Physical Science 2014 March Paper

""--Provided by publisher.

"Publications of the Academy of Natural Sciences of Philadelphia": v. 53, 1901, p. 788-794.

In the past few years, interest in plug-in electric vehicles (PEVs) has grown. Advances in battery and other technologies, new federal standards for carbon-dioxide emissions and fuel economy, state zero-emission-vehicle requirements, and the current administration's goal of putting millions of alternative-fuel vehicles on the road have all highlighted PEVs as a transportation alternative. Consumers are also beginning to recognize the advantages of PEVs over conventional vehicles, such as lower operating costs, smoother operation, and better acceleration: the ability to fuel up at home: and zero tailpipe emissions when the vehicle operates solely on its battery. There are, however, barriers to PEV deployment, including the vehicle cost, the short all-electric driving range, the long battery charging time, uncertainties about battery life, the few choices of vehicle models, and the need for a charging infrastructure to support PEVs. What should industry do to improve the performance of PEVs and make them more attractive to consumers? At the request of Congress, Overcoming Barriers to Deployment of Plug-in Electric Vehicles identifies barriers to the introduction of electric vehicles and recommends ways to mitigate these barriers. This report examines the characteristics and capabilities of electric vehicle technologies, such as cost, performance, range, safety, and durability, and assesses how these factors might create barriers to widespread deployment. Overcoming Barriers to Deployment of Plug-in Electric Vehicles provides an overview of the current status of PEVs and makes recommendations to spur the industry and increase the attractiveness of this promising technology for consumers. Through consideration of consumer behaviors, tax incentives, business models, incentive programs, and infrastructure needs, this book studies the state of the industry and makes recommendations to further its development and acceptance.

Most poeple in most countries have been steadily better in human development. Advances in technology and incomes hold ever-greater for longer, healthier, more secure lives.

Nuclear Deterrence in a Multipolar World
Sport Development in the United States
Research Handbook on EU Energy Law and Policy
High Performance and Mass Participation
The U.S., Russia and Security Challenges
Overcoming Barriers to Deployment of Plug-in Electric Vehicles

Latest Solved Paper with Scheme of Valuation-2022. Strictly as per the latest syllabus, blueprint & design of the question paper. All Typologies-Objective, VSA, SA & Essay Types Questions Previous Years' Exam(2011-2022) Questions with Scheme of Valuation NCERT Textbook Questions fully solved PUE Question Bank Fully solved Revision notes, Mind Maps & Concept videos for clarity of Concepts

The development of both elite, high performance sport and mass participation, grassroots-level sport are central concerns for governments and sports governing bodies. This important new study is the first to closely examine the challenges and opportunities for sports development in the United States, a global sporting giant with a unique, market-driven sporting landscape. Presenting an innovative model of integrated sports development, the book explores the inter-relationship between elite and mass sport across history, drawing on comparative international examples from Australia to the former USSR and Eastern bloc countries. At the heart of the book is an in-depth empirical study of three (traditional and emerging) sports in the US – tennis, soccer and rugby – that offer important lessons on the development of elite sport, methods for increasing participation, and the establishment of new sports in new markets. No other book has attempted to model sports development in the United States in such depth before. Therefore this should be essential reading for all students, researchers, administrators or policy-makers with an interest in sports development, sports management, sports policy, or comparative, international sport studies.

Intermediate First Year Physics Test papers Issued by Board of Intermediate Education w.e.f 2013-2014.

Medium- and heavy-duty trucks, motor coaches, and transit buses - collectively, "medium- and heavy-duty vehicles", or MHDVs - are used in every sector of the economy. The fuel consumption and greenhouse gas emissions of MHDVs have become a focus of legislative and regulatory action in the past few years. This study is a follow-on to the National Research Council's 2010 report, Technologies and Approaches to Reducing the Fuel Consumption of Medium-and Heavy-Duty Vehicles. That report provided a series of findings and recommendations on the development of regulations for reducing fuel consumption of MHDVs. On September 15, 2011, NHTSA and EPA finalized joint Phase I rules to establish a comprehensive Heavy-Duty National Program to reduce greenhouse gas emissions and fuel consumption for on-road medium- and heavy-duty vehicles. As NHTSA and EPA began working on a second round of standards, the National Academies issued another report, Reducing the Fuel Consumption and Greenhouse Gas Emissions of Medium- and Heavy-Duty Vehicles, Phase Two: First Report, providing recommendations for the Phase II standards. This third and final report focuses on a possible third phase of regulations to be promulgated by these agencies in the next decade.

