Review On Ageing Mechanisms Of Different Li Ion Batteries

This book brings together the most up-to-date information on recent research results of leading laboratories on aging science in East Asia, particularly in Japan, Korea, and Hong Kong. Starting with a comprehensive overview of various hypotheses on biological mechanisms of aging by Dr. Sataro Goto, each chapter covers broad aspects of the most recent findings in aging-related topics: centenarian studies and genome analysis of progeria, metabolic biochemistry and neurobiology, longevity controls in yeast and nematodes, oxidative stress and calorie restriction, and neurodegeneration mechanisms in Alzheimer's and Huntington's diseases, with further potential therapeutic approaches to these age-related neurodegenerative diseases. Also included, in part, is a summary and the outcomes of a scientific discussion forum called the Asian Aging Core for Longevity (AACL) that has been held annually alternating between Japan and Korea during the last decade. This book can serve as a useful resource for finding appropriate collaborators in the areas it covers. The target readership is made up of graduate students and researchers at universities, medical and/or life-science schools, and biomedical and pharmaceutical institutes. Why does aging exist? How do we age? How is each organism's lifespan determined? These are fundamental questions in the field. We may be still far from achieving a complete view of aging mechanisms, but this book, Aging Mechanisms, offers an excellent opportunity to become familiar with the most updated progress in the biomedical research of aging in Japan and Korea, the two leading nations for human longevity.

This volume of Advances in Cell Aging and Gerontology reviews the mechanisms that regulate cellular calcium homeostasis in various tissues throughout the body and how these systems change during aging. Normal functions of calcium in regulating various physiological processes are considered and the evidence supporting roles for perturbed calcium regulation in the pathogenesis of several prominent age-related disorders are detailed. The cross-disciplinary approach used to organize this book should provide readers interested in a specific area of calcium regulation with a broader perspective and a framework for which to shape future studies in their laboratories.

Presenting the latest research in the biology of aging, this volume addresses important theoretical issues focusing on the basis for why humans live as long as they do. Expert authors combine three general paradigms of aging research: demographic studies, evolutionary studies, and studies of biological mechanisms. Topics explored include: Why does aging occur? Cellular aging Models in aging research Modern approaches to the mechanisms of aging The genetics of behavioral aging

Social and medical developments have recently led to a dramatic increase in life expectancy. This has inspired the study of organismic changes

associated with healthy ageing, in particular the erosion of homeostatic capabilities in multiple endocrine systems. This book reviews advances in the understanding of endocrine facets of ageing. It considers the relative magnitudes and time courses of different endocrine adaptations in the ageing human and experimental animal, addressing the influence of external factors on the rates of progression of endocrine sequelae in ageing, the mechanisms that underlie the disarray of endocrine axes in ageing, and the implications of therapeutic reconstitution of hormones in ageing. This book: Considers the mechanisms of ageing and hormonal changes that occur with age. Discusses healthy ageing and the relationships between hormonal changes and pathophysiological conditions such as atherosclerosis and age-related bone loss. Draws together contributions from basic and clinical research, to identify and stimulate promising new research directions.

Aging Mechanisms

A Critical Review of the Mechanism of Ageing in Alloys Based on the Aluminum Zinc-magnesium System

Telomeres and Telomerase in Aging, Disease, and Cancer

The Search for New Paradigms

Calcium Homeostasis and Signaling in Aging

The Mitochondrion in Aging and Disease

Light water reactors (LWRs) are the predominant class of nuclear power reactors in operation today; however, ageing and degradation can influence both their performance and lifetime. Knowledge of these factors is therefore critical to safe, continuous operation. Materials ageing and degradation in light water reactors provides a comprehensive guide to prevalent deterioration mechanisms, and the approaches used to handle their effects. Part one introduces fundamental ageing issues and degradation mechanisms. Beginning with an overview of ageing and degradation issues in LWRs, the book goes on to discuss corrosion in pressurized water reactors and creep deformation of materials in LWRs. Part two then considers materials ' ageing and degradation in specific LWR components. Applications of zirconium alloys in LWRs are discussed, along with the ageing of electric cables. Materials management strategies for LWRs are then the focus of part three. Materials management strategies for pressurized water reactors and VVER reactors are considered before the book concludes with a discussion of materials-related problems faced by LWR operators and corresponding research needs. With its distinguished editor and international team of expert contributors, Materials ageing and degradation in light water reactors is an authoritative review for anyone requiring an understanding of the performance and durability of this type of nuclear power plant, including plant operators and managers, nuclear metallurgists, governmental and regulatory safety bodies, and

researchers, scientists and academics working in this area. Introduces the fundamental ageing issues and degradation mechanisms associated with this class of nuclear power reactors Considers materials ageing and degradation in specific light water reactor components, including properties, performance and inspection Chapters also focus on material management strategies

