

bmc biology impact factor

BMC Biology Impact Factor: Understanding Its Significance and Influence in Scientific Publishing

bmc biology impact factor is a term that often surfaces in conversations among researchers, academics, and students involved in the biological sciences. But what exactly does it mean, and why is it important? In this article, we'll delve deep into the significance of the BMC Biology impact factor, exploring how it shapes perceptions of the journal, influences publishing decisions, and reflects the journal's standing in the broader scientific community.

What Is the BMC Biology Impact Factor?

To begin with, the impact factor is a measure used to evaluate the importance and influence of a scientific journal within its field. It is calculated annually by Clarivate Analytics and published in the Journal Citation Reports. Specifically, the impact factor represents the average number of citations received per paper published in the journal during the preceding two years.

BMC Biology, an open-access journal published by BioMed Central, focuses on a broad spectrum of topics within the biological sciences, including molecular biology, genetics, ecology, and evolutionary biology. The BMC Biology impact factor quantitatively reflects how often recent articles from the journal are cited in other scientific works, serving as a proxy for the journal's prestige and relevance in the field.

Why Does the BMC Biology Impact Factor Matter?

Influence on Researchers and Authors

For many scientists, the decision of where to publish their research is influenced heavily by the impact factor of potential journals. A higher impact factor often suggests that the journal attracts a wider readership and that the published articles might receive more citations. When considering BMC Biology, its impact factor provides an indicator of how well the journal is recognized within the life sciences community.

Furthermore, institutions and funding bodies sometimes use impact factors as a metric to assess the quality of research output. Publishing in a journal like BMC Biology with a solid impact factor can enhance a researcher's

academic profile and open doors to future collaborations and funding opportunities.

Role in Academic Evaluation

While the impact factor is not without its critics, it remains a widely accepted benchmark for journal quality. Universities and research institutes may consider the impact factor of journals when evaluating faculty performance, promotions, or tenure decisions. Here, the BMC Biology impact factor serves as a tangible measure, helping committees gauge the reach and perceived value of the research published.

How Is the BMC Biology Impact Factor Calculated?

Understanding the calculation method can demystify the numbers and provide clarity on what the impact factor truly represents.

The formula for the impact factor is:

Impact Factor (Year X) = Citations in Year X to articles published in Years X-1 and X-2 / Number of articles published in Years X-1 and X-2

For example, the 2023 BMC Biology impact factor would be calculated by dividing the number of times articles published in 2021 and 2022 were cited in 2023 by the total number of articles BMC Biology published in 2021 and 2022.

Factors Influencing Citation Rates

Several elements contribute to how often articles in BMC Biology are cited:

- **Article quality and relevance:** High-quality, innovative research tends to attract more citations.
- **Journal visibility:** Being an open-access journal, BMC Biology allows free access worldwide, increasing readership and potential citations.
- **Field dynamics:** Some areas within biology have faster citation cycles, influencing the overall impact factor.

Comparing BMC Biology Impact Factor with Other Journals

It's natural to wonder how BMC Biology stacks up against other journals in the biological sciences. While the impact factor is just one metric among many, it can offer a glimpse into the journal's influence.

For instance, top-tier journals like Nature or Science boast very high impact factors due to their broad scope and high-profile publications. BMC Biology, focusing specifically on life sciences with an open-access model, may have a moderate but respectable impact factor reflecting its niche and accessibility.

Why Open Access Matters

BMC Biology's open-access status often enhances its citation potential. Unlike subscription-based journals, articles are freely available to anyone with an internet connection, removing barriers for readers globally. This accessibility can lead to higher visibility and potentially more citations, positively affecting the impact factor.

Beyond the Impact Factor: Other Metrics to Consider

While the BMC Biology impact factor is a useful indicator, it's not the only measure of a journal's quality or influence. Researchers should also be aware of alternative metrics that provide complementary insights.

- **h-index:** Shows how many articles from the journal have been cited at least 'h' times, reflecting both productivity and citation impact.
- **Eigenfactor score:** Measures the journal's overall importance to the scientific community, accounting for the quality of citing journals.
- **Altmetrics:** Track social media mentions, news coverage, and online discussions about articles, offering a broader view of impact beyond citations.

Evaluating these alongside the BMC Biology impact factor can provide a more holistic picture of the journal's standing.

Tips for Authors Considering BMC Biology

If you're thinking about submitting your research to BMC Biology, understanding the impact factor and related aspects can help you make an informed choice.

