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Epigenetics and Human Health - Alexander Haslberger - 2011-08-24
After first introducing the concept of epigenetics, this handbook and ready reference provides an overview of the main research on epigenetics. It adopts a multidisciplinary approach, involving molecular biology, molecular epidemiology and nutritional science, with a special focus of the book is on disease prevention and treatment. Of interest to all healthcare-related professionals as well as nutritionists, and the medical community focusing on disease prevention.

Environmental Epigenetics - L. Joseph Su - 2015-05-18
This book examines the toxicological and health implications of environmental epigenetics and provides knowledge through an interdisciplinary approach. Included in this volume are chapters outlining various environmental risk factors such as phthalates and dietary components, life states such as pregnancy and ageing, hormonal and metabolic considerations and specific disease risks such as cancer cardiovascular diseases and other non-communicable diseases. Environmental Epigenetics imparts integrative knowledge of the science of epigenetics and the issues raised in environmental epidemiology. This book is intended to serve both as a reference compendium on environmental epigenetics for scientists in academia, industry and laboratories and as a textbook for graduate level environmental health courses. Environmental Epigenetics imparts integrative knowledge of the science of epigenetics and the issues raised in environmental epidemiology. This book is intended to serve both as a reference compendium on environmental epigenetics for scientists in academia, industry and laboratories and as a textbook for graduate level environmental health courses.
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**Epigenetics in Human Disease** - Trygve O. Tollefsbol - 2012

Epigenetics is one of the fastest growing fields of sciences, illuminating studies of human diseases by looking beyond genetic make-up and acknowledging that outside factors play a role in gene expression. The goal of this volume is to highlight those diseases or conditions for which we have advanced knowledge of epigenetic factors such as cancer, autoimmune disorders and aging as well as those that are yielding exciting breakthroughs in epigenetics such as diabetes, neurobiological disorders and cardiovascular disease. Where applicable, attempts are made to not only detail the role of epigenetics in the etiology, progression, diagnosis and prognosis of these diseases, but also novel epigenetic approaches to the treatment of these diseases. Chapters are also presented on human imprinting disorders, respiratory diseases, infectious diseases and gynecological and reproductive diseases. Since epigenetics plays a major role in the aging process, advances in the epigenetics of aging are highly relevant to many age-related human diseases. Therefore, this volume closes with chapters on aging epigenetics and breakthroughs that have been made to delay the aging process through epigenetic approaches. With its translational focus, this book will serve as valuable reference for both basic scientists and clinicians alike. Comprehensive coverage of fundamental and emergent science and clinical usage Side-by-side coverage of the basis of epigenetic diseases and their treatments Evaluation of recent epigenetic clinical breakthroughs

**The Epigenome and Developmental Origins of Health and Disease** - Cheryl S Rosenfeld - 2015-10-10

The Epigenome and Developmental Origins of Health and Disease synthesizes the existing knowledge on how the in utero environment could be the most important environment in shaping later risk for various diseases or to conversely promote the health of the offspring. The book mines the existing literature from a variety of disciplines from toxicology to nutrition to epigenetics to reveal how contrasting maternal in utero environmental changes might be leading to epigenetic convergence and the resulting deleterious phenotypic and physiological effects in our offspring. It is increasingly becoming apparent that even subtle changes in the mother’s diet, stress, and exposure to low concentrations of toxic chemicals at levels deemed safe by the EPA and FDA, such as endocrine disrupting compounds (EDC), can dramatically impact the health of our children, possibly leading
to metabolic, cardiovascular, immunological, neurobehavioral disorders, and increased risk for cancer to list but a few examples. Informs how everyday choices pregnant women make can impact child development. Ties together how in utero environmental changes may be inducing epigenetic changes in the offspring leading to overlapping phenotypes regardless of the initial insult (toxic, nutrition, or stress). Includes a boxed-in area in each chapter for further references and resources to keep up with the field.

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**Epigenetics** - Benedikt Hallgrimsson Ph.D. - 2011-04-11

Illuminating the processes and patterns that link genotype to phenotype, epigenetics seeks to explain features, characters, and developmental mechanisms that can only be understood in terms of interactions that arise above the level of the gene. With chapters written by leading authorities, this volume offers a broad integrative survey of epigenetics. Approaching this complex subject from a variety of perspectives, it presents a broad, historically grounded view that demonstrates the utility of this approach for understanding complex biological systems in development, disease, and evolution. Chapters cover such topics as morphogenesis and organ formation, conceptual foundations, and cell differentiation, and together demonstrate that the integration of epigenetics into mainstream developmental biology is essential for answering fundamental questions about how phenotypic traits are produced.

