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# 2017 Emerging Georgia Tech

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The Entrepreneurial University and Urban Change  
Regulation of the Connected World

The Role of Manufacturing USA: Proceedings of a  
Workshop

Augmented Reality

Securing Advanced Manufacturing in the United  
States

Explaining and Predicting Our Digital Society, Vol.  
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Higher Education at the Crossroads of Disruption

**Entrepreneurial  
University  
and Urban  
Change**

Springer  
An explanation of the digital practices of the black Internet From BlackPlanet to #BlackGirlMagic, Distributed Blackness places blackness at the very center of internet culture. André Brock Jr. claims issues of race and ethnicity as inextricable from and formative of contemporary digital culture in the United

States. Distributed Blackness analyzes a host of platforms and practices (from Black Twitter to Instagram, YouTube, and app development) to trace how digital media have reconfigured the meanings and performances of African American identity. Brock moves beyond widely circulated deficit models of respectability, bringing together discourse

analysis with a close reading of technological interfaces to develop nuanced arguments about how “blackness” gets worked out in various technological domains. As Brock demonstrates, there’s nothing niche or subcultural about expressions of blackness on social media: internet use and practice now set the terms for what constitutes normative participation. Drawing on critical race

theory, linguistics, rhetoric, information studies, and science and technology studies, Brock tabs between black-dominated technologies, websites, and social media to build a set of black beliefs about technology. In explaining black relationships with and alongside technology, Brock centers the unique joy and sense of community in being black online now. Regulation of the Connected

World  
Springer  
Explores the current context, role, and challenges of post-secondary education and presents options for promising pathways forward. The post-secondary educational system has undergone dramatic changes and experienced immense stress in the past two decades. Once regarded as the logical next step toward career opportunities

and financial security, higher education is a subject of growing uncertainty for millions of people across the United States. It is more common than ever to question the return on investment, skyrocketing cost, and student debt burden of going to college. Prospective students, and many employers, increasingly view attending institutions of higher learning as

<p>inadequate preparation for entering the 21st century workforce. High-profile scandals—financial impropriety, sexual abuse, restrictions of free speech, among others—have further eroded public trust. In response to these and other challenges, leading voices are demanding strengthened accountability and measurable change. Higher Education's Road to</p>	<p>Relevance illustrates why change is needed in post-secondary education and offers practical solutions to pressing concerns. The authors, internationally recognized experts in college-level teaching and learning innovation, draw heavily from contemporary research to provide an integrative approach for post-secondary faculty, staff, and administrators</p>	<p>of all levels. This timely book helps readers identify the need for leadership in developing new networks and ecosystems of learning and workforce development. This valuable book will help readers: Understand the forces driving change in higher education Develop multiple pathways to create and credential self-directed learners Promote access to</p>
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flexible, cost-effective, and relevant learning Adapt structures and pedagogies to address issues and overcome challenges Use an inclusive approach that extends to employers, K-12 educators, post-secondary educators, and policy-makers, among others Higher Education's Road to Relevance is a much-needed resource for college and university administrators , academic

researchers, instructors and other faculty, and staff who support and interact with students.

**The Role of Manufacturing USA: Proceedings of a Workshop**

Springer Science & Business Media Based on quantitative comparisons of colleges since the 1970s, Charles Clotfelter reveals that despite the civil rights revolution, billions spent on financial

aid, and the commitment of colleges to greater equality, stratification in higher education has grown starker. He explains why undergraduate education--unequal in 1970--is even more so today. Augmented Reality MIT Press The 60-Year Curriculum explores models and strategies for lifelong learning in an era of profound economic disruption and reinvention.

