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This volume, dedicated to the memory of the great American mathematician Bertram Kostant (May 24, 1928 – February 2, 2017), is a collection of 19 invited papers by leading mathematicians working in Lie theory, representation theory, algebra, geometry, and mathematical physics. Kostant's fundamental work in all of these areas has provided deep new insights and connections, and has created new fields of research. This volume features the only published articles of important recent results of the contributors with full details of their proofs. Key topics include: Poisson structures and potentials (A. Alekseev, A. Berenstein, B. Hoffman) Vertex algebras (T. Arakawa, K. Kawasetsu) Modular irreducible representations of semisimple Lie algebras (R. Bezrukavnikov, I. Losev) Asymptotic Hecke algebras (A. Braverman, D. Kazhdan) Tensor categories and quantum groups (A. Davydov, P. Etingof, D. Nikshych) Nil-Hecke algebras and Whittaker D-modules (V. Ginzburg) Toeplitz operators (V. Guillemin, A. Uribe, Z. Wang) Kashiwara crystals (A. Joseph) Characters of highest weight modules (V. Kac, M. Wakimoto) Alcove polytopes (T. Lam, A. Postnikov) Representation theory of quantized Gieseker varieties (I. Losev) Generalized Bruhat cells and integrable systems (J.-H. Liu, Y. Mi) Almost characters (G. Lusztig) Verlinde formulas (E. Meinrenken) Dirac operator and equivariant index (P.-É. Paradan, M. Vergne) Modality of representations and geometry of p -groups (V. L. Popov) Distributions on homogeneous spaces (N. Ressayre) Reduction of orthogonal representations (J.-P. Serre)

The Arctic region plays an important role in regulating the world's climate and is also highly impacted by climate change, with average temperatures rising almost twice as fast as the rest of the world and sea ice melting much faster than previously predicted. These rapid changes will have significant impacts on human activity in the region and on the Arctic marine environment. This book draws on the results of the 2008-2009 Arctic TRANSFORM project, funded by the European Commission's Directorate General of External Relations, which engaged experts in a transatlantic discussion on the roles of the European Union and United States in light of the Arctic's changing climate and political and legal complexities. . The book addresses the significant changes and developments in the marine Arctic, with descriptions and recommendations reflecting the current governance environment. A comprehensive overview of environmental governance and sustainable development in the Arctic is created. Chapters explore impacts and activities by sector, looking at fisheries, shipping, and offshore hydrocarbon in the Arctic, and at policy options and strategies for improving marine governance in the region. A particular focus is given to the roles of the European Union and United States and opportunities for cooperation to enhance Arctic environmental governance. . Intermediate Statistical Investigations provides a unified framework for explaining variation across study designs and variable types, helping students increase their statistical literacy and appreciate the indispensable role of statistics in scientific research. Requiring only a single introductory statistics course as a prerequisite, the program uses the immersive, simulation-based inference approach for which the author team is known. Students engage with various aspects of data collection and analysis using real examples and clear explanations designed to strengthen multivariable understanding and reinforce first-course concepts. Each chapter contains in-depth exercises which follow a consistent six-step statistical exploration and investigation method (ask a research question, design a study, explore the data, draw inferences, formulate conclusions, and look back and ahead) enabling students to assess a variety of concepts in a single assignment. Challenging questions based on research articles strengthen critical reading skills, fully worked examples demonstrate essential concepts and methods, and engaging visualizations illustrate key themes of explained variation. End-of-chapter investigations use real data from

popular culture and published research studies in a variety of disciplines, exposing students to various applications of statistics in the real world. Throughout the text, user-friendly Rossman Chance web applets allow students to conduct the simulations and analyses covered in the book.

This volume presents approaches and methodologies for predicting the structure and diversity of key aquatic communities (namely, diatoms, benthic macroinvertebrates and fish), under natural conditions and under man-made disturbance. The intent is to offer an organized means for modeling, evaluating and restoring freshwater ecosystems.