Linking Policy and Economics
Hypothetical Spacecraft and Interstellar Travel
35 JEE Main ONLINE & OFFLINE Physics, Chemistry & Mathematics Topic-wise Solved Papers - 4th Edition
Emerging Technologies for STEAM Education
Reducing Fuel Consumption and Greenhouse Gas Emissions of Medium- and Heavy-Duty Vehicles, Phase Two
Technological Innovation in Legacy Sectors

This volume contains revised and extended research articles written by prominent researchers who participated in the international conference on Advances in Engineering Technologies, which was held in Hong Kong, 12-14 March, 2014. Topics covered include engineering physics, engineering mathematics, scientific computing, control theory, artificial intelligence, electrical engineering, communic book offers the state of art of tremendous advances in engineering technologies and physical science and applications, and also serves as an excellent reference work for researchers and graduate students working with/on engineering technologies and physical science and applications.

New astronomical facilities, such as the under-construction Large Synoptic Survey Telescope and planned 30-meter-class telescopes, and new instrumentation on existing optical and infrared (OIR) telescopes, hold the promise of groundbreaking research and discovery. How can we extract the best science from these and other astronomical facilities, in an era of potentially flat federal budgets f Optimizing the U.S. Ground-Based Optical and Infrared Astronomy System provides guidance for these new programs that align with the scientific priorities and the conclusions and recommendations of two National Research Council (NRC) decadal surveys, New Worlds, New Horizons for Astronomy and Astrophysics and Vision and Voyages for Planetary Sciences in the Decade 2013-2022, as wel vision for a U.S. OIR System that includes a telescope time exchange designed to enhance science return by broadening access to capabilities for a diverse community, an ongoing planning process to identify and construct next generation capabilities to realize decadal science priorities, and near-term critical coordination, planning, and instrumentation needed to usher in the era of LSST and gian Hypothetical Spacecraft and Interstellar Travel collects information about the latest and greatest hypothetical spacecraft.

Rapidly generating and processing large amounts of data, supercomputers are currently at the leading edge of computing technologies. Supercomputers are employed in many different fields, establishing them as an integral part of the computational sciences. Research and Applications in Global Supercomputing investigates current and emerging research in the field, as well as the application of broad range of concepts, this publication is a comprehensive reference source for professionals, researchers, students, and practitioners interested in the various topics pertaining to supercomputing and how this technology can be applied to solve problems in a multitude of disciplines.

The Industry Implications of DVB-S2X, High Throughput Satellites, Ultra HD, M2M, and IP
Optimizing the U.S. Ground-Based Optical and Infrared Astronomy System
CERN Courier
Climate Change Risks and Adaptation Linking Policy and Economics
Semiconductors
Proceedings of the Academy of Natural Sciences of Philadelphia

This theory-to-practice guide offers leading-edge ideas for wide-scale curriculum reform in sciences, technology, engineering, the arts, and mathematics--the STEAM subjects. Chapters emphasize the critical importance of current and emerging digital technologies in bringing STEM education up to speed and implementing changes to curricula at the classroom level. Of particular interest are the diverse ways of integrating the liberal arts into STEM course content in mutually reshaping humanities education and scientific education. This framework and its many instructive examples are geared to ensure that both educators and students can become innovative thinkers and effective problem-solvers in a knowledge-based society. Included in the coverage: Reconceptualizing a college science learning experience in the new digital era. Using mobile devices to support formal, informal, and semi-formal learning. Change of attitudes, self-concept, and team dynamics in engineering education. The language arts as foundational for science, technology, engineering, art, and mathematics. Can K-12 math teachers train students to make valid logical reasoning? Moving forward with STEAM education research. Emerging Technologies for STEAM Education equips educators, education researchers, administrators, and education policymakers with curricular and pedagogical strategies for making STEAM education the bedrock of accessible, relevant learning in keeping with today's digital advances.