Over the next half-century, globalization, regional threats to sustainability, climate change, and technologies such as artificial intelligence and data mining will transform our education and workforce sectors. In turn, higher education must shift to offer every student life-wide opportunities for the continuous upskilling they will need to achieve decades of worthwhile

employability. This cutting-edge book describes the evolution of new models—covering computer science, inclusive design, critical thinking, civics, and more—by which universities can increase learners' trajectories across multiple careers from mid-adolescence to retirement. Stakeholders in workforce development, curriculum and instructional design,

lifelong learning, and higher and continuing education will find a unique synthesis offering valuable insights and actionable next steps. **Securing Advanced Manufacturing in the United States** Springer Nature "This book draws on case studies that explore the role that technological innovation, guided by entrepreneurialism in higher education, can have on

<p>economic development and urban change. This framework of sociological analysis, with illustrative cases of successes and failures, provides insights into the transformational power of higher education in the built environment. The book's target audience includes university administrators, board members and regents, local and state government officials, and</p>	<p>entrepreneurs "--  <u>Explaining and Predicting Our Digital Society, Vol. 1</u>          Stylus Publishing, LLC          Ammonia holds great promise as a carbon-neutral liquid fuel for storing intermittent renewable energy sources and power generation due to its high energy density and hydrogen content.          Photo-Electrochemical Ammonia Synthesis: Nanocatalyst Discovery,</p>	<p>Reactor Design, and Advanced Spectroscopy covers the synthesis of novel hybrid plasmonic nanomaterials and their application in photo-electrochemical systems to convert low energy molecules to high value-added molecules and looks specifically at photo-electrochemical nitrogen reduction reaction (NRR) for ammonia synthesis as an attractive alternative to the long-</p>
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lasting thermochemical process. Provides an integrated scientific framework, combining materials chemistry, photo-electrochemistry, and spectroscopy to overcome the challenges associated with renewable energy storage and transport. Reviews materials chemistry for the synthesis of a range of heterogeneous (photo) electrocatalysts including plasmonic and	hybrid plasmonic-semiconductor nanostructures for selective and efficient conversion of $N_2$ to $NH_3$ . Covers novel reactor design to study the redox processes in the photo-electrochemical energy conversion system and to benchmark nanocatalysts' selectivity and activity toward NRR. Discusses the use of advanced spectroscopic techniques to probe the reaction mechanism for ammonia	synthesis. Offers techno-economic analysis and presents performance targets for the scale-up and commercialization of electrochemical ammonia synthesis. This book is of value to researchers, advanced students, and industry professionals working in sustainable energy storage and conversion across the disciplines of Chemical Engineering, Mechanical Engineering, Materials
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Science and Engineering, Environmental Engineering, and related areas.

*A Shifting Paradigm*

University of Georgia Press  
The Manufacturing USA initiative seeks to reinforce U.S.-based advanced manufacturing through partnerships among industry, academia, and government. Started in 2012 and established with bipartisan support by the Revitalize American

Manufacturing and Innovation Act of 2014, the initiative envisages a nationwide network of research centers for manufacturing innovation. As of May 2017, 14 manufacturing innovation institutes had been established to facilitate the movement of early-stage research into proven capabilities ready for adoption by U.S. manufacturers . To better understand the role and

experiences of the Manufacturing USA institutes to date, a committee of the Innovation Policy Forum of the National Academies of Sciences, Engineering, and Medicine convened a workshop on May 23, 2017 drawing together institute directors and manufacturing policy experts along with leaders from industry, academia, and government. Participants addressed the role of the manufacturing institutes in

increasing advanced manufacturing in the United States, examined selected foreign programs designed to support advanced manufacturing , and reviewed recent assessments of existing institutes. This publication summarizes the presentations and discussions from the workshop.

**Information Systems Theory**  
Cambridge University Press

This book focuses on developing an understanding of the complex interplay of forces acting on individual universities and higher education systems to enable leaders and practitioners to take purposeful and strategic action. It explores the challenging landscape of higher education and the pressures that are reshaping the university as a societal institution, describing the

complex interplay of technological, sociological, political and economic forces driving change. The issues analysed are global in scope, reflecting the diversity of contexts, but also the common nature of the challenges facing institutions individually and collectively. The analysis draws on the lessons learnt and evidence from over fifty organisational case studies undertaken by

the author over the past decade, exploring organisational change in higher education institutions in New Zealand, Australia, the United States and the United Kingdom, and on his engagement as president of the ACODE organisation with colleagues responsible for learning technological change in Australasia. The book helps institutions respond to technological change

purposefully, in ways that build upon a clear understanding of the complex nature of the existing institution, its students and the organisational context. *The University of the 21st Century* NYU Press "In the first decade of this century, for the first time in history, the majority of the planet's population resided in cities. We are an urban planet. If ongoing changes in

climate are to have an impact on the human species, most of these impacts will play out in cities. This fact was brought into full relief in the summer of 2003, when more than 70,000 residents of Europe perished in one of the most prolonged and intense heat waves in human history. The final death toll would exceed that associated with any Western