How can we learn from a multicultural society if we don't know how to recognise it? The contemporary city is more than ever a space for the intense convergence of diverse individuals who shift in and out of its urban terrains. The city street is perhaps the most prosaic of the city's public parts, allowing us a view of the very ordinary practices of life and livelihoods. By attending to the expressions of conviviality and contestation, 'City, Street and Citizen' offers an alternative notion of 'multiculturalism' away from the ideological frame of nation, and away from the moral imperative of community. This book offers to the reader an account of the lived realities of allegiance, participation and belonging from the base of a multi-ethnic street in south London. 'City, Street and Citizen' focuses on the question of whether local life is significant for how individuals develop skills to live with urban change and cultural and ethnic diversity. To animate this question, Hall has turned to a city street and its dimensions of regularity and propinquity to explore interactions in the small shop spaces along the Walworth Road. The city street constitutes exchange, and as such it provides us with a useful space to consider the broader social and political significance of contact in the day-to-day life of multicultural cities. Grounded in an ethnographic approach, this book will be of interest to academics and students in the fields of sociology, global urbanisation, migration and ethnicity as well as being relevant to politicians, policy makers, urban designers and architects involved in cultural diversity, public space and street based economies.

The basis for much of medical public health practice comes from epidemiological research. This text describes current statistical tools that are used to analyze the association between possible risk factors and the actual risk of disease. Beginning with a broad conceptual framework on the disease process, it describes commonly used techniques for analyzing proportions and disease rates. These are then extended to model fitting, and the common threads of logic that bind the two analytic strategies together are revealed. Each chapter provides a descriptive rationale for the method, a worked example using data from a published study, and an exercise that allows the reader to practice the technique. Each chapter also includes an appendix that provides further details on the theoretical underpinnings of the method. Among the topics covered are Mantel-Haenszel methods, rates, survival analysis, logistic regression, and generalized linear models. Methods for incorporating aspects of study design, such as matching, into the analysis are discussed, and guidance is given for determining the power or the sample size requirements of a study. This text will give readers a foundation in applied statistics and the concepts of model fitting to develop skills in the analysis of epidemiological data.

Audience Anesthesiologists, surgeons, physiologists, molecular biologists, biophysicists, biochemists, pathologists, students, and post doctoral fellows.

Climate change is affecting the Arctic environment and ecosystems at an accelerating speed, twice the rate of the global average. This is opening the Arctic to transportation and resource development and creating serious challenges for local communities and indigenous peoples. Climate Governance in the Arctic considers two aspects of climate change from an institutional perspective. It focuses on how relevant regimes, institutions and governance systems support mitigation of climate change. It also examines the extent to which the varying

governance arrangements in the Arctic support adaptation and the development of adaptation processes for the region. The book's focus on Arctic governance offers unique insights within climate change mitigation and adaptation research.

This book constitutes the refereed proceedings of the Second International Conference on Advances in Communication, Network, and Computing, CNC 2011, held in Bangalore, India, in March 2011. The 41 revised full papers, presented together with 50 short papers and 39 poster papers, were carefully reviewed and selected for inclusion in the book. The papers feature current research in the field of Information Technology, Networks, Computational Engineering, Computer and Telecommunication Technology, ranging from theoretical and methodological issues to advanced applications.

In *The Regulation of International Shipping: International and Comparative Perspectives in Honor of Edgar Gold*, contributors examine the public law and policy framework for shipping and maritime trade, the complex relationship between shipping and the marine environment, the imperative of better protection of seafarers, and ultimately, responsible ocean use.