The light-duty vehicle fleet is expected to undergo substantial technological changes over the next several decades. New powertrain designs, alternative fuels, advanced materials and significant changes to the vehicle body are being driven by increasingly stringent fuel economy and greenhouse gas emission standards. By the end of the next decade, cars and light-duty trucks will be more fuel efficient, weigh less, emit less air pollutants, have more safety features, and will be more expensive to purchase relative to current vehicles. Though the gasoline-powered spark ignition engine will continue to be the dominant powertrain configuration even through 2030, such vehicles will be equipped with advanced technologies, materials, electronics and controls, and aerodynamics. And by 2030, the deployment of alternative methods to propel and fuel vehicles and alternative modes of transportation, including autonomous vehicles, will be well underway. What are these new technologies - how will they work, and will some technologies be more effective than others? Written to inform The United States Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and Environmental Protection Agency (EPA) Corporate Average Fuel Economy (CAFE) and greenhouse gas (GHG) emission standards, this new report from the National Research Council is a technical evaluation of costs, benefits, and implementation issues of fuel reduction technologies for next-generation light-duty vehicles. Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles estimates the cost, potential efficiency improvements, and barriers to commercial deployment of technologies that might be employed from 2020 to 2030. This report describes these promising technologies and makes recommendations for their inclusion on the list of technologies applicable for the 2017-2025 CAFE standards.

Building on the experience of OECD countries, this report sets out how the latest economic evidence and tools can enable better policy making for adaptation.

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Assessing and Responding to the Growth of Computer Science Undergraduate Enrollments
Investing in Science
Data Management for Researchers
Communication Technology Update and Fundamentals
Soviet Physics
May 2014, March 2014, May 2013, March 2013, Model papers, Question Bank, Guess papers

This authoritative Research Handbook presents, for the first time, a comprehensive overview of the most important research and latest trends in EU energy law and policy. It offers high-quality original contributions that provide state-of-the-art research in this rapidly evolving area, situated in the broader context of international economic law and governance.

Communication Technology Update and Fundamentals has set the standard as the single best resource for students and professionals looking to brush up on how communication technologies have developed, grown, and converged, as well as what's in store for the future. The 15th edition is completely updated, reflecting the changes that have swept the communication industries. The first five chapters offer the communication technology fundamentals, including the ecosystem, the history, and structure—then delves into each of about two dozen technologies, including mass media, computers, consumer electronics, and networking technologies. Each chapter is written by experts who provide snapshots of the state of each individual field. Together, these updates provide a broad overview of these industries, as well as the role communication technologies play in our everyday lives. In addition to substantial updates to each chapter, the 15th edition includes: First-ever chapters on Big Data and the Internet of Things Updated user data in every chapter Projections of what each technology will become by 2031 Suggestions on how to get a job working with the technologies discussed The companion website, www.tfi.com/ctu, offers updated information on the technologies covered in this text, as well as links to other resources

Presents various challenges faced by security policy makers and risk analysts, and mathematical approaches that inform homeland security policy development and decision support Compiled by a group of highly qualified editors, this book provides a clear connection between risk science and homeland security policy making and includes top-notch contributions that uniquely highlight the role of risk analysis for informing homeland security policy decisions. Featuring discussions on various challenges faced in homeland security risk analysis, the book seamlessly divides the subject of risk analysis for homeland security into manageable chapters, which are organized by the concept of risk-informed decisions, methodology for applying risk analysis, and relevant examples and case studies. Applied Risk Analysis for Guiding Homeland Security Policy and Decisions offers an enlightening overview of risk analysis methods for homeland security. For instance, it presents readers with an exploration of radiological and nuclear risk assessment, along with analysis of uncertainties in radiological and nuclear pathways. It covers the advances in risk analysis for border security, as well as for cyber security. Other topics covered include: strengthening points of entry; systems modeling for rapid containment and casualty mitigation; and disaster preparedness and critical infrastructure resilience. Highlights how risk analysis helps in the decision-making process for homeland security policy Presents specific examples that detail how various risk analysis methods provide decision support for homeland security policy makers and risk analysts Describes numerous case studies from academic, government, and industrial perspectives that apply risk analysis methods for addressing challenges within the U.S. Department of Homeland Security (DHS) Offers detailed information regarding each of the five DHS missions: prevent terrorism and enhance security; secure and manage our borders; enforce and administer our immigration laws; safeguard and secure cyberspace; and strengthen national preparedness and resilience Discusses the various approaches and challenges faced in homeland risk analysis and identifies improvements and methodological advances that influenced DHS to adopt an increasingly risk-informed basis for decision-making Written by top educators and professionals who clearly illustrate the link between risk science and homeland security policy making Applied Risk Analysis for Guiding Homeland Security Policy and Decisions is an excellent textbook and/or supplement for upper-undergraduate and graduate-level courses related to homeland security risk analysis. It will also be an extremely beneficial resource and reference for homeland security policy analysts, risk analysts, and policymakers from private and public sectors, as well as researchers, academics, and practitioners who utilize security risk analysis methods.

