

March 2014 Life Sciences Paper Caps

As an introduction to programming for the Digital Humanities (DH), this book presents six key assignments oriented on DH topics. The topics include Computing Change Over Time (calculating burials at a historic cemetery), Visualizing Change Over Time (visualizing the burials at the historic cemetery), Textual Analysis (finding word frequencies and "stop words" in public domain texts), XML Transformation (transforming a simplified version of XML into HTML styled with CSS), Stylometry (comparing the measured features of graphic images), and Social Network Analysis (analyzing extended relationships in historic circles). The book focuses on the practical application of these assignments in the classroom, providing a range of variations for each assignment, which can be selected on the basis of students' specific programming background and skills; "atomic" assignments, which can be used to give students the experience they need to successfully complete the main assignments; and some common pitfalls and gotchas to manage in the classroom. The book's chief goals are to introduce novice computer science (CS) students to programming for DH, and to offer them valuable hands-on experience with core programming concepts.

This outstanding and original work goes to the heart of South Africa's political problems - doubts as to the sustainability of the post-apartheid settlement, beset with divisions in the ruling ANC, factionalism, corruption and the widening of fault-lines in state and society. The 'leadership issue' has become key and this will be the first specific examination of leadership in the light of Mandela's legacy and its effect on his successor as potential and actual leaders - all in 'the shadow of Mandela' as the architect of the transition from apartheid to democracy, and with overarching moral authority and international reputation.

Alexander Johnston shows how his successors are judged against Mandela's achievements, including the potentially impressive 'lost' leaders and concentrating on his immediate successors, Thabo Mbeki and Jacob Zuma. The book concludes with an in-depth assessment of new president Cyril Ramaphosa's potential to be a leader for a 'new dawn'. This is an objective and critical work by a close observer who acknowledges the achievement of South African leadership but is acutely aware of the doubts as to the sustainability of South Africa's hard won democratic settlement. An essential read for all readers interested in leadership and in the traumatic history and future of Africa's leading state, as the continent rises to global importance.

The Handbook of Healthcare Management is a comprehensive examination of key management practices for global healthcare organizations, arguing that insight into and implementation of these practices is essential for success and sustainability.

The endoplasmic reticulum (ER) is a manufacturing unit in eukaryotic cells required for the synthesis of proteins, lipids, metabolites and hormones. Besides supporting cellular signalling networks by its anabolic function, the ER on its own or in communication with other organelles directly initiates signalling processes of physiological significance. Based on the intimate and immediate involvement in stress signalling the ER is considered as sensory organelle on which cells strongly rely to effectively translate environmental cues into adaptive stress responses. The transcellular distribution of the ER providing comprehensive cell-to-cell connections in multicellular organisms probably allows a concerted action of cell alliances and tissue areas towards environmental constraints. At the cellular level, stress adaptation correlates with the capability of the ER machinery to synthesise proteins participating in stress signalling as well as in the activation of ER membrane localised proteins to start cell-protective signalling processes. Importantly, depending on the stress insult, the ER either supports protective strategies or initiates cell death programmes. Recent, genetic, molecular and cell biological studies have drawn an initial picture of underlying signalling events activated by ER membrane localised proteins. In this Research Topic, we provided a platform for articles describing research on ER morphology and metabolism with a focus on stress translation. The Research Topic is sub-divided into the following sections: 1. ER in stress signalling and adaptation 2. ER structure and biosynthetic functions 3. Regulation of protein processing 4.

Regulation of programmed cell death

Curiosity And Passion For Science And Art

Genetic and Genome-Wide Insights into Microbes Studied for Bioenergy

Recent Advances and the Future Generation of Neuroinformatics Infrastructure

Advances in Human Aspects of Transportation: Part I

An International Perspective

Lessons for Introductory Python

This book argues that today's professoriate has become increasingly theatrical, largely as a result of neoliberal policies in higher education response to an anti-intellectual scrutiny that has become pervasive throughout the Western world. *The Theatrical Professoriate: Content, Education and Its Academic Dramas* examines how the Western professoriate increasingly finds itself enacting command performances scripting, characterization, surrogation, and spectacle—the hallmarks of theatricality—toward neoliberal ends. Roxworthy explores how nature of today's professoriate and the resultant glut of performances about academia on stage and screen have contributed to a high fascination with academia. She further documents the "theatrical turn" witnessed in American higher education, as academic institutions intervene in the diversity issues and disciplinary disparities fueled by neoliberalism. By analyzing academic dramas and their audience alongside theoretical approaches, the author reveals how contemporary academia drives the professoriate to perform in what seem like artificial ways. Ideal for practitioners and students of education, ethnic, and science studies, *The Theatrical Professoriate* deftly intervenes

Studies' still-unsettled debates over the differential impact of live versus mediated performances.