Aging of unicellular and multicellular eukaryotic organisms is a convoluted biological phenomenon, which is manifested as an age-related functional decline caused by progressive dysregulation of certain cellular and organismal processes. Many chronic diseases are associated with human aging. These aging-associated diseases include cardiovascular diseases, chronic obstructive pulmonary disease, chronic kidney disease, diabetes, osteoarthritis, osteoporosis, sarcopenia, stroke, neurodegenerative diseases (including Parkinson ' s, Alzheimer ' s, and Huntington ' s diseases), and many forms of cancer. Studies in yeast, roundworms, fruit flies, fishes, mice, primates, and humans have provided evidence that the major aspects and basic mechanisms of aging and aging-associated pathology are conserved across phyla. The focus of this International Journal of Molecular Sciences Special Issue is on molecular and cellular mechanisms, diagnostics, and therapies and diseases of aging. Fifteen original research and review articles in this Special Issue provide important insights into how various genetic, dietary, and pharmacological interventions can affect certain longevity-defining cellular and organismal processes to delay aging and postpone the onset of age-related pathologies in evolutionarily diverse organisms. These articles outline the most important unanswered questions and directions for future research in the vibrant and rapidly evolving fields of mechanisms of biological aging, aging-associated diseases, and aging-delaying therapies.

The challenges to humanity posed by the digital future, the first detailed examination of the unprecedented form of power called "surveillance capitalism," and the quest by powerful corporations to predict and control our behavior. In this masterwork of original thinking and research, Shoshana Zuboff provides startling insights into the phenomenon that she has named surveillance capitalism. The stakes could not be higher: a global architecture of behavior modification threatens human nature in the twenty-first century just as industrial capitalism disfigured the natural world in the twentieth. Zuboff vividly brings to life the consequences as surveillance capitalism advances from Silicon Valley into every economic sector. Vast wealth and power are accumulated in ominous new "behavioral futures markets," where predictions about our behavior are bought and sold, and the production of goods and services is subordinated to a new "means of behavioral modification." The threat has

shifted from a totalitarian Big Brother state to a ubiquitous digital architecture: a "Big Other" operating in the interests of surveillance capital. Here is the crucible of an unprecedented form of power marked by extreme concentrations of knowledge and free from democratic oversight. Zuboff's comprehensive and moving analysis lays bare the threats to twenty-first century society: a controlled "hive" of total connection that seduces with promises of total certainty for maximum profit -- at the expense of democracy, freedom, and our human future. With little resistance from law or society, surveillance capitalism is on the verge of dominating the social order and shaping the digital future -- if we let it.

Telomere shortening represents one of the basic aspects of ageing and telomere dysfunction could contribute to the accumulation of DNA damage during ageing. This book summarizes evidence and data indicating that telomere dysfunction influences human ageing, diseases and cancer. The book describes our current knowledge on checkpoints that limit cellular lifespan and survival in response to telomere dysfunction. There is special focus on adult stem cells.

The Fight for a Human Future at the New Frontier of Power

Annual Review of Gerontology and Geriatrics, Volume 21, 2001

Molecular Mechanisms of Aging

Focus on Biobehavioral Perspectives on Health in Late Life

A Neuroscientist Explores the Power and Potential of Our Lives

Review of Biological Research in Aging

Recognition that aging is not the accumulation of disease, but rather comprises fundamental biological processes that are amenable to experimental study, is the basis for the recent growth of experimental biogerontology. As increasingly sophisticated studies provide greater understanding of what occurs in the aging brain and how these changes occur