In Fragile World: Ecology and the Church, scholars and activists from Christian communities as far-flung as Honduras, the Philippines, Colombia, and Kenya present a global angle on the global ecological crisis--in both its material and spiritual senses--and offer Catholic resources for responding to it. This volume explores the deep interconnections for better and for worse, between the global North and the global South, and analyzes the relationship among the physical environment, human society, culture, theology, and economics--the "integral ecology" described by Pope Francis in Laudato Si'. Integral ecology demands that we think deeply about humans and the physical environment, but also about the God who both created the world and sustains it in being. At its root, the ecological crisis is a theological crisis, not only in the way that humans regard creation and their place in it, but in the way that humans think about God. For Pope Francis in Laudato Si', the root of the crisis is that we humans have tried to put ourselves in God's place. According to Pope Francis, therefore, "A fragile world, entrusted by God to human care, challenges us to devise intelligent ways of directing, developing, and limiting our power."

Research and Applications in Global Supercomputing
Research Handbook on Climate Governance
Adaptation to Climate Change
Applied Risk Analysis for Guiding Homeland Security Policy and Decisions
Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles
Organize, maintain and share your data for research success

A proposal for using cost-benefit analysis to evaluate the socioeconomic impact of public investment in large scientific projects. Large particle accelerators, outer space probes, genomics platforms: all are scientific enterprises managed through the new form of the research infrastructure, in which communities of scientists collaborate across nations, universities, research institutions, and disciplines. Such large projects are often publicly funded, with no accepted way to measure the benefits to society of these investments. In this book, Massimo Florio suggests the use of cost-benefit analysis (CBA) to evaluate the socioeconomic impact of public investment in large and costly scientific projects. The core concept of CBA of any infrastructure is to undertake the consistent intertemporal accounting of social welfare effects using the available information. Florio develops a simple framework for such accounting in the research infrastructure context and then offers a systematic analysis of the benefits in terms of the social agents involved. He measures the benefits to scientists, students, and postdoctoral researchers; the effect on firms of knowledge spillovers; the benefits to users of information technology and science-based innovation; the welfare effects on the general public of cultural services provided by RIs; and the willingness of taxpayers to fund scientific knowledge creation. Finally, Florio shows how these costs and benefits can be expressed in the form of stochastic net present value and other summary indicators.