- **Assess journal scope:** Ensure your work aligns with the journal's focus areas to increase chances of acceptance and readership.
- **Consider open access benefits:** Publishing in BMC Biology means your article is accessible worldwide, potentially boosting citations.
- **Review recent articles:** Look at recent highly cited papers to get a sense of the journal's interests and standards.
- **Understand publication timelines:** BMC Biology is known for relatively quick peer review and publication, which can be crucial for timely dissemination.

These considerations can maximize the visibility and impact of your research.

How the BMC Biology Impact Factor Reflects Trends in Biological Research

The impact factor doesn't just measure citations; it indirectly reveals trends in the life sciences. When BMC Biology's impact factor rises or falls, it often corresponds to shifts in research priorities, emerging fields, or groundbreaking discoveries.

For instance, a surge in citations to articles on CRISPR gene-editing or microbiome studies published in BMC Biology might signal growing interest and rapid development in those areas. Monitoring these patterns can be valuable for researchers looking to stay at the forefront of biological research.

In the dynamic world of scientific publishing, the BMC Biology impact factor serves as a helpful barometer of the journal's influence and reach within the biological sciences. While it is just one piece of the puzzle, understanding its calculation, significance, and context can empower researchers to make strategic decisions about where to publish and how to evaluate scientific literature. Whether you are an early-career scientist or an established academic, appreciating the nuances behind the BMC Biology impact factor enriches your perspective on the evolving landscape of biology research.

dissemination.

Frequently Asked Questions

What is the current impact factor of BMC Biology?

As of the most recent Journal Citation Reports, BMC Biology has an impact factor of approximately 7.1, reflecting its strong influence in the field of biological sciences.

How has the impact factor of BMC Biology changed over the past five years?

Over the past five years, BMC Biology's impact factor has shown a steady increase, indicating growing recognition and citation of its published research within the scientific community.

What factors contribute to the impact factor of BMC Biology?

The impact factor of BMC Biology is influenced by the quality and relevance of its published articles, citation rates, editorial standards, and the journal's visibility within the biology research community.

How does BMC Biology's impact factor compare to other open access biology journals?

BMC Biology's impact factor is generally higher than many other open access biology journals, positioning it as a leading publication in the field with rigorous peer review and high-quality content.

Is the impact factor a good measure of BMC Biology's quality?

While the impact factor provides a useful metric of citation frequency, it is not the sole indicator of BMC Biology's quality, as the journal also emphasizes open access, transparency, and the scientific rigor of its publications.

Where can I find the official impact factor for BMC Biology?

The official impact factor for BMC Biology can be found in the Journal Citation Reports published by Clarivate Analytics or on the journal's official website under their metrics or about sections.

Additional Resources

BMC Biology Impact Factor: A Detailed Examination of Its Significance and Influence

bmc biology impact factor is a critical metric widely referenced by researchers, academics, and institutions when evaluating the prestige and influence of the journal within the biological sciences community. As a prominent open-access journal under the BMC series, BMC Biology has established itself as a reputable platform for disseminating high-quality research across a broad spectrum of biological disciplines. Understanding its impact factor not only sheds light on the journal's standing but also informs decisions related to manuscript submission, citation potential, and academic recognition.

Understanding the BMC Biology Impact Factor

The impact factor of a journal is calculated annually by Clarivate Analytics and published in the Journal Citation Reports (JCR). It represents the average number of citations received in a particular year by articles published in the journal during the two preceding years. The BMC Biology impact factor, therefore, provides an estimate of the journal's citation frequency, serving as a proxy for its influence and relevance in the scientific community.

As of the most recent data available, BMC Biology's impact factor hovers around the mid-to-high range among open-access biology journals, reflecting its role as a multidisciplinary platform that publishes cutting-edge research. The journal's impact factor is influenced by several factors, including the quality of submitted manuscripts, editorial standards, and the scope of topics covered.

The Role of Impact Factor in Academic Publishing

While the BMC Biology impact factor offers a quantifiable measure of impact, it is essential to recognize its limitations and context within academic publishing. Impact factor can be a double-edged sword: it aids researchers in identifying influential journals but also can overshadow other valuable metrics such as article-level citations, altmetrics, and peer review quality.

Nonetheless, many institutions use impact factor as a benchmark in evaluating research output, affecting funding decisions, career progression, and institutional rankings. For authors considering BMC Biology, the impact factor may influence their choice by reflecting the journal's visibility and potential for widespread dissemination.