**DNA Methylation and Complex Human Disease** - Michel Neidhart - 2015-08-11

DNA Methylation and Complex Human Disease reviews the possibilities of methyl-group-based epigenetic biomarkers of major diseases, tailored epigenetic therapies, and the future uses of high-throughput methylome technologies. This volume includes many pertinent advances in disease-bearing research, including obesity, type II diabetes, schizophrenia, and autoimmunity. DNA methylation is also discussed as a plasma and serum test for non-invasive screening, diagnostic and prognostic tests, as compared to biopsy-driven gene expression analysis, factors which have led to the use of DNA methylation as a potential tool for determining cancer risk, and diagnosis between benign and malignant disease. Therapies are at the heart of this volume and the possibilities of DNA demethylation. In cancer, unlike genetic mutations, DNA methylation and histone
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Epigenetic and Mitochondrial Biomarkers Linking Air Pollution and Temperature on Human Health: The Normative Aging Study - Cheng Peng - 2016
In Chapter III, we explored short-term changes in daily mean and daily standard deviation (SD) (variability) of ambient air temperature with blood mtDNA lesions in The Normative Aging Study. We observed short-term increases in mean air temperature were associated with higher mtDNA lesions in elderly adults, supporting the hypothesis that changes in meteorological conditions may induce pathophysiological responses among susceptible populations.

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Epigenetic Epidemiology - Karin B. Michels - 2012-01-02
The exploding field of epigenetics is challenging the dogma of traditional Mendelian inheritance. Epigenetics plays an important role in shaping who we are and contributes to our prospects of health and disease. While early epigenetic research focused on plant and animal models and in vitro experiments, population-based epidemiologic studies increasingly incorporate epigenetic components. The relevance of epigenetic marks, such as DNA methylation, genomic imprinting, and histone modification for disease causation has yet to be fully explored. This book covers the basic concepts of epigenetic epidemiology, discusses challenges in study design, analysis, and interpretation, epigenetic laboratory techniques, the influence of age and environmental factors on shaping the epigenome, the role of epigenetics in the developmental origins hypothesis, and provides the state of the art on the epigenetic epidemiology of various health conditions including childhood syndromes, cancer, infectious diseases, inflammation and rheumatoid arthritis, asthma, autism and other neurodevelopmental...
disorders, psychiatric disorders, diabetes, obesity and metabolic disorders, and atherosclerosis. With contributions from: Peter Jones, Jean-Pierre Issa, Gavin Kelsey, Robert Waterland, and many other experts in epigenetics!

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**Biodiversity and Human Health** - Francesca Grifo - 1997-02
Biodiversity and Human Health brings together leading thinkers on the global environment and biomedicine to explore the human health consequences of the loss of biological diversity.

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**Epigenetics in Society** - Windsor Epigenetics Study Group - 2015-10-26
This is a book written by students of diverse disciplines, and intended for students and educated lay people. We intend this book to serve several functions. First, we want to make the field of epigenetics accessible to lay readers. Second, and more importantly, we want to excite further interest and concern regarding the social, ethical, legal, health, and policy implications that this field will have for all arenas of our lives. Third, we want to arm our readers with knowledge and wariness so that they can understand and critique the nuanced debates that will inevitably arise when costs and benefits must be weighed: while the effects of epigenetics upon us as individuals may be subtle, the demographic implications and costs are huge.

**Examining the Causal Relationship Between Genes, Epigenetics, and Human Health** - Wambuh, Oscar J. - 2019-03-22
For as much as we know about DNA and gene expression, many more mysteries remain to be solved. Epigenetics and epigenomics seek to study heritable modifications in gene expression that do not involve underlying DNA sequences to further human health changes. Examining the Causal Relationship Between Genes, Epigenetics, and Human Health provides innovative research methods and applications of chemical activation or deactivation of genes without altering the original DNA sequence. While highlighting topics including gene expression, personalized medicine, and public policy, this book is ideal for researchers, geneticists, biologists, medical professionals, students, and academics seeking current research on the expanding fields of genomics, epigenomics, proteomics, pharmacogenomics, and genome-wide association studies.