The power of mapping: principles for visualizing knowledge, illustrated by many stunning large-scale, full-color maps. Maps of physical spaces locate us in the world and help us navigate unfamiliar routes. Maps of topical spaces help us visualize the extent and structure of our collective knowledge; they reveal bursts of activity, pathways of ideas, and borders that beg to be crossed. This book, from the author of Atlas of Science, describes the power of topical maps, providing readers with principles for visualizing knowledge and offering as examples forty large-scale and more than 100 small-scale full-color maps. Today, data literacy is becoming as important as language literacy. Well-designed visualizations can rescue us from a sea of data, helping us to make sense of information, connect ideas, and make better decisions in real time. In Atlas of Knowledge, leading visualization expert Katy Börner makes the case for a systems science approach to science and technology studies and explains different types and levels of analysis. Drawing on fifteen years of teaching and tool development, she introduces a theoretical framework meant to guide readers through user and task analysis; data preparation, analysis, and visualization; visualization deployment; and the interpretation of science maps. To exemplify the framework, the Atlas features striking and enlightening new maps from the popular ▯Places & Spaces: Mapping Science▯ exhibit that range from ▯Key Events in the Development of the Video Tape Recorder▯ to ▯Mobile Landscapes: Location Data from Cell Phones for Urban Analysis▯ to ▯Literary Empires: Mapping Temporal and Spatial Settings of Victorian Poetry▯ to ▯Seeing Standards: A Visualization of the Metadata Universe.▯ She also discusses the possible effect of science maps on the practice of science.

South Asia has developed from a group of newly independent post-Colonial states of at most secondary importance to the wider world to its current position as a region of central strategic importance to both global economic development and world peace and stability. This Atlas highlights the global significance of South Asia in relation to economic, geopolitical and strategic interests. It provides a coherent descriptive and analytical account of the key elements of the complex societies that make up the region and its component countries. Illustrated with more than 100 original maps and offering concise entries on key issues, the book is structured thematically in these sections: Global Context Geographical Environments Historical Evolution of South Asia Key Issues in modern South Asia Economy and Security Designed for use in teaching undergraduate and graduate classes and seminars in geography, history, economics, anthropology, international relations, political science and the environment as well as regional courses on the South Asia, this book is also a comprehensive reference source for libraries and decision makers focusing on South Asia.

The American economy faces two deep problems: expanding innovation and raising the rate of quality job creation. Both have roots in a neglected problem: the resistance of Legacy economic sectors to innovation. While the U.S. has focused its policies on breakthrough innovations to create new economic frontiers like information technology and biotechnology, most of its economy is locked into Legacy sectors defended by technological/ economic/ political/ social paradigms that block competition from disruptive innovations that could challenge their models. Americans like to build technology "covered wagons" and take them "out west" to open new innovation frontiers; we don't head our wagons "back east" to bring innovation to our Legacy sectors. By failing to do so, the economy misses a major opportunity for innovation, which is the bedrock of U.S. competitiveness and its standard of living. Technological Innovation in Legacy Sectors uses a new, unifying conceptual framework to identify the shared features underlying structural obstacles to innovation in major Legacy sectors: energy, air and auto transport, the electric power grid, buildings, manufacturing, agriculture, health care delivery and higher education, and develops approaches to understand and transform them. It finds both strengths and obstacles to innovation in the national innovation environments - a new concept that combines the innovation system and the broader innovation context - for a group of Asian and European economies. Manufacturing is a major Legacy sector that presents a particular challenge because it is a critical stage in the innovation process. By increasingly offshoring production, the U.S. is losing important parts of its innovation capacity. "Innovate here, produce here," where the U.S. took all the gains of its strong innovation system at every stage, is being replaced by "innovate here, produce there," which threatens to lead to "produce there, innovate there." To bring innovation to Legacy sectors, authors William Bonvillian and Charles Weiss recommend that policymakers focus on all stages of innovation from research through implementation. They should fill institutional gaps in the innovation system and take measures to address structural obstacles to needed disruptive innovations. In the specific case of advanced manufacturing, the production ecosystem can be recreated to reverse "jobless innovation" and add manufacturing-led innovation to the U.S.'s still-strong, research-oriented innovation system.

Oswaal Karnataka PUE Solved Papers II PUC Physics Book Chapterwise & Topicwise (For 2023 Exam)
Human Development Report 2014
The Bombay University Calendar
The Chemical News and Journal of Physical Science
Karnataka PUE Solved Papers II PUC English, Physics, Chemistry & Mathematics (Set of 4 Books) (For 2023 Exam)