The virtually universal popularity of caffeine, together with concerns about its potential pathogenic effects, have made it one of the most extensively studied drugs in history. However, despite the massive scientific literature on this important substance, most reviews have either focused on limited areas of study or been produced in popular form

Two years after the discovery that Earth Prime 4-6-4-0-8-9 dash Omega is in imminent danger of collapse, the Transdimensional Authority has helped hundreds of millions... well, millions... okay, a lot of aliens immigrate to Earth Prime. How's that working out? Rodney Pendleton, the first alien to make the move, is now a tech millionaire (hover technology is wildly popular – who knew?). Wainwright Walsh, lead singer for The Occidental Tourists (ask your parents... or, maybe your grandparents), puts together an all-star band to raise funds for a foundation to help the aliens adjust to their new home. But all is not beat yas and scream on Earth Prime. An investigation into the first murder of an alien being leads to an anti-alien protest group, revealing a dark, speciesist strain of human emotion. And a different investigation into the disappearance of aliens in Latin America reveals a dark, greedy strain of human emotion. It turns out, some problems cannot be solved by the swift, unexpected application of pie! Cover artwork by Hugh Spencer

Natural pigments in biology, natural food colour, biotechnology in natural food colours, safety of food colorants, chlorophylls and chlorophyll derivatives, haems and bilins, carotenoids, anthocyanins and betalains, less common natural colorant.

Bioactive Natural Products (Part G)

This book provides an elementary-level introduction to R, targeting both non-statistician scientists in various fields and students of statistics. The main mode of presentation is via code examples with liberal commenting of the code and the output, from the computational as well as the statistical viewpoint. Brief sections introduce the statistical methods before they are used. A supplementary R package can be downloaded and contains the data sets. All examples are directly runnable and all graphics in the text are generated from the examples. The statistical methodology covered includes statistical standard distributions, one- and two-sample tests with continuous data, regression analysis, one-and two-way analysis of variance, regression analysis, analysis of tabular data, and sample size calculations. In addition, the last four chapters contain introductions to multiple linear regression analysis, linear models in general, logistic regression, and survival analysis.

The book covers all the aspects of Data Interpretation & Data Sufficiency. The book is divided into 7 chapters. Each

chapter describes the concepts related to the chapter along with numerous Solved Examples. The theory portion is followed by 5 levels of exercises in each chapter: 1. Concept Applicator 2. Concept Builder 3. Concept Cracker 4. Concept Deviator 5. Concept Eliminator The past questions of major exams like CAT/ XAT/ IIFT/ SNAP are covered in the book.

These proceedings provide an overview of the ongoing research and management activities on polar bears in the circumpolar arctic. Together with the previous 13 proceedings, they provide an historic record of international efforts in protecting, studying and managing polar bears. With recent documentation of how warmer arctic climate might affect the sea ice habitat of polar bears, the predictions of even warmer climate in the next decades, and documentation of effects on polar bears subpopulations, an evaluation of the red list status of polar bear subpopulations was followed by an increased conservation designation of vulnerable. In the complexity of possible interactions between climate change, local harvest, and in some areas high levels of pollutants, an increased level of international cooperation was advocated. Natural products present in the plant and animal kingdom offer a huge diversity of chemical structures which are the result of biosynthetic processes that have been modulated over the millennia through genetic effects. With the rapid developments in spectroscopic techniques and accompanying advances in high-throughput screening techniques, it has become possible to isolate, determine the structures and biological activity of natural products rapidly, thus opening up exciting new opportunities in the field of new drug development to the pharmaceutical industry. The present volume contains 22 articles written by leading experts in natural product chemistry on biologically active natural products. It includes research on a variety of different classes of natural products including sesquiterpenes, quassinoids, diterpenoids, lignans, oligostilbenes, phenylethanoids, phenylpropanoid glycosides, curcumin analogues, glycosphingolipids etc. Many of these have been found to be active in a number of different disease conditions. * Timely reviews written by international authorities in the field * Topics ranging from purely chemical to very biological * The 13th volume in the series to be devoted to bioactive natural products