European or American conflict since World War II, or any other natural disaster to have ever struck a region of the developed world, and the vast majority of these deaths occurred in cities. Studies in the aftermath of the heat wave would show that not only had global warming increased the likelihood of such an extreme event, but that the intensity of the heat had

been greatly enhanced by the physical design of the cities themselves, exposing residents of cities to a much greater risk of illness or death than others. This book is the first to explore the dramatic amplification of global warming underway in cities and the range of actions that can be taken to slow the pace of warming. A core thesis of the book is that the principal strategy

advocated by the global science community to mitigate climate change - the reduction of greenhouse gases - will not prove sufficient to measurably slow the rapid pace of warming in cities"--  
*From Risk Modelling to Threat Counteraction*  
 Emerald Group Publishing  
 A foundational text offering a unified design vocabulary and a common methodology for

maximizing the expressive power of digital artifacts. Digital artifacts from iPads to databases pervade our lives, and the design decisions that shape them affect how we think, act, communicate, and understand the world. But the pace of change has been so rapid that technical innovation is outstripping design. Interactors are often mystified and frustrated by their enticing

but confusing new devices; meanwhile, product design teams struggle to articulate shared and enduring design goals. With *Inventing the Medium*, Janet Murray provides a unified vocabulary and a common methodology for the design of digital objects and environments. It will be an essential guide for both students and practitioners in this evolving field. Murray explains that

innovative interaction designers should think of all objects made with bits—whether games or Web pages, robots or the latest killer apps—as belonging to a single new medium: the digital medium. Designers can speed the process of useful and lasting innovation by focusing on the collective cultural task of inventing this new medium. Exploring strategies for maximizing the expressive

power of digital artifacts, Murray identifies and examines four representational affordances of digital environments that provide the core palette for designers across applications: computational procedures, user participation, navigable space, and encyclopedic capacity. Each chapter includes a set of Design Explorations—creative exercises for students and thought

experiments for practitioners—that allow readers to apply the ideas in the chapter to particular design problems. Inventing the Medium also provides more than 200 illustrations of specific design strategies drawn from multiple genres and platforms and a glossary of design concepts. **Anchoring Innovation Districts** CRC Press Online Education is a comprehensiv

e exploration of blended and fully online teaching platforms, addressing history, theory, research, planning, and practice. As colleges, universities, and schools around the world adopt large-scale technologies and traditional class models shift into seamless, digitally interactive environments, critical insights are needed into the implications for

administration and pedagogy. Written by a major contributor to the field, this book contextualizes online education in the past and present before analyzing its fundamental changes to instruction, program integration, social interaction, content construction, networked media, policy, and more. A provocative concluding chapter speculates on the future of education as

the sector becomes increasingly dependent on learning technologies. The Tragedy of American Science Walter de Gruyter This is the 2nd edition of Technological Innovation. Profiting from technological innovation requires scientific and engineering expertise, and an understanding of how business and legal factors facilitate commercialization. This volume presents a

multidisciplinary view of issues in technology commercialization and entrepreneurship. *Using Technology to Catalyze Change in University Learning and Teaching* National Academies Press The instant New York Times bestseller! A Wall Street Journal Best Science Book of the Year! A Popular Science Best Science Book of the Year! From a top scientist and



the creator of the hugely popular web comic Saturday Morning Breakfast Cereal, a hilariously illustrated investigation into future technologies -- from how to fling a ship into deep space on the cheap to 3D organ printing. What will the world of tomorrow be like? How does progress happen? And why do we not have a lunar colony already? What is the hold-up? In this smart and funny