Adaptation to Climate Change: ASEAN and Comparative Experiences presents a dynamic and comprehensive collection of works from legal scholars around the world that delves into a relatively new frontier on legal aspects of climate change adaptation with focus on the ASEAN region, both at the regional level as well as at the national level in some ASEAN countries — such as Malaysia, Philippines, and Thailand. Other countries not within ASEAN are also represented, such as Bangladesh, People's Republic of China, Sri Lanka, and the Republic of Taiwan. In doing so, it surveys one of the most important issues confronting developing countries today, and the challenges to building resilient societies. It is an essential source of reference for policy-makers, administrators, the private sector officials, scientists, academic scholars, climatologists, NGOs, and CSOs in ASEAN and the world. Contents:Foreword by Tommy Koh, Ambassado-at-LargePreface and AcknowledgmentsAbout the AuthorsKeynote Address by Raman Letchumanan, formerly Head of the Environment Division, ASEAN SecretariatTheme I: Coastal Warming and Sea Level Rise:Asia-Pacific Islander Responses to Climate Change (Ilan Kelman)Managing Southeast Asian Ecosystems to Reduce Coastal Population Vulnerability Under Sea Level Rise (Daniel A Friess)Theme II: Legal Frameworks/Policies/Governance for Climate Change:Adaptive Water Governance: Lessons Learned from Implementing an Ecosystem-Approach in Mesoamerica (Alejandro Iza, Alexandra Müller, and Valentina Nozza)Legal and Policy Framework for Ecosystem-Based Adaptation to Climate Change in Malaysia: A Reform Oriented Study (Abdul Haseeb Ansari)Policy and Legal Responses to Climate Change Adaptation in China: New Developments, New Challenges (Wang Xi and Gao Qi)Theme III: Key Future Impacts and Vulnerabilities:The Laws, Policies, and Institutions Relating to Climate Change in Thailand: Balancing between "Mitigation" and "Adaptation" (Kanongnij Sribuaiam)The Warsaw International Mechanism: Exploring the Structures and Functions to Address Loss and Damage Associated with Climate Change Impacts (M Hafijul Islam Khan) Geoengineering: An ASEAN Position (Jolene Lin)Theme IV: Economic Interconnections:Assessing Green Jobs in Taiwan: A Tri-Pillar Approach (Fan Chien-Te and Hsu Yun-Hsiang)Sustaining Growth, Climate Change, and Meeting Environmental Obligations: What can ASEAN Governments Do? (Euston Quah and Tan Tsiat Siong)Theme V: Some Case Studies:Options for Adaption to Climate Change (Richard L Ottinger, Wang Pianpian, and Kristen M Motel)Dealing with Climate Migrants: A New Challenge for Developing Nations (Asanga Gunawansa)Climate Change, Migration, and International Law in Southeast Asia (Benoît Mayer)Achieving Human Rights in an Era of Climate Disruption: The Philippines (Amado S Tolentino, Jr.)Theme VI: Adaptation — Disaster Management, Risk Reduction and Humanitarian Assistance:The Legal Regime of Climate Change Adaptation and Disaster Management in Taiwan: Focus on the Major Amendment Following the Devastating Typhoon Morakot of 2009 (Gao Ming-Zhi Anton)Legal Options for Mainstreaming Climate Change Disaster Risk Reduction in Governance for Kenya (Robert Kibugi)Land Tenure Systems as a Challenge for Disaster Recovery: Adapting to Extreme Weather Events after Typhoon Haiyan (Daniel Fitzpatrick and Caroline Compton)The Role of ASEAN in Disaster Management: Legal Frameworks and Case Study of Typhoon Haiyan/Yolanda (Koh Kheng-Lian and Rose-Liza Eisma-Osorio) Readership: Policy-makers, administrators, scientists, academic scholars, climatologists, NGOs and CSOs, and students in the fields of law and environmental science. Key Features:A dynamic collection of works from legal scholars around the world building knowledge in climate change adaptation, one of the important issues confronting people of todayPromotes a "whole of the world" approach to finding solutions to climate change and the challenges to building resilient societiesThis publication is focused on taking stock of legal and policy frameworks on climate change adaptation in ASEAN and other countriesKeywords:Climate Change Adaptation;Legal Frameworks;ASEAN;Nature-based Solutions;Warsaw International Loss and Damage;Mitigation

• The book 35 JEE Main Physics, Chemistry & Mathematics Online & Offline Topic-wise Solved Papers provides the last 16 years ONLINE & OFFLINE 2002-17 papers. • The book contains a total of 35 papers - 17 papers of AIEEE/ JEE Main from the year 2002 - 2017 held OFFLINE including the AIEEE 2011 RESCHEDULED paper and 18 JEE Main papers held ONLINE from 2012-17. • The books are distributed into around 28,31 & 27 topics in Physics, Chemistry & Mathematics respectively exactly following the chapter sequence of the NCERT books of class 11 and 12. • The questions in each topic are immediately followed by their detailed solutions. The book constitutes around 4100 most important MCQs.