The Arctic, the Antarctic, and the Hindu Kush-Himalayas form a trio of terrains sometimes called “the three poles”. Mainly composed of rock, snow, and ice, these precious regions, which are home to many unique species such as the polar bear, the emperor penguin, and the snow leopard, contain the primary water resource of this planet and directly shape our climate. This book presents a first-ever global assessment and progressive review of the three poles and demonstrates the urgent need for their protection. Sins of the past have irrevocably harmed and threatened many of the unique qualities of these regions, and the future looks bleak with the global population forecast to reach 9 billion by 2060, and with climate change on the rise. Presented here is a wide-reaching and coherent overview of the three poles’

biodiversity, habitats, and ongoing destruction. Failed protection and social targets set by the United Nations and other bodies are exposed while economic growth, unconstrained or inappropriate development, and urban sprawl are promoted unabated. Polar regions play a major role in the global agenda as they are rich in oil and other resources, marking them for contamination, overfishing, and further degradation. Tourism in the Antarctic has benefited from enlightened self-regulation, but there are signs that this is changing, too. The chapters of this book are written by experts in their fields, and their evidence leaves no doubt that we already live beyond our carrying capacity on a finite but decaying space. A global protection role model and several outlook scenarios are proposed to help set in motion polar protection priorities that are actually valid. Humanity has demonstrated through international treaties such as the Antarctic Treaty and the Madrid Protocol that we can put the interests of the planet as a whole first. This must become the norm, not the exception.

Detailed case studies of agroecological initiatives show how growers, scientists, agricultural organizations, and public agencies can form partnerships to develop innovative, ecologically based techniques for reducing reliance on agrochemicals.

« This is the first report of the Circumpolar Biodiversity Monitoring Program (CBMP) to summarize status and trends in biotic elements in the arctic marine environment. The effort has identified knowledge gaps in circumpolar biodiversity monitoring. CBMP is the cornerstone program of Conservation of Arctic Flora and Fauna (CAFF). »--

For many years, concerns have been expressed about environmental issues in the Arctic. While the Arctic region, unlike Antarctica, has been inhabited for thousands of years, it is under unique threat because of its vulnerability toward resource exploitation and the deposition of various airborne pollutants. With its varied populations, and with eight Nations asserting territorial interests, the Arctic needs a careful approach to its protection and development. This report describes the current Arctic environmental legal regime. It also discusses the possibility of negotiating a sustainability treaty for the Arctic with high standards of environmental protection similar to those in the 1991 Protocol on Environmental Protection to the Antarctic Treaty. It is hoped that this review of the legal and policy contrasts between the Arctic and Antarctic can help in the consideration of future directions for the Arctic legal regime.

Mathematical Approach and Models of Regulatory Mechanisms.- A New Mathematical Approach of Hormonal Regulatory Mechanisms during Growth.- The Allosteric Model of Monod, Wyman and Changeux and the Phenomenon of Rising B/F-Curves in Hormone-Antibody Reactions.- Oxytocin Effect of the Depolarized Rat Uterus: A Mathematical Approach Using System Identification.- Method for Measuring the Development of Control Systems in Time.- Analytical Investigation of the Oscillatory Phenomenon in Hormone Regulation.- Substrate Concentration and Its Effect on the Application of the Law of Mass Action-A Brownian.

Contents:Recent Trends in Solid State Ionics (T Takahashi)Theoretical Aspects of Fast Ion Conduction in Solids (D Brinkman)Chemical Bonding and Interaction Processes in Framework Structures (P Hagenmuller)Characterization of New Ambient Temperature Lithium Polymer-Electrolyte (G C Farrington)Relaxation of Conductivity to Structure and Structural Relaxation in Ion-Conducting Glasses (C A Angell & H

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Senapati)Electrochemical Studies on High Tc Superconductors (L-Q Chen & X-J Huang)Light Scattering Studies on Superionic Conductor
YSZ (M Ishigame et al.)and others Readership: Solid state physicists, materials scientists and condensed matter physicists.

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