Decades of research have demonstrated that normal aging is accompanied by cognitive change. Much of this change has been conceptualized as a decline in function. However, age-related changes are not universal, and decrements in older adult performance may be moderated by experience, genetics, and environmental factors. Cognitive aging research to date has also largely emphasized biological changes in the brain, with less evaluation of the range of external contributors to behavioral manifestations of age-related decrements in performance. This handbook provides a comprehensive overview of cutting-edge cognitive aging research through the lens of a life course perspective that takes into account both behavioral and neural changes. Focusing on the fundamental principles that characterize a life course approach - genetics, early life

experiences, motivation, emotion, social contexts, and lifestyle interventions - this handbook is an essential resource for researchers in cognition, aging, and gerontology.
Addressing all those interested in the history of American science and concerned with its future, a leading scholar of public policy explains how and why the Office of Naval Research became the first federal agency to support a wide range of scientific work in universities. Harvey Sapolsky shows that the ONR functioned as a "surrogate national science foundation" between 1946 and 1950 and argues that its activities emerged not from any particularly enlightened position but largely from a bureaucratic accident. Once involved with basic research, however, the ONR challenged a Navy skeptical of the value of independent scientific advice and established a national security rationale that gave American science its Golden Age. Eventually, the ONR's autonomy was worn away in bureaucratic struggles, but Sapolsky demonstrates that its experience holds lessons for those who are committed to the effective management of science and interested in the ability of scientists to choose the directions for their research. As military support for basic research fades, scientists are discovering that they are unprotected from the vagaries of distributive politics. Originally published in 1990. The Princeton Legacy Library uses the latest print-on-demand technology to again make available previously out-of-print books from the distinguished backlist of Princeton University Press. These editions preserve the original texts of these important books while presenting them in durable paperback and hardcover editions. The goal of the Princeton Legacy Library is to vastly increase access to the rich scholarly heritage found in the thousands of books published by Princeton University Press since its founding in 1905.
Mitochondria, the "power plants" of eukaryotic cells, are best known for the generation of adenosine triphosphate (ATP), the universal cellular "energy currency" of the cell, and the synthesis of different essential components. Mitochondrial dysfunction is known to lead to various degenerative disorders, disease, and aging. The Mitochondrion in Aging and Disease works to unravel the processes leading to mitochondrial impairments and of pathways involved in mitochondrial quality control and their impact on health and aging will be addressed. Reviews current topics of interest Written by experts in the field
Annual Review of Gerontology and Geriatrics, Volume 10, 1990

The Science of Hormesis in Health and Longevity
Critical Reviews of Oxidative Stress and Aging
Handbook of the Biology of Aging

Successful Aging

This two-volume reference examines the translational research field of oxidative stress and ageing. It focuses on understanding the molecular basis of oxidative stress and its associated age-related diseases, with the goal of developing new methods for treating the human ageing processes.

The Science of Hormesis in Health and Longevity provides a comprehensive review of mild stress-induced physiological hormesis and its role in the maintenance and promotion of health. Coverage includes the underlying mechanisms of hormesis, including details of stress-response signaling, an enriched environment, positive challenges and dose-response mechanisms, amongst others. Research from top experts is presented to provide suggestions for developing novel therapeutic strategies, along with lifestyle interventions to promote health and homoeostasis. Researchers in aging and physiology, gerontologists, clinicians and medical students will find this a valuable addition for their work. Provides a comprehensive, scholarly review of the current state of hormesis in physiology, health, disease and aging Includes multiple perspectives and in-depth analysis by top experts involved in cutting-edge research to provide developing, novel therapeutic strategies, as well as lifestyle interventions Offers a clear understanding of hormesis' underlying mechanisms, including details of stress-response signaling, an enriched environment, positive challenges, dose-response mechanisms, and more

This monograph is the written version of a series of talks delivered as recent MacEachran Lectures at the University of Alberta. The informal style of the lectures, and the inclusion of a relatively large number of figures, has been preserved in order to keep the monograph faithful to the concept of an individual attempting to integrate his own research into a reasonably coherent framework. Although the volume is very much a personal account of one individual's perspective, the studies reported are naturally a product of many collaborations as well as inspirations from colleagues. The fundamental issue addressed is how adult age differences in fluid or process aspects of cognitive functioning are to be explained. Several potential mediators are considered, with most of the emphasis devoted to the investigation of working memory and processing speed as variables mediating relations between age and cognition.

Aging concepts in evolutionary biology are far more developed today than was the case even in the late 1970s. However, active debate remains between those who feel that the case for the evolutionary theory of aging is well established and those who feel it is not. The review reflects this ongoing ferment, providing a historical perspective as well as discussion of recent research and experimentation on the evolution of senescence, through late 1988. In addition to the general evolutionary theory, two proposed population genetic mechanisms for the evolution of senescence are presented: mutation accumulation and antagonistic pleiotropy.