Global Health Informatics: How Information Technology Can Change Our Lives in a Globalized World discusses the critical role of information communication technologies in health practice, health systems management and research in increasingly interconnected societies. In a interconnected world the old standalone institutional information systems have proved to be inadequate for patient-centered care providers, for the early detection and response to emerging and re-emerging diseases, and to guide population-oriented public health in book reviews pertinent aspects and successful current experiences related to standards for health information systems; digital system decision making, diagnosis and therapy; professional and client education and training; health systems operation; and intergovernmental. Discusses how standalone systems can compromise health care in globalized world Provides information on how information and communication technologies (ICT) can support diagnose, treatment, and prevention of emerging and re-emerging diseases Presents case studies about information and how and why to share data can facilitate governance and strategies to improve life conditions

The main aim of this book is to contribute to the relationship between science and religion. This book aims to do constructive theological particular cultural context. The point of departure is contemporary Swedish religion and worldviews. One focus is the process of biological the worldviews of the general public in Sweden are shaped by biological science). Is there a gap between Swedes in general and the people clergy? The answer is based on sociological studies on science and religion in Sweden and the United States. Furthermore, the book covers Swedish theologians, from Nathan Soderblom to the present Archbishop Antje Jackelen, and their shifting understanding of the relation and religion. The philosophical aspects of this relation are given special consideration. What models of the relation inform the contemporary discussion? Are science and religion in conflict, separate, or in mutual creative interaction?

Transfer cells are anatomically specialized cells optimized to support high levels of nutrient transport in plants. These cells trans-differentiate cell types by developing extensive and localized wall ingrowth labyrinths to amplify plasma membrane surface area which in turn support membrane transporters. Unsurprisingly, therefore, transfer cells are found at key anatomical sites for nutrient acquisition, distribution and Transfer cells are involved in delivery of nutrients between generations and in the development of reproductive organs and also facilitate nutrients that characterize symbiotic associations. Transfer cells occur across all taxonomic groups in higher plants and also in algae and Deposition of wall ingrowth-like structures are also seen in "syncytia" and "giant cells" which function as feeding sites for cyst and root respectively, following their infection of roots. Consequently, the formation of highly localized wall ingrowth structures in diverse cell types an ancient anatomical adaptation to facilitate enhanced rates of apoplasmic transport of nutrients in plants. In some systems a role for the formation of an anti-pathogen protective barrier at these symplastic discontinuities has been inferred. Remarkably, the extent of cell wall development at a particular site can show high plasticity, suggesting that transfer cell differentiation might be a dynamic process adapted requirements of each physiological condition. Recent studies exploiting different experimental systems to investigate transfer cell biology signaling pathways inducing transfer cell development and genes/gene networks that define transfer cell identity and/or are involved in ingrowth labyrinths themselves. Further studies have defined the structure and composition of wall ingrowths in different systems, leading instances to the conclusion that this process may involve previously uncharacterized mechanisms for localized wall deposition in plants play important roles in plant development and productivity, the latter being relevant to crop yield, especially so in major agricultural species wheat, barley, soybean and maize, understanding the molecular and cellular events leading to wall ingrowth deposition holds exciting promise new strategies to improve plant performance, a key imperative in addressing global food security. This Research Topic presents a timely comprehensive treatise on transfer cell biology to help define critical questions for future research and thereby generating a deeper understanding fascinating and important cells in plant biology.

The Unexpected Lives of the World's Most Successful Insects

Toward a Sustainable Future

My Knowledge and My Memories of My Family

Enabling Technologies for Space Exploration

In The Shadow of Mandela

The updated and expanded third edition of this book focuses on the multi-disciplinary coupling between flight-vehicle hardware alternatives and enabling propulsion systems. It discusses how to match near-term and far-term aerospace vehicles to missions and provides a comprehensive overview of the subject, directly contributing to the next-generation space infrastructure, from space tourism to space exploration. This holistic treatment defines a mission portfolio addressing near-term to long-term space transportation needs covering sub-orbital, orbital and escape flight profiles. In this context, a vehicle configuration classification is introduced covering alternatives starting from the dawn of space access. A best-practice parametric sizing approach is introduced to correctly design the flight vehicle for the mission. This technique balances required mission with the available vehicle solution space and is an essential capability sought after by technology forecasters and strategic planners alike.