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Mattering - Victoria Pitts-Taylor - 2016-08-30
Feminists today are re-imagining nature, biology, and matter in feminist thought and critically addressing new developments in biology, physics, neuroscience, epigenetics and other scientific disciplines. Mattering, edited by noted feminist scholar Victoria Pitts-Taylor, presents contemporary feminist perspectives on the materialist or ‘naturalizing’ turn in feminist theory, and also represents the newest wave of feminist engagement with science. The volume addresses the relationship between human corporeality and subjectivity, questions and redefines the boundaries of human/non-human and nature/culture, elaborates on the entanglements of matter, knowledge, and practice, and addresses biological materialization as a complex and open process. This volume insists that feminist theory can take matter and biology seriously while also accounting for power, taking materialism as a point of departure to rethink key feminist issues. The contributors, an international group of feminist theorists, scientists and scholars, apply concepts in contemporary materialist feminism to examine an array of topics in science, biotechnology, biopolitics, and bioethics. These include neuralplasticity and the brain-machine interface; the use of biometrical identification technologies for transnational border control; epigenetics and the intergenerational transmission of the health effects of social stigma; ADHD and neuropharmacology; and randomized controlled trials of HIV drugs. A unique and interdisciplinary collection, Mattering presents in grounded, concrete terms the need for rethinking disciplinary boundaries and research methodologies in light of the shifts in feminist theorizing and transformations in the sciences.

Handbook of Epigenetics - Trygve Tollefsbol - 2017-07-10
Handbook of Epigenetics: The New Molecular and Medical Genetics, Second Edition, provides a comprehensive analysis of epigenetics, from basic biology, to clinical application. Epigenetics is considered by many to be the new genetics in that many biological phenomena are controlled, not through gene mutations, but rather through reversible and heritable epigenetic processes. These epigenetic processes range from DNA methylation to prions. The biological processes impacted by epigenetics are vast and encompass effects in lower organisms and humans that include tissue and organ regeneration, X-chromosome inactivation, stem cell...
differentiation, genomic imprinting, and aging. The first edition of this important work received excellent reviews; the second edition continues its comprehensive coverage adding more current research and new topics based on customer and reader reviews, including new discoveries, approved therapeutics, and clinical trials. From molecular mechanisms and epigenetic technology, to discoveries in human disease and clinical epigenetics, the nature and applications of the science is presented for those with interests ranging from the fundamental basis of epigenetics, to therapeutic interventions for epigenetic-based disorders. Timely and comprehensive collection of fully up-to-date reviews on epigenetics that are organized into one volume and written by leading figures in the field Covers the latest advances in many different areas of epigenetics, ranging from basic aspects, to technologies, to clinical medicine Written at a verbal and technical level that can be understood by scientists and college students Updated to include new epigenetic discoveries, newly approved therapeutics, and clinical trials

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**Developmental Origins of Health and Disease** - Peter Gluckman - 2006-04-20

This landmark publication provides the first definitive account of how and why subtle influences on the fetus and during early life can have such profound consequences for adult health and diseases. Although the epidemiological evidence for this link has long proved compelling, it is only much more recently that the scientific and physiological basis has begun to be studied in depth and fully understood. The compilation, written by many of the world's leading experts in this exciting field, summarizes these scientific and clinical advances.

**Epigenetics of Aging** - Trygve O. Tollefsbol - 2009-11-11

Recent studies have indicated that epigenetic processes may play a major role in both cellular and organismal aging. These epigenetic processes include not only DNA methylation and histone modifications, but also extend to many other epigenetic mediators such as the polycomb group proteins, chromosomal position effects, and noncoding RNA. The topics of this book range from fundamental changes in DNA methylation in aging to the most recent research on intervention into epigenetic modifications to modulate the aging process. The major topics of epigenetics and aging covered in this book are: 1) DNA methylation and histone modifications in aging; 2) Other
Epigenetic processes and aging; 3) Impact of epigenetics on aging; 4) Epigenetics of age-related diseases; 5) Epigenetic interventions and aging; and 6) Future directions in epigenetic aging research. The most studied of epigenetic processes, DNA methylation, has been associated with cellular aging and aging of organisms for many years. It is now apparent that both global and gene-specific alterations occur not only in DNA methylation during aging, but also in several histone alterations. Many epigenetic alterations can have an impact on aging processes such as stem cell aging, control of telomerase, modifications of telomeres, and epigenetic drift can impact the aging process as evident in the recent studies of aging monozygotic twins. Numerous age-related diseases are affected by epigenetic mechanisms. For example, recent studies have shown that DNA methylation is altered in Alzheimer’s disease and autoimmunity. Other prevalent diseases that have been associated with age-related epigenetic changes include cancer and diabetes. Paternal age and epigenetic changes appear to have an effect on schizophrenia and epigenetic silencing has been associated with several of the progeroid syndromes of premature aging. Moreover, the impact of dietary or drug intervention into epigenetic processes as they affect normal aging or age-related diseases is becoming increasingly feasible.