Endocrine Facets of Ageing

Trace Elements and Minerals in Health and Longevity

Mechanisms and Management

Biology of Aging

Molecular Mechanisms of Adult Stem Cell Ageing
Aging and Age-Related Disorders From Molecular Mechanisms to Therapies

Ageing of composites is a highly topical subject given the increasing use of composites in structural applications in many industries. Ageing of composites addresses many of the uncertainties about the long-term performance of composites and how they age under conditions encountered in service. The first part of the book reviews processes and modelling of composite ageing including physical and chemical ageing of polymeric composites, ageing of glass-ceramic matrix composites, chemical ageing mechanisms, stress corrosion cracking, thermo-oxidative ageing, spectroscopy of ageing composites, modelling physical and accelerated ageing and ageing of silicon carbide composites. Part two examines ageing of composites in transport applications including aircraft, vehicles and ships. Part three reviews ageing of composites in non-transport applications such as implants in medical devices, oil and gas refining, construction, chemical processing and underwater applications. With its distinguished editor and international team of contributors, Ageing of composites is a valuable reference guide for composite manufacturers and developers. It also serves as a source of information for material scientists, designers and engineers in industries that use composites, including transport, chemical processing and medical engineering. Addresses many of the uncertainties about the long-term performance of composites and how they age under conditions encountered in service Reviews processes and modelling of composite ageing including chemical ageing mechanisms and stress corrosion cracking Discusses ageing of composites in both transport and non-transport applications ranging from aircraft to implants in medical devices

This volume presents a clear, concise overview of the current state of knowledge about the biology of aging ñ serving as both an invaluable graduate-level text and a key reference for practicing professionals. Over a dozen distinguished contributors probe the latest developments in our knowledge of why people age and how the process works. These authoritative chapters are not just written for biologists ñ but for gerontologists in general. Marks the tenth anniversary of the Annual Review of Gerontology and Geriatrics.

This volume is a collection of 21 papers comprising conceptual and technical issues, non-mammalian models and mammalian models and including issues such as aging of the female reproductive system and computer modelling in the study of aging.

Plant life management (PLiM) is a methodology focussed on the safety-first management of nuclear power plants over their entire lifetime. It incorporates and builds upon the usual periodic safety reviews and licence renewals as part of an overall framework designed to assist plant operators and regulators in assessing the operating conditions of a nuclear power plant, and establishing the technical and economic requirements for safe, long-term operation. Understanding and mitigating ageing in nuclear power plants critically reviews the fundamental ageing-degradation mechanisms of materials used in nuclear power plant structures, systems and components (SSC), along with their relevant analysis and mitigation paths, as well as reactor-type specific PLiM practices. Obsolescence and other less obvious ageing-related aspects in nuclear power plant

operation are also examined in depth. Part one introduces the reader to the role of nuclear power in the global energy mix, and the importance and relevance of plant life management for the safety regulation and economics of nuclear power plants. Key ageing degradation mechanisms and their effects in nuclear power plant systems, structures and components are reviewed in part two, along with routes taken to characterise and analyse the ageing of materials and to mitigate or eliminate ageing degradation effects. Part three reviews analysis, monitoring and modelling techniques applicable to the study of nuclear power plant materials, as well as the application of advanced systems, structures and components in nuclear power plants. Finally, Part IV reviews the particular ageing degradation issues, plant designs, and application of plant life management (PLiM) practices in a range of commercial nuclear reactor types. With its distinguished international team of contributors, Understanding and mitigating ageing in nuclear power plants is a standard reference for all nuclear plant designers, operators, and nuclear safety and materials professionals and researchers. Introduces the reader to the role of nuclear power in the global energy mix Reviews the fundamental ageing-degradation mechanisms of materials used in nuclear power plant structures, systems and components (SSC) Examines topics including elimination of ageing effects, plant design, and the application of plant life management (PLiM) practices in a range of commercial nuclear reactor types