book, celebrated cartoonist Zach Weinersmith and noted researcher Dr. Kelly Weinersmith give us a snapshot of what's coming next -- from robot swarms to nuclear fusion powered-toasters. By weaving their own research, interviews with the scientists who are making these advances happen, and Zach's trademark comics, the Weinersmiths investigate

why these technologies are needed, how they would work, and what is standing in their way. New technologies are almost never the work of isolated geniuses with a neat idea. A given future technology may need any number of intermediate technologies to develop first, and many of these critical advances may appear to be irrelevant when they are first discovered.

The journey to progress is full of strange detours and blind alleys that tell us so much about the human mind and the march of civilization. To this end, Soonish investigates ten different emerging fields, from programmable matter to augmented reality, from space elevators to robotic construction, to show us the amazing world we will have, you know, soonish. Soonish is the perfect gift for

science lovers for the holidays! Innovative Perspectives Across Art, Industry, and Academia Springer Science & Business Media Significant progress has been made in advanced packaging in recent years. Several new packaging techniques have been developed and new packaging materials have been introduced. This book provides a comprehensive overview of

the recent developments in this industry, particularly in the areas of microelectronics, optoelectronics, digital health, and bio-medical applications. The book discusses established techniques, as well as emerging technologies, in order to provide readers with the most up-to-date developments in advanced packaging. **Cultural Tourism in the Wake of Web**

**Innovation:  
Emerging  
Research  
and  
Opportunities**

Springer Nature  
A primer on legal issues relating to cyberspace, this textbook introduces business, policy and ethical considerations raised by our use of information technology. With a focus on the most significant issues impacting internet users and businesses in the United States of America, the

book provides coverage of key topics such as social media, online privacy, artificial intelligence and cybercrime as well as emerging themes such as doxing, ransomware, revenge porn, data-mining, e-sports and fake news. The authors, experienced in journalism, technology and legal practice, provide readers with expert insights into the nuts and bolts of cyber law. Cyber

Law and Ethics: Regulation of the Connected World provides a practical presentation of legal principles, and is essential reading for non-specialist students dealing with the intersection of the internet and the law.

**Industrial Transition in the Post-Pandemic Era** IGI Global Cultural tourism, domestic and international, is comprised of travel that takes people out of their

usual environments and focuses on activities that are related to the cultural aspects of an area. Rapid progress in technology, especially the advancement of mobile applications, has changed various aspects of travel, especially in areas such as transportation . Cultural Tourism in the Wake of Web Innovation: Emerging Research and Opportunities is an essential scholarly book that examines

revolutionary changes taking place in the field of cultural tourism that are a result of the applications of web-based and other information technologies including Web 2.0 innovations, locational technologies, and digital imaging. It features a wide range of topics such as economic development, mobile applications, and green development, and is intended for use by hotel

management, travel agents, event organizers and planners, airline managers, academicians, researchers, students, and professionals in the tourism and hospitality industry. Nanotechnology for Chemical and Biological Defense Parlor Press LLC Multinational economic actors, particularly corporations, play a defining role in the response to the climate change or warming debate and

the emerging scientific consensus. This book describes, explains, and predicts how multinational firms will rise to the multiple challenges posed by global climate issues and the organizational and behavioral various responses of the international corporate community. It focuses on three core research and learning objectives. Firstly, it develops the core idea that multinational

enterprises cannot implement meaningful sustainability initiatives without an appropriate governance system and corporate culture. Building on this notion, it addresses the question of environmental sustainability across select industry sectors, such as oil and banking. Finally, drawing on a diverse range of contributing experts, it presents select best practices such as the

opportunities arising from smart technologies implementation to achieve symbiotic industrial relationships, directed particularly towards the ecological environment of these firms' transborder operations and global reach. Photo-Electrochemical Ammonia Synthesis Emerald Group Publishing An updated edition of the classic book on digital storytelling, with a new