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**Blinded by Science** - Wastell, David - 2017-03-15
This timely book critically examines the capabilities and limitations of new areas of biology, especially epigenetics and neuroscience, that are used as powerful arguments for developing social policy in a particular direction, exploring their implications for policy and practice.

**Gene Regulation, Epigenetics and Hormone Signaling** - Subhrangsu S. Mandal - 2017-10-23
The first of its kind, this reference gives a comprehensive but concise introduction to epigenetics before covering the many interactions between hormone regulation and epigenetics at all levels. The contents are very well structured with no overlaps between chapters, and each one features supplementary material for use in presentations. Throughout, major emphasis is placed on pathological conditions, aiming at the many physiologists and developmental biologists who are familiar with the importance and mechanisms of hormone regulation but have a limited background in epigenetics.
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**Epigenetic Gene Regulation** - Dana Dolinoy Cipolla - 2007
Metastable epialleles are alleles that are variably expressed in genetically identical individuals due to epigenetic modifications established during early development. Herein, we report the first characterization of histone modifications within the Avy metastable epiallele. Yellow mice, which are hypomethylated at Avy, also display enrichment of activating histone acetylation modifications. Pseudoagouti mice, in which Avy hypermethylation is thought to silence ectopic expression, exhibit enrichment of H4K20 methylation, indicating that DNA methylation acts in concert with histone modifications to affect variable metastable epiallele expression. To characterize additional metastable epialleles within the mouse genome, we utilized genome-wide expression arrays and identified several candidate genes displaying the 'Agouti Expression Fingerprint,' defined as large variability in gene expression among individuals concomitant with a low variability in gene expression among tissues in the three germ layers. The elucidation of the epigenetic basis of gene-environment interactions as well as the genome-wide identification of metastable epialleles will strengthen human health risk assessment and shape diagnostic and therapeutic strategies for disease.

**Epigenetics in Psychiatry** - Jacob Peedicayil - 2021-08-16
Epigenetics in Psychiatry, Second Edition covers all major areas of psychiatry in which extensive epigenetic research has been performed, fully encompassing a diverse and maturing field, including drug addiction, bipolar disorder, epidemiology, cognitive disorders, and the uses of putative epigenetic-based psychotropic drugs. Uniquely, each chapter correlates epigenetics with relevant advances across genomics, transcriptomics, and proteomics. The book acts as a catalyst for further research in this growing area of psychiatry. This new edition has been fully revised to address recent advances in epigenetic understanding of psychiatric disorders, evoking data consortia (e.g., CommonMind, ATAC-seq), single cell analysis, and epigenome-wide association studies to empower new research. The book also examines epigenetic effects of the microbiome on psychiatric disorders, and the use of neuroimaging in studying the role of epigenetic mechanisms of gene expression. Ongoing advances in epigenetic therapy are explored in-depth. Fully revised to discuss new areas of research across neuronal stem cells, cognitive disorders, and transgenerational epigenetics in psychiatric disease Relates broad advances in psychiatric epigenetics to a modern understanding of the genome, transcriptome, and proteins Catalyzes knowledge discovery in both basic epigenetic biology and epigenetic targets for drug discovery Provides guidance in research methods and protocols, as well how to employ data from consortia, single cell analysis, and epigenome-wide association studies (EWAS) Features chapter contributions from international leaders in the field
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Epigenetics and Neuroendocrinology - Dietmar Spengler - 2016-04-02
The field of neuroendocrinology has extended from the initial interest in the hypothalamic control of pituitary secretion to embrace multiple reciprocal interactions between the central nervous system and endocrine systems in the coordination of homeostasis and various physiological responses from adaptation to disease. Most recently, epigenetic mechanisms were recognized for their role in the development of the neuroendocrine axes as well as in the mediation of gene-environment interactions in stress-related psychiatry disorders.

Telomere - Marcelo Larramendy - 2016-11-23
This book, Telomere - A Complex End of a Chromosome, is organized into nine chapters containing the latest aspects of the current knowledge about interactions between the central nervous system and endocrine systems in the coordination of homeostasis and various physiological responses from adaptation to disease. Most recently, epigenetic mechanisms were recognized for their role in the development of the neuroendocrine axes as well as in the mediation of gene-environment interactions in stress-related psychiatry disorders.