Hayes' Principles and Methods of Toxicology has long been established as a reliable reference to the concepts, methodologies, and assessments integral to toxicology. The new sixth edition has been revised and updated while maintaining the same high standards that have made this volume a benchmark resource in the field. With new authors and new chapters

Human Factors and Ergonomics have made a considerable contribution to the research, design, development, operation and analysis of transportation systems which includes road and rail vehicles and their complementary infrastructure, aviation and maritime transportation. This book presents recent advances in the Human Factors aspects of Transportation. These advances include accident analysis, automation of vehicles, comfort, distraction of drivers (understanding of distraction and how to avoid it), environmental concerns, in-vehicle systems design, intelligent transport systems, methodological developments, new systems and technology, observational and case studies, safety, situation awareness, skill development and training, warnings and workload. This book brings together the most recent human factors work in the transportation domain, including empirical research, human performance and other types of modeling, analysis, and development. The issues facing engineers, scientists, and other practitioners of human factors in transportation research are becoming more challenging and more critical. The common theme across these sections is that they deal with the intersection of the human and the system. Moreover, many of the chapter topics cross section boundaries, for instance by focusing on function allocation in NextGen or on the safety benefits of a tower controller tool. This is in keeping with the systemic nature of the problems facing human factors experts in rail and road, aviation and maritime research – it is becoming increasingly important to view problems not as isolated issues that can be extracted from the system environment, but as embedded issues that can only be understood as a part of an overall system.

This book describes the accomplishments of a curious and imaginative scientist, and his endeavours to translate or even to extrapolate scientific insights into the world of art. The science section in this volume concerns studies on S-layers, a very important class of proteins found on the surface of numerous Bacteria and nearly all Archaea. S-layer proteins are one of the most abundant biopolymers on our planet, and assemble into the simplest type of biological membrane. Moreover, they are unique building blocks and patterning elements for the production of complex supramolecular structures and nanoscale devices in nanobiotechnology, molecular nanotechnology, synthetic biology, biomimetics and nanomedicine. In the second part of this book the author goes on to passionately describe how his scientific activities stimulated his art work, which in particular concerns the visualization of results and the potential of synthetic biology and evolutionary events

induced by genetic manipulations. Most importantly, the engagement in art allowed him to leave the rather curtailed canon of science and reach a mental state of unlimited freedom of thoughts. Mask-like sculptures are used as examples to visualize the intersection between science and art, and in particular the unpredictability and mystery of scientific visions.

Selected Papers on International Arbitration Volume 4

The Oxford Handbook of Law, Regulation and Technology

Pharmaceutical Industry and Public Policy in Post-reform India

Endoplasmic reticulum - shape and function in stress translation

The Study of Science and Religion

Hayes' Principles and Methods of Toxicology

There are fewer grounds today than in the past to deplore a North-South divide in research and innovation. This is one of the key findings of the UNESCO Science Report: towards 2030. A large number of countries are now incorporating science, technology and innovation in their national development agenda, in order to make their economies less reliant on raw materials and more rooted in knowledge. Most research and development (R&D) is taking place in high-income countries, but innovation of some kind is now occurring across the full spectrum of income levels according to the first survey of manufacturing companies in 65 countries conducted by the UNESCO Institute for Statistics and summarized in this report. For many lower-income countries, sustainable development has become an integral part of their national development plans for the next 10-20 years. Among higher-income countries, a firm commitment to sustainable development is often coupled with the desire to maintain competitiveness in global markets that are increasingly leaning towards 'green' technologies. The quest for clean energy and greater energy efficiency now figures among the research priorities of numerous countries. Written by more than 50 experts who are each covering the country or region from which they hail, the UNESCO Science Report: towards 2030 provides more country-level information than ever before. The trends and developments in science, technology and innovation policy and governance between 2009 and mid-2015 described here provide essential baseline information on the concerns and priorities of countries that could orient the implementation and drive the assessment of the 2030 Agenda for Sustainable Development in the years to come.

Many countries have implemented policies to increase the number and quality of scientific researchers as a means to foster innovation and spur economic development and progress. To that end, grounded in a view of women as a rich, yet underutilized knowledge and labor resource, a great deal of recent attention has focused on encouraging women to pursue education and careers in science – even in countries with longstanding dominant patriarchal regimes. Yet, overall, science remains an area in which girls and women are persistently disadvantaged. This book addresses that situation. It bridges the gap between individual- and societal-level perspectives on women in science in a search for systematic solutions to the challenge of building an inclusive and productive scientific workforce capable of creating the innovation needed for economic growth and societal wellbeing. This book examines both the role of gender as an organizing principle of social life and the relative position of women scientists within national and international labor markets. Weaving together and engaging research on globalization, the social organization of science, and gendered societal relations as key social forces, this book addresses critical issues affecting women's contributions and participation in science. Also, while considering women's representation in science as a whole, examinations of women in the chemical sciences, computing, mathematics and statistics are offered as examples to provide insights into how differing disciplinary cultures, functional tasks and socio-historical conditions can affect the advancement of women in science relative to important variations in educational and occupational realities. Edited by three social scientists recognized for their expertise in science and technology policy, education, workforce participation, and stratification, this book includes contributions from an intellectually diverse group of international scholars and analysts and features compelling cases and initiatives from around the world, with implications for research, industry practice, education and policy development.