Modern Topics in the Biology of Aging

Hormones in Ageing and Longevity

Stress, the Aging Brain, and the Mechanisms of Neuron Death

The Cambridge Handbook of Cognitive Aging

Frailty and Herbal Medicines- From Molecular Mechanisms to Clinical Efficacy

Models, Methods, and Mechanisms

A comprehensive review of all aspects of hypertension in the elderly using the most current clinical data. Topics range from basic concepts, epidemiology and trials, and evaluation and management, to pharmacologic treatment, special populations, and adherence, all presented with an emphasis on the optimal management of patients. The authors examine in detail the mechanisms of hypertension in the elderly, the lifestyle trials and outcomes trials that were conducted in older persons, as well as the problems of clinical evaluation, secondary hypertension, adherence, and target organ damage. Extensive discussions of pharmacologic therapy detail the role of all the major drug classes. Handbook of the Biology of Aging, Seventh Edition, reviews and synthesizes recent findings and discoveries in the field. This volume is part of The Handbooks of Aging series, which also includes The Handbook of the Psychology of Aging and The Handbook of Aging and the Social Sciences. The book is organized into two parts. Part 1 covers basic aging processes. It covers concepts relevant to clinical research, such as muscle, adipose tissue, and stem cells. It discusses research on how dietary restriction can slow down the aging process and extend life in a

wide range of species. Part 2 deals with the medical physiology of aging. It contains several chapters on the aging of the human brain. These chapters deal not only with diseases but also with normal aging changes to cerebral vasculature and myelination as well as the clinical implications of those changes. Additional chapters cover how aging affects central features of human health such as insulin secretion, pulmonary and cardiac function, and the ability to maintain body weight and body temperature. The volume is primarily directed at basic researchers who wish to keep abreast of new research outside their own subdiscipline. It will also be useful to medical, behavioral, and social gerontologists who want to learn about the discoveries of basic scientists and clinicians. Contains basic aging processes as determined by animal research as well as medical physiology of aging as known in humans Covers hot areas of research, like stem cells, integrated with longstanding areas of interest in aging like telomeres, mitochondrial function, etc. Edited by one of the fathers of gerontology (Masoro) and contributors represent top scholars in gerintology

Aging MechanismsLongevity, Metabolism, and Brain AgingSpringer

This multi-chapter book focuses on one of the hottest topics in ageing research – the role of hormones in health and longevity, offering a comprehensive and up-to-date overview of their mechanistic roles in health, ageing and longevity. Hormones are an excellent system of communication between cells and tissues within an organism, and they coordinate a wide range of processes in biological systems, including neuroendocrine and immunological controls. The book offers insights into the latest significant advances in our understanding of the mechanisms of hormonal signaling that control a variety of processes involved in development and ageing. It is divided into four parts: Part I includes a review of the hundred-year history of hormones by the illustrious hormone biochemist Dr. J.R. Tata. Part II presents various chapters on the hormones involved in growth, stress and metabolism, while Part III addresses the hormones controlling cognition and rhythms in ageing processes. Lastly, Part IV discusses the hormones affecting reproduction, immunity and life span. It also explores the use of hormones as pharmaceuticals to maintain health in the elderly. It is a valuable resource for those working in the area of hormone signaling in general and in the field of ageing research in particular.