The Genetics of Cancer - B.A. Ponder - 2012-12-06
It has been recognized for almost 200 years that certain families seem to inherit cancer. It is only in the past decade, however, that molecular genetics and epidemiology have combined to define the role of inheritance in cancer more clearly, and to identify some of the genes involved. The causative genes can be tracked through cancer-prone families via genetic linkage and positional cloning. Several of the genes discovered have subsequently been proved to play critical roles in normal growth and development. There are also implications for the families themselves in terms of genetic testing with its attendant dilemmas, if it is not clear that useful action will result. The chapters in The Genetics of Cancer illustrate what has already been achieved and take a critical look at the future directions of this research and its potential clinical applications.

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Chemistry, Health and Environment - Olov Sterner - 2010-06-15
This second edition of a successful title bridging toxicology and environmental chemistry adopts a unique approach that 'follows' chemicals on a molecular level, from the environment through the different uptake mechanisms into the body, to the toxic effect. Along the way, this textbook explains the different routes of degradation and metabolism of the different classes of chemicals, linking general chemical properties to their toxicological equivalents. All the chapters have been thoroughly updated and the contents significantly expanded, including for example new chapters on pesticides, food chemicals and pharmaceuticals, as well as sections discussing endocrine disruptors and carcinogenicity assays. This is an essential text for a wide audience ranging from pharmacologists to environmental chemists and toxicologists.

Handbook of Life Course Health Development - Neal Halfon - 2017-11-20
This book is open access under a CC BY 4.0 license. This handbook synthesizes and analyzes the growing knowledge base on life course health development (LCHD) from the prenatal period through emerging adulthood, with implications for clinical practice and public health. It presents LCHD as an innovative field with a sound theoretical framework for understanding wellness and disease from a lifespan perspective, replacing previous medical, biopsychosocial, and early genomic models of health. Interdisciplinary chapters discuss major health concerns (diabetes, obesity), important less-studied conditions (hearing, kidney health), and large-scale issues (nutrition, adversity) from a lifespan viewpoint. In addition, chapters address methodological approaches and challenges by analyzing existing measures, studies, and surveys. The book concludes with the editors’ research agenda that proposes priorities for future LCHD research and its application to health care practice and health policy. Topics featured in the Handbook include: The prenatal period and its effect on child obesity and metabolic outcomes. Pregnancy complications and their effect on women’s cardiovascular health. A multi-level approach for obesity prevention in children. Application of the LCHD framework to autism spectrum disorder. Socioeconomic disadvantage and its influence on health development across
the lifespan. The importance of nutrition to optimal health development across the lifespan. The Handbook of Life Course Health Development is a must-have resource for researchers, clinicians/professionals, and graduate students in developmental psychology/science; maternal and child health; social work; health economics; educational policy and politics; and medical law as well as many interrelated subdisciplines in psychology, medicine, public health, mental health, education, social welfare, economics, sociology, and law.

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**Reducing Environmental Cancer Risk** - Suzanne H. Reuben - 2010-10
Though overall cancer incidence and mortality have continued to decline in recent years, cancer continues to devastate the lives of far too many Americans. In 2009 alone, 1.5 million American men, women, and children were diagnosed with cancer, and 562,000 died from the disease. There is a growing body of evidence linking environmental exposures to cancer. The Pres. Cancer Panel dedicated its 2008-2009 activities to examining the impact of environmental factors on cancer risk. The Panel considered industrial, occupational, and agricultural exposures as well as exposures related to medical practice, military activities, modern lifestyles, and natural sources. This report presents the Panel’s recommend. to mitigate or eliminate these barriers. Illus.

**Epigenetics and Neuroendocrinology** - Dietmar Spengler - 2016-06-29
The field of neuroendocrinology has extended from the initial interest in the hypothalamic control of pituitary secretion to embrace multiple reciprocal interactions between the central nervous system (CNS) and endocrine systems in the coordination of homeostasis and various physiological responses from adaptation to disease. Most recently, epigenetic mechanisms were recognized for their role in the development of the neuroendocrine axes as well as in the mediation of gene-environment interactions in stress-related psychiatry disorders.

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**Nutrition, Epigenetics and Health** - Burdge Graham - 2016-10-07
Epigenetics is emerging as an important factor in risk of diseases of global importance including obesity, cardiovascular disease and cancer. Unlike gene polymorphisms which have been the focus of understanding the role of inherited disease susceptibility for some time, epigenetic can be modified by environmental factors, in particular nutrition. Thus research into the role of epigenetics in disease has substantial potential for explaining the impact of the environmental factors such as diet on disease risk. Since epigenetic processes can be modified by nutrition, it may be possible to modify inappropriate epigenetic marks by nutritional interventions to reduce disease risk. This book will explore current understanding of the interaction between nutrition, epigenetics and disease risk, will place this knowledge in the context of global health and discuss the ethical implications of this research.