Citizen science, the active participation of the public in scientific research projects, is a rapidly expanding field in open science and open innovation. It provides an integrated model of public knowledge production and engagement with science. As a growing worldwide phenomenon, it is invigorated by evolving new technologies that connect people easily and effectively with the scientific community. Catalysed by citizens' wishes to be actively involved in scientific processes, as a result of recent societal trends, it also offers contributions to the rise in tertiary education. In addition, citizen science provides a valuable tool for citizens to play a more active role in sustainable development. This book identifies and explains the role of citizen science within innovation in science and society, and as a vibrant and productive science-policy interface. The scope of this volume is global, geared towards identifying solutions and lessons to be applied across science, practice and policy. The chapters consider the role of citizen science in the context of the wider agenda of open science and open innovation, and discuss progress towards responsible research and innovation, two of the most critical aspects of science today.

Entrepreneurship is widely embraced today in political discourse, popular culture, and economic policy prescriptions.

Several groups actively promote entrepreneurial thinking and practices in higher education. This book examines how this 'Entrepreneurship Movement' impacts higher education in Canada and the United States.

5th International Conference on Well-Being in the Information Society, WIS 2014, Turku, Finland, August 18-20, 2014.

Proceedings

Political Leadership in South Africa

Contemporary Higher Education and Its Academic Dramas

International Workshops, BIRTE 2015, Kohala Coast, HI, USA, August 31, 2015, BIRTE 2016, New Delhi, India, September 5, 2016, BIRTE 2017, Munich, Germany, August 28, 2017, Revised Selected Papers

Proceedings of the Sixth International Workshop, CNL 2018, Maynooth, Co. Kildare, Ireland, August 27-28, 2018

National Security, Public Health: Exceptions to Human Rights?

The rise of digital health technologies is, for some, a panacea to many of the medical and public health challenges we face today.

This is the first book to articulate a critical response to the techno-utopian and entrepreneurial vision of the digital health phenomenon. Deborah Lupton, internationally renowned for her scholarship on the sociocultural and political aspects of medicine and health as well as digital technologies, addresses a range of compelling issues about the interests digital health represents, and its unintended effects on patients, doctors and how we conceive of public health and healthcare delivery. Bringing together social and cultural theory with empirical research, the book challenges apolitical approaches to examine the impact new technologies have on social justice, and the implication for social and economic inequalities. Lupton considers how self-tracking devices change the patient-doctor relationship, and how the digitisation and gamification of healthcare through apps and other software affects the

way we perceive and respond to our bodies. She asks which commercial interests enable different groups to communicate more widely, and how the personal data generated from digital encounters are exploited. Considering the lived experience of digital health technologies, including their emotional and sensory dimensions, the book also assesses their broader impact on medical and public health knowledges, power relations and work practices. Relevant to students and researchers interested in medicine and public health across sociology, psychology, anthropology, new media and cultural studies, as well as policy makers and professionals in the field, this is a timely contribution on an important issue.

*It is clearly recognized that medical errors represent a significant source of preventable healthcare-related morbidity and mortality. Furthermore, evidence shows that such complications are often the result of a series of smaller errors, missed opportunities, poor communication, breakdowns in established guidelines or protocols, or system-based deficiencies. While such events often start with the misadventures of an individual, it is how such events are managed that can determine outcomes and hopefully prevent future adverse events. The goal of *Vignettes in Patient Safety* is to illustrate and discuss, in a clinically relevant format, examples in which evidence-based approaches to patient care, using established methodologies to develop highly functional multidisciplinary teams, can help foster an institutional culture of patient safety and high-quality care delivery.*

*The global mandate for safer, cleaner and renewable energy has accelerated research on microbes that convert carbon sources to end-products serving as biofuels of the so-called first, second or third generation – e.g., bioethanol or biodiesel derived from starchy, sugar-rich or oily crops; bioethanol derived from composite lignocellulosic biomass; and biodiesels extracted from oil-producing algae and cyanobacteria, respectively. Recent advances in ‘omics’ applications are beginning to cast light on the biological mechanisms underlying biofuel production. They also unravel mechanisms important for organic solvent or high-added-value chemical production, which, along with those for fuel chemicals, are significant to the broader field of Bioenergy. The *Frontiers in Microbial Physiology Research Topic* that led to the current e-book publication, operated from 2013 to 2014 and welcomed articles aiming to better understand the genetic basis behind Bioenergy production. It invited genetic studies of microbes already used or carrying the potential to be used for bioethanol, biobutanol, biodiesel, and fuel gas production, as also of microbes posing as promising new catalysts for alternative bioproducts. Any research focusing on the systems biology of such microbes, gene function and regulation, genetic and/or genomic tool development, metabolic engineering, and synthetic biology leading to strain optimization, was considered highly relevant to the topic. Likewise, bioinformatic analyses and modeling pertaining to gene network prediction and function were also desirable and therefore invited in the thematic forum. Upon e-book development today, we, at the editorial, strongly believe that all articles presented herein – original research papers, reviews, perspectives and a technology report – significantly contribute to the emerging insights regarding microbial-derived energy production. Katherine M. Pappas, 2016*