Mechanisms of Aging and Mortality

Science and the Navy

Ageing of Composites

Annual Review of Gerontology and Geriatrics, Volume 30, 2010

Mechanisms of Cardiovascular Aging

Mechanisms of Age-cognition Relations in Adulthood

Introductory Review on Sirtuins in Biology and Disease provides key insights for scientists and advanced students who need to understand sirtuins and the current research in this field. This book is ideal for pharmaceutical companies as they develop novel targets using sirtuins for metabolic diseases, cancer and neurodegenerative illnesses. Sirtuins are a diverse family of proteins, with several members in mammals. The functional diversity of sirtuins is rather broad, and they have been implicated in various central biological processes. Thus, they are also highly relevant in the context of various human diseases, from cancer to neurodegeneration. Covers both the general and specific aspects of sirtuin proteins and their role in biology, aging and disease Presents a top quality collection of leading experts who contribute on a wide range of sirtuin-related topics Ideal resource for pharmaceutical companies as they develop novel targets using sirtuins for metabolic diseases, cancer and neurodegenerative illnesses
Numerous studies had been performed to elucidate the mechanisms of aging and to achieve rejuvenation, with some success reported in recent years. However, at present, the findings from those studies are not sufficient to resolve the issue of aging. This book presents an overview of recent topics on cellular aging and rejuvenation. In the early chapters, the molecular mechanisms of aging via the activities of clock and ion channel proteins, in addition to overall aspects, are discussed. In the latter part, the aging of the skin, immune system, and brain is discussed. This book will prove useful for those studying or developing new drugs to counter the aging process and will encourage the development of novel ideas for rejuvenation.
This volume of the subcellular Biochemistry series will attempt to bridge the gap between the subcellular events that are related to aging as they were described in the first volume of this set of two books and the reality of aging as this is seen in clinical practice. All chapters will start from the biochemistry or cell biology, where the data is available and work up towards the understanding that we have of aging in the various areas that are related to the subject. Key focus points for this volume are nutrition, external factors and genetics on aging. There will also be chapters that will focus on various organs or tissues in which aging has been well studied, like the eyes, the muscles, the immune system and the bones. The aim of the book project and the book project that is published in concert with this volume is to bring the subcellular and clinical areas into closer contact.
Looking beyond the now widely recognized relationships between stress and physical illness, this accessible and engagingly written book suggests that stress and stress-related hormones can also endanger the brain. Strategies to reduce stress and methods to protect neurons from further damage are proposed, and the relevance for humans of the animal research findings are clearly delineated. Sapolsky provides an extensive review of the recent, exciting data on glucocorticoids, the adrenal steroid hormones (hydrocortisone or cortisol in humans) that are released during stress. Excessive exposure to these hormones can damage the brain and make neurons more vulnerable to neurological insults. The findings he reports and ideas he synthesizes may have profound implications for understanding brain aging and resistance of the brain to the damaging effects of strokes, seizures, and possibly Alzheimer's disease. In part I Sapolsky focuses on how the failure of glucocorticoid regulation and subsequent excessive secretion combine to cause a complex cascade of degeneration in the brain during aging. In part 11 he addresses the implications of glucocorticoid neurotoxicity for neurology. Each chapter includes a helpful summary of the major points discussed

as well as a capsule review of information from the previous chapters. Robert M. Sapolsky is Associate Professor of Biology and Neuroscience at Stanford University. He is also Research Associate at the Institute for Primate Research, National Museums of Kenya, Nairobi, and a MacArthur Fellow.

Hypertension in the Elderly

Advances in Basic Science, Diagnostics and Intervention

The Genetics of Aging

Molecular Mechanisms of the Aging Process and Rejuvenation

Introductory Review on Sirtuins in Biology, Aging, and Disease

A Review of the Chemical and Physical Mechanisms of the Storage Stability of Fast Pyrolysis Bio-oils

The Handbook of the Biology of Aging, Sixth Edition, provides a comprehensive overview of the latest research findings in the biology of aging. Intended as a summary for researchers, it is also adopted as a high level textbook for graduate and upper level undergraduate courses. The Sixth Edition is 20% larger than the Fifth Edition, with 21 chapters summarizing the latest findings in research on the biology of aging. The content of the work is virtually 100% new. Though a selected few topics are similar to the Fifth Edition, these chapters are authored by new contributors with new information. The majority of the chapters are completely new in both content and authorship. The Sixth Edition places greater emphasis and coverage on competing and complementary theories of aging, broadening the discussion of conceptual issues. Greater coverage of techniques used to study biological issues of aging include computer modeling, gene profiling, and demographic analyses. Coverage of research on Drosophilia is expanded from one chapter to four. New chapters on mammalian models discuss aging in relation to skeletal muscles, body fat and carbohydrate metabolism, growth hormone, and the human female reproductive system. Additional new chapters summarize exciting research on stem cells and cancer, dietary restriction, and whether age related diseases are an integral part of aging. The Handbook of the Biology of Aging, Sixth Edition is part of the Handbooks on Aging series, including Handbook of the Psychology of Aging and Handbook of Aging and the Social Sciences, also in their 6th editions.

This volume of Advances in Cell Aging and Gerontology provides a timely review on the molecular and cellular basis of cardiovascular diseases (CVD). Age itself is the leading risk factor for cardiovascular diseases, which include loss of vasomotor function, athero- and arterio-sclerosis, hypertension, congestive heart failure and stroke. Together these pathologies comprise the leading causes of permanent disability, hospitalization and death for individuals over the age of 65. Thus, there is a critical need to assess both the age-associated causes leading to CVD as well as the current state of knowledge on preventive regimens designed to slow or modulate disease progression. This book concisely summarizes the current knowledge related to the major aspects contributing to cardiovascular disfunction in the elderly as well as potential ways of maintaining or improving human cardiovascular healthspan.

Reviews the epidemiological, demographic, and biological basis of population models of human mortality. This monograph discusses biological mechanisms, which shape the age-patterns of mortality. It also investigates the effects of an individual health state, susceptibility to diseases and death, or physical frailty on changes in late age survival.