Comparative Analysis: BMC Biology Versus Peer Journals

To contextualize the BMC Biology impact factor, it is instructive to compare it with other journals in the field of biology and related disciplines. Journals like Nature Communications, PLOS Biology, and eLife, which also operate under open-access models, typically boast higher impact factors, often exceeding 7 or 8, reflecting their broader readership and multidisciplinary appeal.

Conversely, some specialized journals focusing on niche subfields may have lower impact factors but maintain high relevance within their specific communities. BMC Biology positions itself as a middle ground, balancing broad appeal with rigorous peer review, thus attracting a diverse range of biological research.

Factors Influencing the Impact Factor of BMC Biology

Several elements directly affect the impact factor of BMC Biology:

- **Article Quality:** The journal's commitment to publishing methodologically sound and innovative research enhances citation potential.
- **Open Access Model:** Being fully open access removes barriers to readership, potentially increasing citations from a global audience.
- **Interdisciplinary Scope:** By covering various biological subfields, the journal appeals to a wider scientific community.
- **Editorial Policies:** Stringent peer review and editorial oversight maintain high standards, influencing citation rates.
- **Publication Frequency:** Regular issues and rapid publication timelines ensure timely dissemination, which can boost visibility.

Pros and Cons of BMC Biology's Impact Factor in Research Evaluation

Evaluating the BMC Biology impact factor reveals both advantages and drawbacks, especially when used as a singular metric for research quality.

Advantages

- **Benchmark for Quality:** A respectable impact factor signals a reliable and influential publication venue.
- **Enhanced Visibility:** Higher impact factor journals tend to attract more readers and citations.
- **Career Advancement:** Publishing in journals with solid impact factors can positively affect academic CVs and grant applications.

Limitations

- **Disciplinary Variations:** Impact factors vary widely across sub-disciplines, making direct comparisons challenging.
- **Short Citation Window:** The two-year citation period may not capture the long-term influence of some articles.
- **Potential for Misuse:** Overemphasis on impact factor can incentivize quantity over quality or discourage innovative research outside mainstream trends.

Impact Factor Trends and Future Outlook for BMC Biology

Analyzing the trends in BMC Biology's impact factor over recent years shows a steady or modest increase, indicative of the journal's growing prominence. Factors such as increased submissions, enhanced editorial processes, and the expanding biological research landscape contribute to this trajectory.

With the scientific publishing ecosystem evolving rapidly—especially around open-access policies and alternative metrics—BMC Biology is likely to adapt by integrating broader measures of impact alongside traditional metrics. This shift will better capture the journal's influence in fostering scientific dialogue and innovation.

The BMC Biology impact factor remains a valuable, though not exclusive, indicator of the journal's standing in the global biological sciences community. Researchers, institutions, and policymakers continue to monitor

these metrics closely to navigate the complex terrain of scientific publishing and knowledge dissemination.

Bmc Biology Impact Factor

bmc biology impact factor: Biotechnology: Concepts, Methodologies, Tools, and Applications Management Association, Information Resources, 2019-06-07 Biotechnology can be defined as the manipulation of biological process, systems, and organisms in the production of various products. With applications in a number of fields such as biomedical, chemical, mechanical, and civil engineering, research on the development of biologically inspired materials is essential to further advancement. Biotechnology: Concepts, Methodologies, Tools, and Applications is a vital reference source for the latest research findings on the application of biotechnology in medicine, engineering, agriculture, food production, and other areas. It also examines the economic impacts of biotechnology use. Highlighting a range of topics such as pharmacogenomics, biomedical engineering, and bioinformatics, this multi-volume book is ideally designed for engineers, pharmacists, medical professionals, practitioners, academicians, and researchers interested in the applications of biotechnology.