Tailoring of biomolecules using protein engineering technology, and host cells culture techniques are among the most sophisticated and elegant achievements of modern applied life sciences in which the basic fundamentals biotechnology are applicable for the development and manufacturing of biologics and other related bio-molecules for a hurdle free life with good health. A majority of biologics derived from genetically modified host cells in the current market are bio-formulation such as antibodies, nucleic acid products and vaccines. Such bio-formulations are developed mainly in two steps i.e. upstream process and downstream process. The first volume of this series begins with the latest information on how the classical stepwise host cells culture (mammals, animals, plants, and bacteria) methodology has been changed to fully continuous or partially continuous host cells culture process in order to economise the biopharmaceutical products manufacturing process. In addition this volume narrates a brief history on conceptual development of new thoughts in designing biotechnology industries for commercial production of variety of therapeutic proteins with structural modification on the basis of clinical requirements. The readers will feel excited by going through the latest discovery and development in applied life sciences for designing innovative biomolecules for health care with utmost safe. The most interesting part of this volume is newly developed concept on bioprinting. It explains how to design and fabricate animate objects by fusing or depositing material of interest in the form of powders, solid dusts, metal, liquid or even living cells or tissues by layers to produce 3D objectives. The first volume ends with the latest information on the current trend in biologics market, market dynamic, drives, and opportunities with challenges.

Critical and Cross-Disciplinary Perspectives

Interdisciplinary Perspectives

The metabolic pathways and environmental controls of hydrocarbon biodegradation in marine ecosystems

Sociological, Theological, and Philosophical Perspectives

Global Health Informatics

The International Journal of Indian Psychology, Volume 3, Issue 4, No. 67

This book constitutes the thoroughly refereed post-conference proceedings of the Second International Workshop on Data Management and Analytics for Medicine and Healthcare, DMAH 2016, in New Delhi, India, in September 2016, held in conjunction with the 42nd International Conference on Very Large Data Bases, VLDB 2016. The 7 revised full papers presented together with 2 invited papers and 3 keynote abstracts were carefully reviewed and selected from 11 initial submissions. The papers are organized in topical sections on knowledge discovery of biomedical data; managing, querying and processing of medical image data; information extraction and data integration for biomedical data; and health information systems.

The variety, pace, and power of technological innovations that have emerged in the 21st Century have been breathtaking. These technological developments, which include advances in networked information and communications, biotechnology, neurotechnology, nanotechnology, robotics, and environmental engineering technology, have raised a number of vital and complex questions. Although these technologies have the potential to generate positive transformation and help address 'grand societal challenges', the novelty associated with technological innovation has also been accompanied by anxieties about their risks and destabilizing effects. Is there a potential harm to human health or the environment? What are the ethical implications? Do these innovations erode or antagonize values such as human dignity, privacy, democracy, or other norms underpinning existing bodies of law and regulation? These technological developments have therefore spawned a nascent but growing body of 'law and technology' scholarship, broadly concerned with exploring the legal, social and ethical dimensions of

technological innovation. This handbook collates the many and varied strands of this scholarship, focusing broadly across a range of new and emerging technology and a vast array of social and policy sectors, through which leading scholars in the field interrogate the interfaces between law, emerging technology, and regulation. Structured in five parts, the handbook (I) establishes the collection of essays within existing scholarship concerned with law and technology as well as regulatory governance; (II) explores the relationship between technology development by focusing on core concepts and values which technological developments implicate; (III) studies the challenges for law in responding to the emergence of new technologies, examining how legal norms, doctrine and institutions have been shaped, challenged and destabilized by technology, and even how technologies have been shaped by legal regimes; (IV) provides a critical exploration of the implications of technological innovation, examining the ways in which technological innovation has generated challenges for regulators in the governance of technological development, and the implications of employing new technologies as an instrument of regulatory governance; (V) explores various interfaces between law, regulatory governance, and new technologies across a range of key social domains.

The book deals with the complicated relationships between national security and human rights, and between public health and human rights. Its premise is the fact that national security and public health are both included in human rights instruments as 'exceptions' to the human rights therein sanctioned, yet they can arguably be considered as human rights themselves and be equally valuable. The book therefore asks to what extent the protection of the individual could - or should - be overridden to enable the protection of the national security or public health of the general public. Both practice and case law have shown that human rights risk being set aside when they clash with the protection of national security or public health. Through theoretical analysis and practical examples, the book addresses the conflicts that arise when the concepts of national security and public health are used - and abused - and other rights, including freedom of speech, procedural freedoms, individual health, are violated as a consequence. It provides many interesting findings on the values that states are ready to protect - and forego - to ensure their safety, which can contribute to the ongoing debate on the protection of human rights. This book was originally published as a special issue of *The International Journal of Human Rights*.