**Your Vitamins are Obsolete: The Vitamer Revolution: A Program for Healthy Living and Healthy Longevity** - Sheldon Zablow, M.D. - 2021-05-21
Did you know the synthetic B-vitamins found in supplements cannot be absorbed well or easily converted into the bioactive forms our cells use? Even other vitamins can’t work well if there is not enough of the naturally occurring B forms called vitamers. For example, without B vitamers, taking vitamin D won’t prevent osteoporosis. Learn how the naturally occurring vitamers DO work and why, and start on your pathway to healthy living and longevity today!

**The Impact of Caffeine and Coffee on Human Health** - Christina Bamia - 2019-12-12
The purpose of this Special Issue is to provide a thorough and up-to-date presentation of research investigating the impact of coffee and/or caffeine intake on various health outcomes. We welcome the submission of original research articles and/or systematic Reviews/meta-analyses focusing on several aspects of coffee/caffeine intake in relation to human health. Areas of interest include, but are not limited to, the following topics: - Human clinical trials of coffee or caffeine use in relation to disease or intermediate phenotypes. - Epidemiological studies of habitual coffee or caffeine intake in relation to human health, among the general public, as well as, among special populations (i.e., children, pregnant women, diabetics, cancer patients, hypertensives, etc.) - Mechanisms of action of nutrients and other bioactive components of coffee/caffeine. - Studies integrating genetic or physiological markers of coffee/caffeine intake to investigations of coffee and health.
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Nutrition and Epigenetics - Emily Ho - 2014-10-16
Nutrition and Epigenetics presents new information on the action of diet and nutritional determinants in regulating the epigenetic control of gene expression in health and disease. Each chapter gives a unique perspective on a different nutritional or dietary component or group of components, and reveals novel mechanisms by which dietary factors modulate the epigenome and affect development processes, chronic disease, and the aging process. This pivotal text: Documents the epigenetic effect of antioxidants and their health benefits Adds to the understanding of mechanisms leading to disease susceptibility and healthy aging Illustrates that the epigenetic origins of disease occur in early (fetal) development Synthesizes the data regarding nutrient and epigenomic interactions Nutrition and Epigenetics highlights the interactions among nutrients, epigenetics, and health, providing an essential resource for scientists and clinical researchers interested in nutrition, aging, and metabolic diseases.

Primarily intended for DNP and PhD students in nursing and health care who are expected to design research to identify health-related problems and solutions, this book focuses on the concepts, theories and processes of how social determinants affect the health of populations. Using specific social determinants as an organizing framework, it presents ample scientific evidence from health and social disciplines of the universal processes that produce the social patterning of health inequities. This book is organized into three major parts, beginning with the social pathways to health vulnerability, followed by research methods and subsequently frameworks for action. The methods section provides selected research approaches suitable for studying the impact of social variables on population health, as well as the outcomes of multilevel interventions. Each chapter provides an in-depth presentation of relevant theoretical knowledge and research-based examples of work conducted in the area. The book addresses the specific implications for health professional leaders such as nurses or health policy makers, highlighting their role in achieving macrosocial changes to promote health among specific vulnerable populations. Both of the book’s editors are prominent and highly respected scholars in their field. The team of authors is highly multidisciplinary, including experts from the fields of medicine, public health, education and epidemiology who have conducted research on the social determinants of population health. Combining their varied perspectives, this book offers a valuable resource for graduate students (PhD, MD, DNP, MSN, etc.), faculty, researchers and clinicians in health professions.
helping researchers in their efforts prevent and treat a variety of chronic diseases tied to environmental exposures. Offers a thorough discussion of the environmental factors influencing epigenetic mechanisms in early and late life, and in transgenerational inheritance Examines both animal model and human population-based research in environmental epigenetics, highlighting developmental windows of vulnerability to epigenetic modification Features contributions from international experts in the field

Environmental Epigenetics in Toxicology and Public Health - Rebecca Fry - 2020-10-23
Environmental Epigenetics in Toxicology and Public Health provides in-depth discussions of the suite of complex environmental factors shown to impact epigenetic components within the cell, as well as evidence that these epigenetic modifications are tied to early and later life health effects. This book offers a translational research perspective, highlighting both in vivo and human population-based evidence for ties between the environment, the epigenome, and health outcomes, with an emphasis on evidence for transgenerational effects of exposures, as well as developmental windows of susceptibility to environmentally-linked epigenetic effects. This volume in the Translational Epigenetics series aides in the development of new therapeutic options meant to reverse inappropriate epigenetic alterations, helping researchers in their efforts prevent and treat a variety of chronic diseases tied to environmental exposures. Offers a thorough discussion of the environmental factors influencing epigenetic mechanisms in early and late life, and in transgenerational inheritance Examines both animal model and human population-based research in environmental epigenetics, highlighting developmental windows of vulnerability to epigenetic modification Features contributions from international experts in the field

