraq, Kuwait, Saudi Arabia, Bahrain, Gulf of Aden, Gulf of Oman, Oman, Qatar, the United Arab Emirates, and Afghanistan exposed service members to a number of airborne hazards, including oil-well fire smoke, emissions from open burn pits, dust and sand suspended in the air, and exhaust from diesel vehicles. The effects of these were compounded by stressors like excessive heat and noise that are inevitable attributes of service in a combat environment. Respiratory Health Effects of Airborne Hazards Exposures in the Southwest Asia Theater of Military Operations reviews the scientific evidence regarding respiratory health outcomes in veterans of the Southwest Asia conflicts and identifies research that could feasibly be conducted to address outstanding questions and generate answers, newly emerging technologies that could aid in these efforts, and organizations that the Veterans Administration might partner with to accomplish this work.

Established in 1871 on the outskirts of London, the Royal Indian Engineering College at Coopers Hill was arguably the first engineering school in Britain. For thirty-five years the college helped staff the government institutions of British India responsible for the railways, irrigation systems, telegraph network, and forests. Founded to meet the high demand for engineers in that country, it was closed thirty-five years later because its educational innovations had been surpassed by Britain’s universities – on both occasions against the wishes of the Government of India. Imperial Engineers offers a complete history of the Royal Indian Engineering College. Drawing on the diaries of graduates working in India, the college magazine, student and alumni periodicals, and other archival documents, Richard Hornsey details why the college was established and how the students’ education prepared them for their work. Illustrating the impact of the college and its graduates in

India and beyond, Imperial Engineers illuminates the personal and professional experiences of British men in India as well as the transformation of engineering education at a time of social and technological change.

The integrity of knowledge that emerges from research is based on individual and collective adherence to core values of objectivity, honesty, openness, fairness, accountability, and stewardship. Integrity in science means that the organizations in which research is conducted encourage those involved to exemplify these values in every step of the research process. Understanding the dynamics that support â€" or distort â€" practices that uphold the integrity of research by all participants ensures that the research enterprise advances knowledge. The 1992 report Responsible Science: Ensuring the Integrity of the Research Process evaluated issues related to scientific responsibility and the conduct of research. It provided a valuable service in describing and analyzing a very complicated set of issues, and has served as a crucial basis for thinking about research integrity for more than two decades. However, as experience has accumulated with various forms of research misconduct, detrimental research practices, and other forms of misconduct, as subsequent empirical research has revealed more about the nature of scientific misconduct, and because technological and social changes have altered the environment in which science is conducted, it is clear that the framework established more than two decades ago needs to be updated. Responsible Science served as a valuable benchmark to set the context for this most recent analysis and to help guide the committee's thought process. Fostering Integrity in Research identifies best practices in research and recommends practical options for discouraging and addressing research misconduct and detrimental research practices.

Social Security Administration Electronic Service Provision examines the Social Security Administration's (SSA's) proposed e-government strategy and provides advice on how the SSA can best deliver services to its constituencies in the future. The assessment by the Committee on the Social Security Administration's E--Government Strategy and Planning for the Future was based on (1) its examination of the SSA's current e-government strategy, including technological assumptions, performance measures and targets, planned operational capabilities, strategic requirements, and future goals; (2) its consideration of strategies, assumptions, and technical and operational requirements in comparable public- and private-sector institutions; and (3) its consideration of the larger organizational, societal, and technological context in which the SSA operates.

This new book from the National Research Council finds serious weaknesses in the government's plan for research on the potential health and environmental risks posed by nanomaterials, which are increasingly being used in consumer goods and industry. An effective national plan for identifying and managing potential risks is essential to the successful development and public acceptance of nanotechnology-enabled products. The book recommends a robust national strategic plan for addressing nanotechnology-related EHS risks, which will need to focus on promoting research that can assist all stakeholders, including federal agencies, in planning, controlling, and optimizing the use of engineered nanomaterials while minimizing EHS effects of concern to society. Such a plan will ensure the

timely development of engineered nanoscale materials that will bring about great improvements in the nation's health, its environmental quality, its economy, and its security.

Publicly available statistics from government agencies that are credible, relevant, accurate, and timely are essential for policy makers, individuals, households, businesses, academic institutions, and other organizations to make informed decisions. Even more, the effective operation of a democratic system of government depends on the unhindered flow of statistical information to its citizens. In the United States, federal statistical agencies in cabinet departments and independent agencies are the governmental units whose principal function is to compile, analyze, and disseminate information for such statistical purposes as describing population characteristics and trends, planning and monitoring programs, and conducting research and evaluation. The work of these agencies is coordinated by the U.S. Office of Management and Budget. Statistical agencies may acquire information not only from surveys or censuses of people and organizations, but also from such sources as government administrative records, private-sector datasets, and Internet sources that are judged of suitable quality and relevance for statistical use. They may conduct analyses, but they do not advocate policies or take partisan positions. Statistical purposes for which they provide information relate to descriptions of groups and exclude any interest in or identification of an individual person, institution, or economic unit. Four principles are fundamental for a federal statistical agency: relevance to policy issues, credibility among data users, trust among data providers, and independence from political and other undue external influence.Â Principles and Practices for a Federal Statistical Agency: Sixth Edition presents and comments on these principles as they've been impacted by changes in laws, regulations, and other aspects of the environment of federal statistical agencies over the past 4 years.