The 21st Century Truck Partnership (21CTP) works to reduce fuel consumption and emissions, increase heavy-duty vehicle safety, and support research, development, and demonstration to initiate commercially viable products and systems. This report is the third in a series of three by the National Academies of Sciences, Engineering, and Medicine that have reviewed the research and development initiatives carried out by the 21CTP. Review of the 21st Century Truck Partnership, Third Report builds on the Phase 1 and 2 reviews and reports, and also comments on changes and progress since the Phase 2 report was issued in 2012.

A comprehensive guide to everything scientists need to know about data management, this book is essential for researchers who need to learn how to organize, document and take care of their own data. Researchers in all disciplines are faced with the challenge of managing the growing amounts of digital data that are the foundation of their research. Kristin Briney offers practical advice and clearly explains policies and principles, in an accessible and in-depth text that will allow researchers to understand and achieve the goal of better research data management. Data Management for Researchers includes sections on: * The data problem – an introduction to the growing importance and challenges of using digital data in research. Covers both the inherent problems with managing digital information, as well as how the research landscape is changing to give more value to research datasets and code. * The data lifecycle – a framework for data's place within the research process and how data's role is changing. Greater emphasis on data sharing and data reuse will not only change the way we conduct research but also how we manage research data. * Planning for data management – covers the many aspects of data management and how to put them together in a data management plan. This section also includes sample data management plans. * Documenting your data – an often overlooked part of the data management process, but one that is critical to good management; data without documentation are frequently unusable. * Organizing your data – explains how to keep your data in order using organizational systems and file naming conventions. This section also covers using a database to organize and analyze content. * Improving data analysis – covers managing information through the analysis process. This section starts by covering the management of raw and analyzed data and then describes ways to make analysis easier, such as spreadsheet best practices. It also examines practices for research code, including version control systems. * Managing secure and private data – many researchers are dealing with data that require extra security. This section outlines what data falls into this category and some of the policies that apply, before addressing the best practices for keeping data secure. * Short-term storage – deals with the practical matters of storage and backup and covers the many options available. This section also goes through the best practices to insure that data are not lost. * Preserving and archiving your data – digital data can have a long life if properly cared for. This section covers managing data in the long term including choosing good file formats and media, as well as determining who will manage the data after the end of the project. * Sharing/publishing your data – addresses how to make data sharing across research groups easier, as well as how and why to publicly share data. This section covers intellectual property and licenses for datasets, before ending with the altmetrics that measure the impact of publicly shared data. * Reusing data – as more data are shared, it becomes possible to use outside data in your research. This chapter discusses strategies for finding datasets and lays out how to cite data once you have found it. This book is designed for active scientific researchers but it is useful for anyone who wants to get more from their data: academics, educators, professionals or anyone who teaches data management, sharing and preservation. "An excellent practical treatise on the art and practice of data management, this book is essential to any researcher, regardless of subject or discipline." —Robert Buntrock, Chemical Information Bulletin

Anyone Can Map
Social Cost-Benefit Analysis of Research Infrastructures
Third Report
The Routledge Atlas of South Asian Affairs
Fragile World
Full STEAM Ahead

The field of computer science (CS) is currently experiencing a surge in undergraduate degree production and course enrollments, which is straining program resources at many institutions and causing concern among faculty and administrators about how best to respond to the rapidly growing demand. There is also significant interest about what this growth will mean for the future of CS programs, the role of computer science in academic institutions, the field as a whole, and U.S. society more broadly. Assessing and Responding to the Growth of Computer Science Undergraduate Enrollments seeks to provide a better understanding of the current trends in computing enrollments in the context of past trends. It examines drivers of the current enrollment surge, relationships between the surge and current and potential gains in diversity in the field, and the potential impacts of responses to the increased demand for computing in higher education, and it considers the likely effects of those responses on students, faculty, and institutions. This report provides recommendations for what institutions of higher education, government agencies, and the private sector can do to respond to the surge and plan for a strong and sustainable future for the field of CS in general, the health of the institutions of higher education, and the prosperity of the nation.