This book constitutes the thoroughly refereed conference proceedings of the BIRTE workshops listed below, which were held in conjunction with VLDB, the International Conference on Very Large Data Bases: 9th International Workshop on Business Intelligence for the Real-Time Enterprise, BIRTE 2015, held in Kohala Coast, Hawaii, in August 2015, 10th International Workshop on Enabling Real-Time Business Intelligence, BIRTE 2016, held in New Delhi, India, in September 2016, 11th International Workshop on Real-Time Business Intelligence and Analytics, BIRTE 2017, held in Munich, Germany, in August 2017. The BIRTE workshop series provides a forum for the discussion and advancement of the science and engineering enabling real-time business intelligence and the novel applications that build on these foundational techniques. The book includes five selected papers from BIRTE 2015; five selected papers from BIRTE 2016; and three selected papers from BIRTE 2017.

The Theatrical Professoriate

Plant cell wall in pathogenesis, parasitism and symbiosis

Controlled Natural Language

America's Moment: Creating Opportunity in the Connected Age towards 2030

Advancing Women in Science

This book examines the impact of economic reforms in India on the pharmaceutical industry and access to medicines. It traces the changing production and trade pattern of the industry, research and development (R&D) preferences and strategies of Indian pharmaceutical firms, patent system alongside pricing policy measures and their shortcomings. It also analyses the public health financing system in India driven largely by out-of-pocket expenditure - about 60 per cent - and characterised by very high share of medicines in total health expenditure. A masterful insight into a topical area, the work will be indispensable to those working on pharmaceutical industry and public policy. It will be of interest to researchers, scholars, students, and policy-makers of economics, industrial policy, public policy, intellectual property rights and health financing.

Controlled natural languages (CNLs) are based on natural language and apply restrictions on vocabulary, grammar, and/or semantics. They fall broadly into 3 groups. Some are designed to improve communication for non-native speakers of the respective natural language; in others, the restrictions are to facilitate the use of computers to analyze texts, for example, to improve computer-aided translation; and a third group of CNLs are designed to enable reliable automated reasoning and formal knowledge representation from seemingly natural texts. This book presents the 11 papers, selected from 14 submitted, and delivered at the sixth in the series of workshops on Controlled Natural Language, (CNL 2018), held in Maynooth, Ireland, in August 2018. The papers cover a full spectrum of controlled natural languages, ranging from human oriented to machine-processable controlled languages and from more theoretical results to interfaces, reasoning engines, and the real-life application of CNLs. The book will be of interest to all those working with controlled natural language, whatever their approach.

The huge volume of multi-modal neuroimaging data across different neuroscience communities has posed a daunting challenge to traditional methods of data sharing, data archiving, data processing and data analysis. Neuroinformatics plays a crucial role in

creating advanced methodologies and tools for the handling of varied and heterogeneous datasets in order to better understand the structure and function of the brain. These tools and methodologies not only enhance data collection, analysis, integration, interpretation, modeling, and dissemination of data, but also promote data sharing and collaboration. This Neuroinformatics Research Topic aims to summarize the state-of-art of the current achievements and explores the directions for the future generation of neuroinformatics infrastructure. The publications present solutions for data archiving, data processing and workflow, data mining, and system integration methodologies. Some of the systems presented are large in scale, geographically distributed, and already have a well-established user community. Some discuss opportunities and methodologies that facilitate large-scale parallel data processing tasks under a heterogeneous computational environment. We wish to stimulate on-going discussions at the level of the neuroinformatics infrastructure including the common challenges, new technologies of maximum benefit, key features of next generation infrastructure, etc. We have asked leading research groups from different research areas of neuroscience/neuroimaging to provide their thoughts on the development of a state of the art and highly-efficient neuroinformatics infrastructure. Such discussions will inspire and help guide the development of a state of the art, highly-efficient neuroinformatics infrastructure. This book is about what I remember about many members of my family and about the knowledge I obtained about them through various interviews and written sources, e.g., obituaries, newspapers, and articles I found on the Internet. The book follows a certain order. I describe what I remember about my immediate family members. I start off with my father then my mother and then my brother—the only sibling I ever had. I then discuss my life with my ex-wife and her family and then the only child we ever had. I go on to another chapter, or maybe the third chapter, and talk about my paternal grandfather's family and as much of what I could remember about my maternal grandmother's family. I know and discovered more about the former than the latter. I enhanced my discussion throughout the book with as many pictures as I could gather. The book has pictures anywhere from one to about eighty years old. This, I thought, would make the book more interesting and lively. The book is replete with explanatory footnotes for those of certain generations or knowledge who may not understand or know of certain places, celebrities, cultural practices, and events. The entire book was prepared to relate to all who might read it in terms of family connections, their interest(s) in travel, history, sports, genealogy, and biography. I then talk about my maternal grandmother's family. It is relatively short because I did not know too many of them that well. The book covers mostly what I know and found out about my maternal grandfather's family. That is because it is the largest segment of my entire family. My father had no siblings, whereas my mother had about ten or eleven siblings, and all of them had children and grandchildren. I discovered a great deal more accomplishments in life on my mother's side as opposed to my father's side of the family. I do not think the book is boring or particularly too long or too short. The book is a description of the life of the people whom I discuss and how I might have fitted into those lives.