As the Internet has grown, so have the challenges associated with delivering static, streaming, and dynamic content to end-users. This book is unique in that it addresses the topic of content networking exclusively and comprehensively, tracing the evolution from traditional web caching to today's open and vastly more flexible architecture. With this evolutionary approach, the authors emphasize the field's most persistent concepts, principles, and mechanisms--the core information that will help you understand why and how content delivery works today, and apply that knowledge in the future. Focuses on the principles that will give you a deep and timely understanding of content networking. Offers dozens of protocol-specific examples showing how real-life Content Networks are currently designed and implemented. Provides extensive consideration of Content Services, including both the Internet Content Adaptation Protocol (ICAP) and Open Pluggable Edge Services (OPES). Examines methods for supporting time--constrained media such as streaming audio and video and real-time media such as instant messages. Combines the vision and rigor of a prominent researcher with the practical experience of a seasoned development engineer to provide a unique combination of theoretical depth and practical application.

Have you ever wondered what it is like to work on a nuclear power plant? Robert Dutch worked in the UK's nuclear

industry for many years as a scientist and then as a tutor at a nuclear training center. He also holds degrees in theology. Drawing upon his qualifications and experience Robert addresses the controversial issue of nuclear power from a Christian perspective. In contrast to a negative nuclear narrative often portrayed, he presents a positive nuclear narrative alongside other ways of generating electricity. Be prepared to be challenged to think seriously about nuclear's merits in providing clean, low-carbon electricity.

Environmental research has driven landmark improvements that led to the protection of human and ecosystem health. Recognizing the value of knowledge generated by environmental research and the ingenuity within academic and nonprofit institutions, the US Environmental Protection Agency (EPA) created a program known as Science to Achieve Results, or STAR, in 1995. STAR is EPA's primary competitive extramural grants program. A Review of the Environmental Protection Agency's Science to Achieve Results Research Program assesses the program's scientific merit, public benefits, and overall contributions in the context of other relevant research and recommends ways to enhance those aspects of the program. This report also considers the conclusions and recommendations of a prior National Research Council review of the STAR program (2003), the STAR program's research priorities in light of the nation's environmental challenges, and the effects of recent STAR funding trends on obtaining scientific information needed to protect public health and the environment.

Providing an overview of the process of e-inclusion for older people and addressing the ethical, social and legal aspects of the process, this book is suitable for researchers, policy-makers, organisations and companies, as well as for those with an interest in the identification and promotion of good practice within an ageing society.

The National Nanotechnology Initiative (NNI) is a multiagency, multidisciplinary federal initiative comprising a collection of research programs and other activities funded by the participating agencies and linked by the vision of "a future in which the ability to understand and control matter at the nanoscale leads to a revolution in technology and industry that benefits society." As first stated in the 2004 NNI strategic plan, the participating agencies intend to make progress in realizing that vision by working toward four goals. Planning, coordination, and management of the NNI are carried out by the interagency Nanoscale Science, Engineering, and Technology (NSET) Subcommittee of the National Science and Technology Council (NSTC) Committee on Technology (CoT) with support from the National Nanotechnology Coordination Office (NNCO). Triennial Review of the National Nanotechnology Initiative is the latest National Research Council review of the NNI, an assessment called for by the 21st Century Nanotechnology Research and Development Act of 2003. The overall objective of the review is to make recommendations to the NSET Subcommittee and the NNCO that will improve the NNI's value for basic and applied research and for development of applications in nanotechnology that will provide economic, societal, and national security benefits to the United States. In its assessment, the committee found it important to understand in some detail-and to describe in its report-the NNI's structure and organization; how the NNI fits within the larger federal research en-

terprise, as well as how it can and should be organized for management purposes; and the initiative's various stakeholders and their roles with respect to research. Because technology transfer, one of the four NNI goals, is dependent on management and coordination, the committee chose to address the topic of technology transfer last, following its discussion of definitions of success and metrics for assessing progress toward achieving the four goals and management and coordination. Addressing its tasks in this order would, the committee hoped, better reflect the logic of its approach to review of the NNI. Triennial Review of the National Nanotechnology Initiative also provides concluding remarks in the last chapter.

Research universities are critical contributors to our national research enterprise. They are the principal source of a world--class labor force and fundamental discoveries that enhance our lives and the lives of others around the world. These institutions help to create an educated citizenry capable of making informed and crucial choices as participants in a democratic society. However many are concerned that the unintended cumulative effect of federal regulations undercuts the productivity of the research enterprise and diminishes the return on the federal investment in research. Optimizing the Nation's Investment in Academic Research reviews the regulatory framework as it currently exists, considers specific regulations that have placed undue and often unanticipated burdens on the research enterprise, and reassesses the process by which these regulations are created, reviewed, and retired. This review is critical to strengthen the partnership between the federal government and research institutions, to maximize the creation of new knowledge and products, to provide for the effective training and education of the next generation of scholars and workers, and to optimize the return on the federal investment in research for the benefit of the American people.