Surveys key advances in commercial satellite communications and what might be the implications and/or opportunities for end-users and service providers in utilizing the latest fast-evolving innovations in this field This book explores the evolving technical options and opportunities of satellite networks. Designed to be a self-contained reference, the book includes background technical material in an introductory chapter that will serve as a primer to satellite communications. The text discusses advances in modulation techniques, such as DBV-S2 extensions (DVS-S2X): spotbeam-based geosynchronous and medium earth orbit High Throughput Satellite (HTS) technologies and Internet applications: enhanced mobility services with aeronautical and maritime applications: Machine to Machine (M2M) satellite applications: emerging ultra HD technologies: and electric propulsion. The author surveys the latest innovations and service strategies and the resulting implications, which involves: Discussing advances in modulation techniques and HTS spotbeam technologies Surveying emerging high speed aeronautical mobility services and maritime and other terrestrial mobility services Assessing M2M (machine-to-machine) applications, emerging Ultra HD video technologies and new space technology Satellite communication is an integral part of the larger fields of commercial, television/media, government, and military communications, because of its multicastbroadcast capabilities, mobility, reliability, and global reach. High Throughput Satellites) are expected to revolutionize the field during this decade, providing very high speed, yet cost-effective, Internet access and connectivity anywhere in the world, in rural areas, in the air, and at sea. M2M connectivity, enabled by satellite communications, connects trucks on transcontinental trips, aircraft in real-time-telemetry aggregation, and mercantile ships. A comprehensive analysis of the new advances in satellite communications, Innovations in Satellite Communications Technology is a reference for telecommunications and satellite providers and end-users, technology investors, logistic professionals, and more.

For most Americans, staying "mentally sharp" as they age is a very high priority. Declines in memory and decision-making abilities may trigger fears of Alzheimer's disease or other neurodegenerative diseases. However, cognitive aging is a natural process that can have both positive and negative effects on cognitive function in older adults - effects that vary widely among individuals. At this point in time, when the older population is rapidly growing in the United States and across the globe, it is important to examine what is known about cognitive aging and to identify and promote actions that individuals, organizations, communities, and society can take to help older adults maintain and improve their cognitive health. Cognitive Aging assesses the public health dimensions of cognitive aging with an emphasis on definitions and terminology, epidemiology and surveillance, prevention and intervention, education of health professionals, and public awareness and education. This report makes specific recommendations for individuals to reduce the risks of cognitive decline with aging. Aging is inevitable, but there are actions that can be taken by individuals, families, communities, and society that may help to prevent or ameliorate the impact of aging on the brain, understand more about its impact, and help older adults live more fully and independent lives. Cognitive aging is not just an individual or a family or a health care system challenge. It is an issue that affects the fabric of society and requires actions by many and varied stakeholders. Cognitive Aging offers clear steps that individuals, families, communities, health care providers and systems, financial organizations, community groups, public health agencies, and others can take to promote cognitive health and to help older adults live fuller and more independent lives. Ultimately, this report calls for a societal commitment to cognitive aging as a public health issue that requires prompt action across many sectors.

The 2009 United Nations climate conference in Copenhagen is often represented as a watershed in global climate politics, when the diplomatic efforts to negotiate a successor agreement to the Kyoto Protocol failed and was replaced by a fragmented and decentralized climate governance order. In the post-Copenhagen landscape the top-down universal approach to climate governance has gradually given way to a more complex, hybrid and dispersed political landscape involving multiple actors, arenas and sites. The Handbook contains contributions from more than 50 internationally leading scholars and explores the latest trends and theoretical developments in the climate governance scholarship.

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