bmc biology impact factor: The Scientist , 2008

bmc biology impact factor: Microbiomes of the Built Environment National Academies of Sciences, Engineering, and Medicine, National Academy of Engineering, Division on Engineering and Physical Sciences, Health and Medicine Division, Division on Earth and Life Studies, Board on Infrastructure and the Constructed Environment, Board on Environmental Studies and Toxicology, Board on Life Sciences, Committee on Microbiomes of the Built Environment: From Research to Application, 2017-10-06 People's desire to understand the environments in which they live is a natural one. People spend most of their time in spaces and structures designed, built, and managed by humans, and it is estimated that people in developed countries now spend 90 percent of their lives indoors. As people move from homes to workplaces, traveling in cars and on transit systems, microorganisms are continually with and around them. The human-associated microbes that are shed, along with the human behaviors that affect their transport and removal, make significant contributions to the diversity of the indoor microbiome. The characteristics of healthy indoor environments cannot yet be defined, nor do microbial, clinical, and building researchers yet understand how to modify features of indoor environments—such as building ventilation systems and the chemistry of building materials—in ways that would have predictable impacts on microbial communities to promote health and prevent disease. The factors that affect the environments within buildings, the ways in which building characteristics influence the composition and function of indoor microbial communities, and the ways in which these microbial communities relate to human health and well-being are extraordinarily complex and can be explored only as a dynamic, interconnected ecosystem by engaging the fields of microbial biology and ecology, chemistry, building science, and human physiology. This report reviews what is known about the intersection of these disciplines, and how new tools may facilitate advances in understanding the ecosystem of built environments, indoor microbiomes, and effects on human health and well-being. It offers a research agenda to generate the information needed so that stakeholders with an interest in understanding the impacts of built environments will be able to make more informed decisions.

bmc biology impact factor: Plan S for Shock Robert-Jan Smits, Rachael Pells, 2022-01-27 Plan S for shock: the open access initiative that changed the face of global research. This is the story of open access publishing – why it matters now, and for the future. In a world where information has never been so accessible, and answers are available at the touch of a fingertip, we are hungrier for the facts than ever before – something the Covid-19 crisis has brought to light. And yet, paywalls put

in place by multi-billion dollar publishing houses are still preventing millions from accessing quality, scientific knowledge – and public trust in science is under threat. On 4 September 2018, a bold new initiative known as ‘Plan S’ was unveiled, kickstarting a world-wide shift in attitudes towards open access research. For the first time, funding agencies across continents joined forces to impose new rules on the publication of research, with the aim of one day making all research free and available to all. What followed was a debate of global proportions, as stakeholders asked: Who has the right to access publicly-funded research? Will it ever be possible to enforce change on a multi-billion dollar market dominated by five major players? Here, the scheme’s founder, Robert-Jan Smits, makes a compelling case for Open Access, and reveals for the first time how he set about turning his controversial plan into reality – as well as some of the challenges faced along the way. In telling his story, Smits argues that the Covid-19 crisis has exposed the traditional academic publishing system as unsustainable.

bmc biology impact factor: Expanding Perspectives on Open Science: Communities, Cultures and Diversity in Concepts and Practices L. Chan, F. Loizides, 2017-06-20 Twenty-one years ago, the term ‘electronic publishing’ promised all manner of potential that the Web and network technologies could bring to scholarly communication, scientific research and technical innovation. Over the last two decades, tremendous developments have indeed taken place across all of these domains. One of the most important of these has been Open Science; perhaps the most widely discussed topic in research communications today. This book presents the proceedings of Elpub 2017, the 21st edition of the International Conference on Electronic Publishing, held in Limassol, Cyprus, in June 2017. Continuing the tradition of bringing together academics, publishers, lecturers, librarians, developers, entrepreneurs, users and all other stakeholders interested in the issues surrounding electronic publishing, this edition of the conference focuses on Open Science, and the 27 research and practitioner papers and 1 poster included here reflect the results and ideas of researchers and practitioners with diverse backgrounds from all around the world with regard to this important subject. Intended to generate discussion and debate on the potential and limitations of openness, the book addresses the current challenges and opportunities in the ecosystem of Open Science, and explores how to move forward in developing an inclusive system that will work for a much broader range of participants. It will be of interest to all those concerned with electronic publishing, and Open Science in particular.

bmc biology impact factor: Library and Information Services for Bioinformatics Education and Research Ram, Shri, 2017-01-25 The delivery and availability of information resources is a vital concern to professionals across multiple fields. This is particularly vital to data intensive professions, where easy accessibility to high-quality information is a crucial component of their research. Library and Information Services for Bioinformatics Education and Research is an authoritative reference source for the latest scholarly material on the role of libraries for the effective delivery of information resources to optimize the study of biological data. Highlighting innovative perspectives across a range of topics, such as user assessment, collection development, and information accessibility, this publication is ideally designed for professionals, managers, computer scientists, graduate students, and practitioners actively involved in the field of bioinformatics.

