



This book tells the story behind one of the most difficult--and ultimately rewarding--scientific endeavors in modern history: a multibillion-dollar international undertaking that will revolutionize our understanding of the human body. Exons, Introns, and Talking Genes is a scientist's view of the Human Genome Project. Wills explains the science as no layperson could, telling the story of the scientists involved in the project, the biomedical breakthroughs that led up to it, and how the new information it generates will change the way we understand and treat disease. Ever since Watson and Crick discovered the structure of DNA, scientists have been trying to "read" the human genetic code locked in the millions and millions of bases that make up DNA. But over the past thirty years, as many new questions have been raised as answered. Why, for example, do we carry long, repeating stretches of DNA that play no discernible role in heredity and that are currently referred to simply as "junk DNA"? Is it really true that much of human DNA is actually viral DNA-remnants, that is, of past infections? And why is most of the DNA that codes for genes quickly removed as useless "introns," leaving only the tiny but key "exons"? When completed in the next century, the Human Genome Project will have determined every gene sequence in the human body, illuminating for scientists some of the outstanding problems in human biology: the genesis of cancer, how embryos and fetuses develop, the mechanisms of aging, and the origin of mutations.

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The merging of different basic and clinical science disciplines towards the common goal of fighting against cancer has long ago called for the establishment of a comprehensive reference source both as a tool to close the language gap between clinical and basic science investigators and as a platform of information for students and informed laymen alike. The Encyclopedia of Cancer provides rapid access to focused information on all topics of cancer research for clinicians, research scientists and advanced students. Given the overwhelming success of the Second Edition, which appeared in 2009, and fast recent development in the different fields of cancer research, it has been decided to publish a third fully revised and expanded edition, following the principal concept of the first edition that has proven so successful. Recent developments are seeing a dynamic progress in basic and clinical cancer science, with translational research increasingly becoming a new paradigm in cancer research. In particular, new approaches to both Personalized Cancer Medicine and Targeted Therapies have made promising progress. While the Second Edition featured scholarly contributions from approximately 1.000 scientists/clinicians in four Volumes, the Third Edition includes 1.300 contributors in 7 Volumes with an A-Z format of approx. 7000 entries. It provides definitions of common acronyms and short definitions of related terms and processes in the form of keyword entries. In addition, there are detailed essays, which provide comprehensive information on syndromes, genes and molecules, and processes and methods. Each essay is well-structured, with extensive cross-referencing between all entries. In the Third Edition, topical Essays present a

comprehensive picture of major cancers, such as Breast Cancer, Colorectal Cancer, Prostate Cancer, Ovarian Cancer, Renal Cancer, Lung Cancer, and Hematological Malignancies, Leukemias and Lymphomas. For each of these cancers, different authoritative Essays are included that cover topics ranging from Pathology, to Clinical Oncology and Targeted Therapies. This new feature should meet the expectance that a wide community has towards a major cancer reference works. The Encyclopedia of Cancer will be accessible both in print and online, and this information source should be of value to both the clinical and basic scientific community as well as to the public.

This book provides a framework for computational researchers studying the basics of cancer through comparative analyses of omic data. It discusses how key cancer pathways can be analyzed and discovered to derive new insights into the disease and identifies diagnostic and prognostic markers for cancer. Chapters explain the basic cancer biology and how cancer develops, including the many potential survival routes. The examination of gene-expression patterns uncovers commonalities across multiple cancers and specific characteristics of individual cancer types. The authors also treat cancer as an evolving complex system, explore future case studies, and summarize the essential online data sources. Cancer Bioinformatics is designed for practitioners and researchers working in cancer research and bioinformatics. It is also suitable as a secondary textbook for advanced-level students studying computer science, biostatistics or biomedicine.

This volume includes contributions from the speakers of the Second IMD Congress (September 10-15, 2007; Moscow, Russia) who were eager to share some of the academic and clinical enthusiasm that defines the IMD meetings. The goal of the International Immune-Mediated Diseases: From Theory to Therapy (IMD) Congress is to bring the world's best immunologists and clinicians to Moscow.

Semantic Web Services for Web Databases introduces an end-to-end framework for querying Web databases using novel Web service querying techniques. This includes a detailed framework for the query infrastructure for Web databases and services. Case studies are covered in the last section of this book. Semantic Web Services For Web Databases is designed for practitioners and researchers focused on service-oriented computing and Web databases.