How Information Technology Can Change Our Lives in a Globalized World

Future Spacecraft Propulsion Systems and Integration

UNESCO science report

Handbook of Healthcare Management

Research Handbook on Intellectual Property and the Life Sciences

Safe and Secure Cities

The iron element (Fe) is strictly required for the survival of most forms of life, including bacteria, plants and humans. Fine-tuned regulatory mechanisms for Fe absorption, mobilization and recycling operate to maintain Fe homeostasis, the disruption of which leads to Fe overload or Fe depletion. Whereas the deleterious effect of Fe deficiency relies on reduced oxygen transport and diminished activity of Fe-dependent enzymes, the cytotoxicity induced by Fe overload is due to the ability of this metal to act as a pro-oxidant and catalyze the formation of highly reactive hydroxyl radicals via the Fenton chemistry. This results in unfettered oxidative stress generation that, by inducing protein, lipid and DNA oxidation, leads to Fe-mediated programmed cell death and organ dysfunction. Major and systemic Fe overloads occurring in hemochromatosis and Fe-loading anemias have been extensively studied. However, localized tissue Fe overload was recently associated to a variety of pathologies, such as infection, inflammation, cancer, cardiovascular and neurodegenerative disorders. In keeping with the existence of cross-regulatory interactions between Fe homeostasis and the pathophysiology of these diseases, further investigations on the mechanisms that provide cellular and systemic adaptation to tissue Fe overload are instrumental for future therapeutic approaches. Thus, we encourage our colleagues to submit original research papers, reviews, perspectives, methods and technology reports to contribute their findings to a current state of the art on a comprehensive overview of the importance of iron metabolism in pathophysiologic conditions.

New scientific methods offer new insights in the past. Promising opportunities for archaeology and historiography are confronted with the challenges of interdisciplinary cooperation between the sciences and the humanities. This volume presents contributions by European researchers, arranged in four sections: fundamental questions of archaeology and biosciences, migrations, transformations, and social structures.

This book constitutes the refereed proceedings of the 5th International Conference on Well-Being in the Information Society, WIS 2014, held in Turku, Finland, in September 2014. The 24 revised full papers presented were carefully reviewed and selected from 64 submissions. The core topic is livability and quality of (urban) living with safety and security. The papers address topics such as secure and equal use of information resources, safe and secure work environments and education institutions, cyberaggression and cybersecurity as well as impact of culture on urban safety and security.

Intellectual property (IP) is a key component of the life sciences, one of the most dynamic and innovative fields of technology today. At the same time, the relationship between IP and the life sciences raises new public policy dilemmas. The Research Handbook on Intellectual Property and the Life Sciences comprises contributions by leading experts from academia and industry to provide in-depth analyses of key topics including pharmaceuticals, diagnostics and genes, plant innovations, stem cells, the role of competition law and access to medicines. The Research Handbook focuses on the relationship between IP and the life sciences in Europe and the United States, complemented by country-specific case studies on Australia, Brazil, China, India, Japan, Kenya, South Africa and Thailand to provide a truly international perspective.

Transfer Cells

Competitive Strategies in Life Sciences

Recent Discoveries in Evolutionary and Genomic Microbiology

Geoscience for the Public Good and Global Development

Super Fly

Innovation in Open Science, Society and Policy

It is time for a new conversation. Amid the biggest economic transformation in a century, the challenge of our time is to make sure that all Americans benefit from the wave of digital revolutions around the world that have permeated and upended modern life. Yet today's economic arguments seem stuck. We need a new vision of a hopeful future and a new action agenda. So many Americans are uncertain about the future. How can there be so many paths to opportunity with so few people traveling them? As a nation, we have to understand what is required to help Americans succeed now, and how to prepare our country for what comes next. We have been here before. A hundred years ago, America experienced the greatest economic transformation and technological revolution in its history. The transformation of the past twenty years—as the world has moved through the information era into the digital age—has turned our life and work upside down once again. It is a time of tremendous change but also of tremendous possibility. Rework America is a group of American leaders who know from experience the challenges we face—and the potential solutions. In America's Moment they suggest a practical agenda for an exciting future. It is illustrated by people who are already showing the way and includes actions Americans can take today in their own communities: preparing people to succeed, using the reach of the Internet and data to innovate jobs and to reach new markets all over the world, using technology to match employers and workers, and transitioning to a "no-collar" working world—neither blue collar nor white collar. Set against the history of how Americans succeeded once before in remaking their country, America's Moment is about the future. It describes how the same forces of change—technology and a networked world—can become tools that can open opportunity to everyone.