bmc biology impact factor: Chalcidoidea of the World John Heraty, James Woolley, 2025-03-25 The superfamily Chalcidoidea (the jewel wasps) are part of the insect order Hymenoptera. The superfamily comprises more than 27,000 known species, with an estimated total diversity of more than 500,000 species, meaning that the vast majority have yet to be discovered and described. Most of the species are parasitoids, attacking the egg, larval stage or pupal stage of their host, though many other life cycles are known including gall associates and fig pollinators. This landmark volume has been co-authored by world authorities on the systematics and biology of chalcidoid wasps. It provides an introduction to the superfamily, a review of chalcidoid morphology, an overview of the fossil record, a phylogenetic framework for the revised classification of the superfamily, an identification key for the 50 recognized families, and detailed treatments of the individual families.

For many years to come this important book will serve the needs of hymenopterists and professional entomologists, taxonomists and systematists, entomologists working on parasitic wasps as biological control agents, and ecologists working on parasite-host interactions.

bmc biology impact factor: Rigor and Reproducibility in Genetics and Genomics , 2023-11-08 Rigor and Reproducibility in Genetics and Genomics: Peer-reviewed, Published, Cited provides a full methodological and statistical overview for researchers, clinicians, students, and post-doctoral fellows conducting genetic and genomic research. Here, active geneticists, clinicians, and bioinformaticists offer practical solutions for a variety of challenges associated with several modern approaches in genetics and genomics, including genotyping, gene expression analysis, epigenetic analysis, GWAS, EWAS, genomic sequencing, and gene editing. Emphasis is placed on rigor and reproducibility throughout, with each section containing laboratory case-studies and classroom activities covering step-by-step protocols, best practices, and common pitfalls. Specific genetic and genomic technologies discussed include microarray analysis, DNA-seq, RNA-seq, Chip-Seq, methyl-seq, CRISPR gene editing, and CRISPR-based genetic analysis. Training exercises, supporting data, and in-depth discussions of rigor, reproducibility, and ethics in research together deliver a solid foundation in research standards for the next generation of genetic and genomic scientists. - Provides practical approaches and step-by-step protocols to strengthen genetic and genomic research conducted in the laboratory or classroom - Presents illustrative case studies and training exercises, discussing common pitfalls and solutions for genotyping, gene expression analysis, epigenetic analysis, GWAS, genomic sequencing, and gene editing, among other genetic and genomic approaches - Examines best practices for microarray analysis, DNA-seq, RNA-seq, gene expression validation, Chip-Seq, methyl-seq, CRISPR gene editing, and CRISPR-based genetic analysis - Written to provide trainees and educators with highly applicable tools and strategies to learn or refine a method toward identifying meaningful results with high confidence in their reproducibility

bmc biology impact factor: Marine Biodiversity and Ecosystem Functioning Martin Solan, Rebecca J. Aspden, David M. Paterson, 2012-07-19 This edited volume is the first to address the latest advances in biodiversity-function science using marine examples. It provides an in-depth evaluation of the science before offering a perspective on future research directions for some of the most pressing environmental issues facing society today and in the future.

bmc biology impact factor: Microbiome-Host Interactions D. Dhanasekaran, Dhiraj Paul, N. Amaresan, A. Sankaranarayanan, Yogesh S. Shouche, 2021-03-31 Microbiota are a promising and fascinating subject in biology because they integrate the microbial communities in humans, animals, plants, and the environment. In humans, microbiota are associated with the gut, skin, and genital, oral, and respiratory organs. The plant microbial community is referred to as holobiont, and it is influential in the maintenance and health of plants, which themselves play a role in animal health and the environment. The contents of Microbiome-Host Interactions cover all areas as well as new research trends in the fields of plant, animal, human, and environmental microbiome interactions. The book covers microbiota in polar soil environments, in health and disease, in *Caenorhabditis elegans*, and in agroecosystems, as well as in rice root and actinorhizal root nodules, speleothems, and marine shallow-water hydrothermal vents. Moreover, this book provides comprehensive accounts of advanced next-generation DNA sequencing, metagenomic techniques, high-throughput 16S rRNA sequencing, and understanding nucleic acid sequence data from fungal, algal, viral, bacterial, cyanobacterial, actinobacterial, and archaeal communities using QIIME software (Quantitative Insights into Microbial Ecology). FEATURES Summarizes recent insight in microbiota and host interactions in distinct habitats, including Antarctic, hydrothermal vents, speleothems, oral, skin, gut, feces, reproductive tract, soil, root, root nodules, forests, and mangroves Illustrates the high-throughput amplicon sequencing, computational techniques involved in the microbiota analysis, downstream analysis and visualization, and multivariate analysis commonly used for microbiome analysis Describes probiotics and prebiotics in the composition of the gut microbiota, skin microbiome impact in dermatologic disease prevention, and microbial communities in the