Breathing: Violence In, Peace Out - Ivana Milojevic - 2013-10-01
An investigation into the long-term impact of transgenerational trauma and the possibilities for healing, this book explores the links between personal histories and world events and helps us to understand life’s dualities: violence and peace, self and other, stability and change, slavery and freedom. Author Ivana Milojevic asks How does violence change us? Is it possible to change the inner landscape of one’s thinking in the midst of pain and suffering? and If this is our past, how might our future be different? Oscillating between two voices, Milojevic journeys between the personal...
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Precision Public Health - Tarun Weeramanthri - 2018-06-25
Precision Public Health is a new and rapidly evolving field, that examines the application of new technologies to public health policy and practice. It draws on a broad range of disciplines including genomics, spatial data, data linkage, epidemiology, health informatics, big data, predictive analytics and communications. The hope is that these new technologies will strengthen preventive health, improve access to health care, and reach disadvantaged populations in all areas of the world. But what are the downsides and what are the risks, and how can we ensure the benefits flow to those population groups most in need, rather than simply to those individuals who can afford to pay? This is the first collection of theoretical frameworks, analyses of empirical data, and case studies to be assembled on this topic, published to stimulate debate and promote collaborative work.

The Epigenetics Revolution - Nessa Carey - 2012-03-06
Epigenetics can potentially revolutionize our understanding of the structure and behavior of biological life on Earth. It explains why mapping an organism’s genetic code is not enough to determine how it develops or acts and shows how nurture combines with nature to engineer biological diversity. Surveying the twenty-year history of the field while also highlighting its latest findings and innovations, this volume provides a readily understandable introduction to the foundations of epigenetics. Nessa Carey, a leading epigenetics researcher, connects the field’s arguments to such diverse phenomena as how ants and queen bees control their colonies; why tortoiseshell cats are always female; why some plants need cold weather before they can flower; and how our bodies age and develop disease. Reaching beyond biology, epigenetics now informs work on drug addiction, the long-term effects of famine, and the physical and psychological consequences of childhood trauma. Carey concludes with a discussion of the future directions for this research and its ability to improve human health and well-being.
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The view “It’s all in our genes and we cannot change it” developed in the past 150 years since Gregor Mendel’s experiments with flowering pea plants. However, there is a special form of genetics, referred to as epigenetics, which does not involve any change of our genes but regulates how and when they are used. In the cell nucleus our genes are packed into chromatin, which is a complex of histone proteins and genomic DNA, representing the molecular basis of epigenetics. Our environment and lifestyle decisions influence the epigenetics of our cells and organs, i.e. epigenetics changes dynamically throughout our whole life. Thus, we have the chance to change our epigenetics in a positive as well as negative way and present the onset of diseases, such a type 2 diabetes or cancer. This textbook provides a molecular explanation how our genome is connected with environmental signals. It outlines that epigenetic programming is a learning process that results in epigenetic memory in each of the cells of our body. The central importance of epigenetics during embryogenesis and cellular differentiation as well as in the process of aging and the risk for the development of cancer are discussed. Moreover, the role of the epigenome as a molecular storage of cellular events not only in the brain but also in metabolic organs and in the immune system is described. The book represents an updated but simplified version of our textbook “Human Epigenomics” (ISBN 978-981-10-7614-8). The first five chapters explain the molecular basis of epigenetics, while the following seven chapters provide examples for the impact of epigenetics in human health and disease.