This collection represents certain discoveries that were made in evolutionary and genomic microbiology during the recent ten years. We attempted to shed light on topical issues of microbial evolution and microbiome biology. In our eyes, these articles are of an excellent quality and may be helpful both for casual readers and for specialists in the field.

Biodegradation mediated by indigenous microbial communities is the ultimate fate of the majority of oil hydrocarbon that enters the marine environment. The aim of this Research Topic is to highlight recent advances in our knowledge of the pathways and controls of microbially-catalyzed hydrocarbon degradation in marine ecosystems, with emphasis on the response of microbial communities to the Deepwater Horizon oil spill in the Gulf of Mexico. In this Research Topic, we encouraged original research and reviews on the ecology of hydrocarbon-degrading bacteria, the rates and mechanisms of biodegradation, and the bioremediation of discharged oil under situ as well as near in situ conditions. The cell wall is a complex structure mainly composed of cellulose microfibrils embedded in a cohesive hemicellulose and pectin matrix. Cell wall structural proteins, enzymes and their inhibitors are also essential components of plant cell walls. They are involved in the cross-link of cell wall polysaccharides, wall structure, and the perception and

signaling of defense-related elicitors at the cell surface. In the outer part of the epidermal cells, the polysaccharides are coated by the cuticle, consisting of hydrophobic cutin, suberin and wax layers. Lignin, a macromolecule composed of highly cross-linked phenolic molecules, is a major component of the secondary cell wall. The cell wall is the first cell structure on which interactions between plants and a wide range of other organisms, including insects, nematodes, pathogenic or symbiotic micro-organisms take place. It not only represents a barrier that limits access to the cellular contents that provide a rich nutrient source for pathogens but serves as a source of elicitors of plant defense responses released upon partial enzymatic degradation of wall polysaccharides during infection. Modification of the plant cell wall can also occur at the level of plasmodesmata during virus infection as well as during abiotic stresses. The fine structure and composition of the plant cell wall as well as the regulation of its biosynthesis can thus strongly influence resistance and susceptibility to pathogens. This Research Topic provides novel insights and detailed overviews on the dynamics of the plant cell wall in plant defence, parasitism and symbiosis and describes experimental approaches to study plant cell wall modifications occurring during interaction of plants with different organisms.

Vignettes in Patient Safety

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Second International Workshop, DMAH 2016, Held at VLDB 2016, New Delhi, India, September 9, 2016, Revised Selected Papers

Guide to Programming for the Digital Humanities

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Winner of the National Outdoor Book Award for Natural History and a New York Times Editors Choice Pick "After reading *Super Fly*, you will never take a fly for granted again. Thank you, Jonathan Balcombe, for reminding us of the infinite marvels of everyday creatures." –Sy Montgomery, Author of *How to Be a Good Creature* From an expert in animal consciousness, a book that will turn the fly on the wall into the elephant in the room. For most of us, the only thing we know about flies is that they're annoying, and our usual reaction is to try to kill them. In *Super Fly*, the myth-busting biologist Jonathan Balcombe shows the order Diptera in all of its diversity, illustrating the essential role that flies play in every ecosystem in the world as pollinators, waste-disposers, predators, and food source; and how flies continue to reshape our understanding of evolution. Along the way, he reintroduces us to familiar foes like the fruit fly and mosquito, and gives us the chance to meet their lesser-known cousins like the Petroleum Fly (the only animal in the world that breeds in crude oil) and the Chocolate Midge (the sole pollinator of the Cacao tree). No matter your outlook on our tiny buzzing neighbors, *Super Fly* will change the way you look at flies forever. Jonathan Balcombe is the author of four books on animal sentience, including the New York Times bestselling *What A Fish Knows*, which was nominated for the PEN/E.O. Wilson Award for Science Writing. He has worked for years as a researcher and educator with the Humane society to show us the consciousness of other creatures, and here he takes us to the farthest reaches of the animal kingdom.

The SAA Series on International Arbitration contains the best graduation papers of all participants who successfully completed the post graduate studies in international arbitration of the SAA Swiss Arbitration Academy. The papers cover different aspects of international arbitration. The SAA Series is published on a yearly basis. The Swiss Arbitration Academy is a private institution founded and managed by the editors. Each year, the SAA offers and conducts an intensive and practical course in international arbitration. The training is designed for lawyers, in-house counsel, and other professionals interested in cutting edge international dispute resolution education. All participants, who successfully complete the course, which includes the submission of the final paper, are awarded the SAA Certificate and the title Arbitration Practitioner ArbP.

Digital Health

The Entrepreneurship Movement and the University

The Importance Of Iron In Pathophysiologic Conditions

Citizen Science