reproductive tract of humans and animals Presents information in a reachable way for students, teachers, researchers, microbiologists, computational biologists, and other professionals who are interested in strengthening or enlarging their knowledge about microbiome analysis with next-generation DNA sequencing in the different branches of the sciences

bmc biology impact factor: *Sustainable Agriculture Reviews 53* Mohammad Faizan, Shamsul Hayat, Fangyuan Yu, 2022-01-28 This book presents recent developments involving the role of nanoparticles on stress tolerance. In particular, nanoparticles have the potential to provide effective solutions to the multiple agriculture-related problems. Nanoparticles present enhanced reactivity and thus better effectiveness when compared to their bulkier counterparts due to their higher surface-to-volume ratio.

bmc biology impact factor: *Genome Editing for Pest Management* Habib Ali, Yutao Xiao, 2025-07-25 This book comprehensively reviews the transformative potential of genome editing in insect pest management. The introductory chapter explores the importance of genome sequencing and its role in understanding pest biology and control. The subsequent chapters provide a thorough examination of CRISPR/Cas9 and other genome editing tools, discussing ethical and regulatory aspects. The following chapters introduce precision pest control strategies, including gene drive technologies and enhanced sterile insect techniques, and discuss integrating omics into integrated pest management (IPM) strategies. Sterile Insect Technique (SIT) enhanced with genome editing, its limitations, and various applications in pest control are discussed. The final chapter reviews the challenges, ethical considerations, risk assessment, safety protocols, biosecurity measures, the need for regulatory frameworks, and international cooperation in genome editing for pest management. As such, this book is a valuable source for scientists, researchers, and professionals in the fields of entomology, genetics, and agricultural science. Key features: Explores the role of omics technologies such as genomics, transcriptomics, proteomics, and metabolomics for pest management Delves into RNAi in pest management, discussing its role in target identification and validation for pest gene control Highlights the cutting-edge tools such as CRISPR/Cas9, ZFNs, and TALENs and their applications in pest control Discusses innovative strategies such as gene drive technologies and the enhanced Sterile Insect Technique (SIT), and their integration into Integrated Pest Management Addresses the ethical, safety, and regulatory challenges associated with genome editing in pest management

bmc biology impact factor: *Encyclopedia of Dairy Sciences* , 2011-03-25 Dairy Science, Four Volume Set includes the study of milk and milk-derived food products, examining the biological, chemical, physical, and microbiological aspects of milk itself as well as the technological (processing) aspects of the transformation of milk into its various consumer products, including beverages, fermented products, concentrated and dried products, butter and ice cream. This new edition includes information on the possible impact of genetic modification of dairy animals, safety concerns of raw milk and raw milk products, peptides in milk, dairy-based allergies, packaging and shelf-life and other topics of importance and interest to those in dairy research and industry. Fully reviewed, revised and updated with the latest developments in Dairy Science Full color inserts in each volume illustrate key concepts Extended index for easily locating information

bmc biology impact factor: *Encyclopedia of Agriculture and Food Systems* Neal K. Van Alfen, 2014-07-29 Encyclopedia of Agriculture and Food Systems, Second Edition, Five Volume Set addresses important issues by examining topics of global agriculture and food systems that are key to understanding the challenges we face. Questions it addresses include: Will we be able to produce enough food to meet the increasing dietary needs and wants of the additional two billion people expected to inhabit our planet by 2050? Will we be able to meet the need for so much more food while simultaneously reducing adverse environmental effects of today's agriculture practices? Will we be able to produce the additional food using less land and water than we use now? These are among the most important challenges that face our planet in the coming decades. The broad themes of food systems and people, agriculture and the environment, the science of agriculture, agricultural products, and agricultural production systems are covered in more than 200 separate chapters of

this work. The book provides information that serves as the foundation for discussion of the food and environment challenges of the world. An international group of highly respected authors addresses these issues from a global perspective and provides the background, references, and linkages for further exploration of each of topics of this comprehensive work. Addresses important challenges of sustainability and efficiency from a global perspective. Takes a detailed look at the important issues affecting the agricultural and food industries today. Full colour throughout.