**Stress: Genetics, Epigenetics and Genomics** - George Fink - 2020-10-24
This fourth volume in the Handbook of Stress series, Stress: Genetics, Epigenetics and Genomics, deals with the influence that genetics, epigenetics, and genomics have on the effects of and responses to stress. Chapters refer to epigenetic mechanisms that involve DNA methylation, histone modification, and/or noncoding RNA-associated gene activation or silencing. There is also coverage of epigenetic mechanisms in stress-related transgenerational transmission of characteristics, and how these may help explain heritability in some complex human diseases. The Handbook of Stress series, comprised of self-contained volumes that each focus on a specific stress area, covers the significant advances made since the publication of Elsevier’s Encyclopedia of Stress (2000 and 2007). Volume 4 is ideal for graduate students, post-doctoral fellows, faculty and clinicians.
interested in stress genetics, epigenetics and genomics involved in neuroendocrinology, neuroscience, biomedicine, endocrinology, psychology, psychiatry and the social sciences. Articles carefully selected by eminent stress researchers and prepared by contributors representing outstanding scholarship in the field, with each chapter fully vetted for reliable expert knowledge. Richly illustrated with explanatory figures and tables. Each chapter includes a boxed "Key points call out section." Affordably priced, self-contained volume for readers specifically interested in stress genetics and epigenetics, removing the need to purchase the whole Handbook series.

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Hoʻi Hou Ka Mauli Ola - Winona K. Mesiona Lee - 2017-05-31
This pioneering collection highlights the historic, groundbreaking, and fascinating work done by doctors, researchers, and healthcare providers to improve the life of Native Hawaiians and Pacific Islanders. The relevance of their work impacts all of us regardless of ethnicity because the discoveries made in the search for solutions to health problems, cures to diseases, and improvements to healthcare benefit all who call Hawaiʻi, as well as the broader Pacific, home. The majority of the thirty-three contributors are affiliated with the Department of Native Hawaiian Health of the John A. Burns School of Medicine at the University of Hawaiʻi at Mānoa and represent many disciplines, strategies, and programs whose research, findings, and projects are built on the contributions of pioneers in medicine and healthcare in Hawaiʻi. As such, this book is dedicated to the late Richard Kekuni Blaisdell and includes an interview with him, bringing to the fore his essential voice on Native Hawaiian health. Mauli means life, heart, spirit, our essential nature. Ola means well-being, healthy. “Hoʻi hou ka mauli ola,” or, bringing back the state of vibrant health, is the chief objective and the passion of the contributors. In addition to interviews, the volume includes historical information, personal narratives, mele oli, research findings, and descriptions of community programs.

Genes, Behavior, and the Social Environment - Institute of Medicine -
Over the past century, we have made great strides in reducing rates of disease and enhancing people's general health. Public health measures such as sanitation, improved hygiene, and vaccines; reduced hazards in the workplace; new drugs and clinical procedures; and, more recently, a growing understanding of the human genome have each played a role in extending the duration and raising the quality of human life. But research conducted over the past few decades shows us that this progress, much of which was based on investigating one causative factor at a time—often, through a single discipline or by a narrow range of practitioners—can only go so far. Genes, Behavior, and the Social Environment examines a number of well-described gene-environment interactions, reviews the state of the science in researching such interactions, and recommends priorities not only for research itself but also for its workforce, resource, and infrastructural needs.

Genes, Behavior, and the Social Environment - Institute of Medicine - 2006-12-07
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The Oxford Handbook of Public Health Ethics - Anna C. Mastroianni - 2019-07-23
Natural disasters and cholera outbreaks. Ebola, SARS, and concerns over pandemic flu. HIV and AIDS. E. coli outbreaks from contaminated produce and fast foods. Threats of bioterrorism. Contamination of compounded drugs. Vaccination refusals and outbreaks of preventable diseases. These are just some of the headlines from the last 30-plus years highlighting the essential roles and responsibilities of public health, all of which come with ethical issues and the responsibilities they create. Public health has achieved extraordinary successes. And yet these successes also bring with them ethical tension. Not all public health successes are equally distributed in the population; extraordinary health disparities between rich and poor still exist. The most successful public health programs sometimes rely on policies that, while improving public health conditions, also limit individual rights. Public health practitioners and policymakers face these and other questions of ethics routinely in their work, and they must navigate their sometimes competing responsibilities to the health of the public with other important societal values such as privacy, autonomy, and prevailing cultural norms. This Oxford Handbook provides a sweeping and comprehensive review of the current state of public health ethics, addressing these and numerous other questions. Taking account of the wide range of topics under the umbrella of public health and the ethical issues raised by them, this volume is organized into fifteen sections. It begins with two sections that discuss the conceptual foundations, ethical tensions, and ethical frameworks of and for public health and how public health does its work. The thirteen sections that follow examine the application of public health ethics considerations and approaches across a broad range of public health topics. While chapters are organized into topical sections, each chapter is designed to serve as a standalone contribution. The book includes 73 chapters covering many topics from varying perspectives, a recognition of the diversity of the issues that define public health ethics in the U.S. and globally. This Handbook is an authoritative and indispensable guide to the state of public health ethics today.

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