The Genetics of Aging is divided into several sections in an attempt to provide a logical

progression from the level of the genome to the realm of human genetics. The relationship between the genetic material and aging will be thoroughly explored in the initial chapters. These chapters discuss in depth the various theories that have been proposed for the mechanisms of aging at the molecular level and present data which either support or contradict these hypotheses. Subsequent chapters will deal with the genetics of aging in organisms ranging from paramecium to mammals. The largest section of this volume will be devoted to several important areas in human genetics: human genetic disorders which feature premature aging, the effect of human parental aging on the production of genetically abnor mal offspring, the genetics of human longevity, and a review of studies on aging human twins. Over the last few decades genetic technology has provided enormous insight into a number of disciplines. Therefore, in the last few chapters, several genetic approaches to the study of aging are discussed: somatic cell genetics, immunogenetics, and behavioral genetics. As the goal of this volume is to present a comprehensive examination of the genetics of aging, most chapters are oriented toward general review of their respective areas. It is my hope that this volume will encourage clinical, biological, and behavioral investigators to turn their attention to the genetic aspects of aging as well as to employ genetic technology to obtain further insight into aging processes.

Brain Aging

A Critical Review of the Mechanism of Ageing in Alloys Based on the Aluminium-zinc-magnesium System

Biochemistry and Cell Biology of Ageing: Part II Clinical Science

Understanding and Mitigating Ageing in Nuclear Power Plants

Materials and Operational Aspects of Plant Life Management (PLIM)

Materials Ageing and Degradation in Light Water Reactors

INSTANT TOP 10 BESTSELLER *New York Times *USAToday *Washington Post *LA Times "Debunks the idea that aging inevitably brings infirmity and unhappiness and instead offers a trove of practical, evidence-based guidance for living longer and better." —Daniel H. Pink, author of When and Drive SUCCESSFUL AGING delivers powerful insights: • Debunking the myth that memory always declines with age • Confirming that "health span"—not "life span"—is what matters • Proving that sixty-plus years is a unique and newly recognized developmental stage • Recommending that people look forward to joy, as reminiscing doesn't promote health Levitin looks at the science behind what we all can learn from those who age joyously, as well as how to adapt our culture to take full advantage of older people's wisdom and experience. Throughout his exploration of what aging really means, using research from developmental neuroscience and the psychology of individual differences, Levitin reveals resilience strategies and practical, cognitive enhancing tricks everyone should do as they age. Successful Aging inspires a powerful new approach to how readers think about our final decades, and it will revolutionize the way we plan for old age as individuals, family members, and citizens within a society where the average life expectancy continues to rise.

A must-have professional reference for researchers and educators in psychology, sociology, anthropology, public health, genetics, medicine, and the biological sciences, this issue of the Annual Review of Gerontology and Geriatrics discusses how complex biological, behavioral,

and social systems interact to create and impact health. This knowledge is essential to maintaining positive health outcomes over the life span and across a variety of populations and settings. With contributions by leading world scientists, this trusted annual volume reviews the current literature and presents examples of how biological factors underlie behavioral factors to impact health in later life. It also offers methods for examining these complex systems of biology and behavior, and explores how social scientists use this information in their research. Key Topics: Genetic and environmental contributions to Alzheimer's disease and age-associated memory changes Vascular depression, including cardiovascular implications for mental health The impact of spirituality on health Family comorbidity and the family context as a source of health Stress and coping Exercise and oxidative damage

This book describes the role of trace elements in health and longevity, pursuing a biogerontological approach. It offers essential information on the impact of trace elements on molecular and physiological processes of aging, and on their impact on health in connection with aging. The major topics covered in its 11 chapters, each dedicated to a specific trace element or mineral, are: a) Role of the element in species longevity, b) Recommended intake for longevity in animal species and in the elderly, c) Deficiency and age-related disease, d) Excess/toxicity and age-related disease, and e) Interactions with drugs prescribed in the elderly. Clinical, animal and other laboratory models of interest in aging are included, which enable a more in-depth analysis to be made. The respective chapters are a mixture of overviews and more in-depth reviews in which the mechanisms of aging are described from the point of view of their specific interactions with trace elements and minerals.

The Age of Surveillance Capitalism

The History of the Office of Naval Research

A Life Course Perspective

Longevity, Metabolism, and Brain Aging