introduction and expansive chapter commentaries . I want to say to all the hacker-bards from every field—gamers, researchers, journalists, artists, programmers, scriptwriters, creators of authoring systems... please know that I wrote this book for you.”  
—Hamlet on the Holodeck, from the author's introduction to the updated edition Janet Murray's Hamlet on the Holodeck was instantly

influential and controversial when it was first published in 1997. Ahead of its time, it accurately predicted the rise of new genres of storytelling from the convergence of traditional media forms and computing. Taking the long view of artistic innovation over decades and even centuries, it remains forward-looking in its description of the development of new artistic

traditions of practice, the growth of participatory audiences, and the realization of still-emerging technologies as consumer products. This updated edition of a book the New Yorker calls a “cult classic” offers a new introduction by Murray and chapter-by-chapter commentary relating Murray's predictions and enduring design insights to the most significant storytelling innovations of

the past twenty years, from long-form television to artificial intelligence to virtual reality. Murray identifies the powerful new set of expressive affordances that computing offers for the ancient human activity of storytelling and considers what would be necessary for interactive narrative to become a mature and compelling art form. Her argument met with some

resistance from print loyalists and postmodern hypertext enthusiasts, and it provoked a foundational debate in the emerging field of game studies on the relationship between narrative and videogames. But since Hamlet on the Holodeck's publication, a practice that was largely speculative has been validated by academia, artistic practice, and the marketplace. In this

substantially updated edition, Murray provides fresh examples of expressive digital storytelling and identifies new directions for narrative innovation.

**Higher Education and Technology**  
 JHU Press  
 An examination of environmental satellite data sharing policies, offering a model of data-sharing policy development, case and practical recommendati

ons for increasing global data sharing. Key to understanding and addressing climate change is continuous and precise monitoring of environmental conditions. Satellites play an important role in collecting climate data, offering comprehensive global coverage that can't be matched by in situ observation. And yet, as Mariel Borowitz shows in this

book, much satellite data is not freely available but restricted; this remains true despite the data-sharing advocacy of international organizations and a global open data movement. Borowitz examines policies governing the sharing of environmental satellite data, offering a model of data-sharing policy development and applying it in case studies from the United States, Europe, and Japan—countri

es responsible for nearly half of the unclassified government Earth observation satellites. Borowitz develops a model that centers on the government agency as the primary actor while taking into account the roles of such outside actors as other government officials and non-governmental actors, as well as the economic, security, and normative attributes of the data itself.



The case studies include the U.S. National Aeronautics and Space Administration (NASA) and the U.S. National Oceanographic and Atmospheric Association (NOAA), and the United States Geological Survey (USGS); the European Space Agency (ESA) and the European Organization for the Exploitation of Meteorological Satellites (EUMETSAT); and the Japanese Aerospace Exploration Agency (JAXA) and the Japanese Meteorological Agency (JMA). Finally, she considers the policy implications of her findings for the future and provides recommendations on how to increase global sharing of satellite data.

*Technological Innovation*  
Routledge  
New and unpredictable technologies are emerging at an unprecedented pace around the world. Communication of those new discoveries is occurring faster than ever, meaning that the unique ownership of a piece of new technology is no longer a sufficient position, if not impossible. In today's world, recognition of the potential applications of a technology and a sense of purpose in exploiting it are far more important than simply having access to it. Technological surprise has and will continue to take many

forms. A plethora of new technologies are under development for peaceful means but may have unintended security consequences and will certainly require innovative countermeasures. A relevant example is the tremendous development in biotechnology that has occurred since the advent of recombinant DNA and tissue culture-based processes in

the 1970s. If US government agencies and the defense and academic communities had more clearly recognized the potential for biotechnology to affect fundamental security and warfighting doctrines 20 years ago, the situation today could be very different. Defense against chemical and biological weapons – from both states and nonstate actors – currently

presents a threat that is difficult to predict and for which traditional solutions are increasingly less effective. Nanotechnology has emerged as a well-funded discipline that, like biotechnology, carries the potential for groundbreaking applications and the potential for unpredictable harm. The world is likely 20 years away from the full impact of the nanotechnology on defensive capabilities.

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