Identifying Typologies of Breast Cancer Patients Based on Multiple Individual and Contextual Factors for Timely Treatment Initiation Focusing on deep conflicts between the medical establishment and the working class, Martha Balshem chronicles a health education project in "Tannerstown," a pseudonym for a blue-collar neighborhood in northeast Philadelphia.

Rationale: Breast cancer is the most commonly diagnosed cancer, excluding skin cancers, and is the second leading cause of cancer death among women in the United States. Despite advancements in screening, early detection, and cancer treatments, not all women have benefited equally. Racial and ethnic minorities, particularly African American women, and those of low income have higher breast cancer mortality rates compared to the general population. Previous research has identified a number of demographic (e.g., race/ethnicity, age, health insurance, income), medical (e.g., comorbidities with other illnesses, family medical history), environmental (e.g., geographic area), and health system (e.g., type of cancer-related services available) factors associated with breast cancer disparities. However, these factors

have largely been examined individually, and no study has comprehensively evaluated how multiple individual and contextual factors impact breast cancer outcomes. Therefore, this dissertation project had two primary aims: 1) to identify distinct subgroups of breast cancer patients based on demographic, medical, environmental, and health system factors that have been shown to influence timeliness of breast cancer care, and 2) to examine differences among emergent classes in timely initiation of breast cancer treatment. Design: The proposed study used archival data from the control arm of the Patient Navigation Research Project (PNRP), a five-year 10-site clinical trial of adult patients from medically underserved populations with an abnormal cancer screening or a new diagnosis of breast, cervical, colorectal, or prostate cancer. For this study, the sample included 198 patients with newly diagnosed Stage I-III breast cancer who received usual standard of care (control arm) from four PNRP sites, and who received a treatment for breast cancer (e.g., surgery, chemotherapy, radiation, hormonal therapy). Control participants were primarily recruited via medical record abstraction for which informed consent was waived. Exploratory Latent Class Analysis (LCA) was used to identify subgroups of breast cancer patients based on demographic (race/ethnicity, age at diagnosis, health insurance status, annual household income), medical (comorbidities [Charlson Comorbidity Index], family history of cancer), environmental (geographic residence [urban vs. rural], and health system (cancer-related services available onsite) factors associated with timeliness of breast cancer care. For the second aim, the study conducted logistic regression analyses to examine if class membership significantly predicted timely breast cancer treatment initiation, defined as initiation of any treatment for breast cancer (e.g., surgery, chemotherapy, radiation, hormonal therapy) within 30 or 60 days of diagnosis, controlling for type of breast cancer treatment. Results: Three classes of breast cancer patients were identified with varying patterns of patient demographic, medical, and health system characteristics. The first class was distinguished by its high endorsement of indicators associated with timely breast cancer care; patients in this class were most likely to be White, have private health insurance, and have a family history of cancer. The second class was characterized by individual and contextual factors associated with treatment delays, including having public health insurance, not having a family history of cancer, and receiving care at a facility with the least amount of breast cancer services available onsite. The third class represented breast cancer patients with the oldest average age at diagnosis and the greatest number of medical comorbidities. Binomial logistic regression analyses demonstrated that the emergent classes did not significantly differ in the likelihood of initiating breast cancer treatment within 30 days or 60 days from breast cancer diagnosis, controlling for type of treatment. Conclusions: The present study used LCA to derive classes of breast cancer patients based on simultaneous evaluation of demographic, medical, environmental, and health system factors associated with timely breast cancer care. However, the emergent classes did not significantly differ in terms of timely initiation of breast cancer treatment following definitive diagnosis of breast cancer. The relatively small and homogenous study sample may have obscured differences in timeliness of breast cancer treatment initiation. Future studies should utilize LCA with larger, more diverse samples of breast cancer patients to identify distinct classes with unique combinations of individual and contextual characteristics that influence timeliness of breast cancer care. Identification of distinct typologies of breast cancer patients provides a deeper understanding of how the combination of factors synergistically impacts breast cancer outcomes and can help target interventions to specific subgroups of patients that are most likely to experience delays in breast cancer care. Multigenre research projects affirm students' home cultures while developing important academic skills consistent with the Common Core State Standards in reading and writing. This book will guide teachers in assigning, scaffolding, and assessing multigenre research assignments, including how to choose a topic, pace the work, and keep writers on track to achieve specific