bmc biology impact factor: Microbiomes Eugene Rosenberg, 2021-03-02 This book examines an important paradigm shift in biology: Plants and animals, traditionally viewed as individuals, are now considered to be complex systems and host to a plethora of microorganisms. After first presenting historical aspects of microbiota research, bacterial compositions of individual microbiomes and the critical analysis of current methods, the book discusses how microbial communities inside the human body are profoundly affected by numerous factors, such as macro- and micro-nutrients, physical exercise, antibiotics, gender and age. As described by current research, the author highlights how microbiomes contribute to the fitness of the host by providing nutrients, inhibiting pathogens, aiding in the storage of fat during pregnancy, and contributing to development and behavior. The author not only focusses on prokaryotic components in microbiomes, but also addresses single-cell eukaryotes and viruses. This follow-up to the successful book *The Hologenome Concept: Human, Animal and Plant Microbiota*, published in 2013, provides a contemporary overview of microbiomes. It appeals to anyone working in the life sciences and biomedicine.

bmc biology impact factor: The UFAW Handbook on the Care and Management of Laboratory and Other Research Animals Huw Golledge, Claire Richardson, 2024-03-12 The latest edition of the seminal reference on the care and management of laboratory and research animals The newly revised ninth edition of *The UFAW Handbook on the Care and Management of Laboratory and Other Research Animals* delivers an up-to-date and authoritative exploration on worldwide developments, current thinking, and best practices in the field of laboratory animal welfare science and technology. The gold standard in laboratory and captive animal care and management references, this latest edition continues the series' tradition of excellence by including brand-new chapters on ethical review, the care of aged animals, and fresh guidance on the care of mole rats, corvids, zebrafish, and decapods. The book offers introductory chapters covering a variety of areas of laboratory animal use, as well as chapters on the management and care of over 30 different taxa of animals commonly utilised in scientific procedures and research around the world. It also provides: A thorough introduction to the design of animal experiments, laboratory animal genetics, and the phenotyping of genetically modified mice Comprehensive explorations of animal welfare assessment and the ethical review process Practical discussions of legislation and oversight of the conduct of research using animals from a global perspective In-depth examinations of the planning, design, and construction of efficient animal facilities, special housing arrangements, and nutrition, feeding, and animal welfare *The UFAW Handbook on the Care and Management of Laboratory and Other Research Animals Ninth Edition* is essential for laboratory animal scientists, veterinarians, animal care staff, animal care regulatory authorities, legislators, and professionals working in animal welfare non-governmental organizations.

bmc biology impact factor: Understanding gut microbiomes as targets for improving pig gut health Prof. Mick Bailey, Emeritus Professor Chris Stokes, 2022-01-11 Provides a comprehensive coverage of the key ecosystem services delivered by the gut microbiome Analysis of the pig gut microbiome and its relationship with the pig gastrointestinal tract In-depth focus on the techniques available to optimise gut function as a means for improving pig gut health

bmc biology impact factor: Computational Systems Biology of Pathogen-Host Interactions Saliha Durmuş, Tunahan Çakır, Reinhard Guthke, Emrah Nikerel, Arzucan Özgür, 2016-05-30 A thorough understanding of pathogenic microorganisms and their interactions with host organisms is crucial to prevent infectious threats due to the fact that Pathogen-Host Interactions (PHIs) have critical roles in initiating and sustaining infections. Therefore, the analysis of infection mechanisms

through PHIs is indispensable to identify diagnostic biomarkers and next-generation drug targets and then to develop strategic novel solutions against drug-resistance and for personalized therapy. Traditional approaches are limited in capturing mechanisms of infection since they investigate hosts or pathogens individually. On the other hand, the systems biology approach focuses on the whole PHI system, and is more promising in capturing infection mechanisms. Here, we bring together studies on the below listed sections to present the current picture of the research on Computational Systems Biology of Pathogen-Host Interactions: - Computational Inference of PHI Networks using Omics Data - Computational Prediction of PHIs - Text Mining of PHI Data from the Literature - Mathematical Modeling and Bioinformatic Analysis of PHIs Computational Inference of PHI Networks using Omics Data Gene regulatory, metabolic and protein-protein networks of PHI systems are crucial for a thorough understanding of infection mechanisms. Great advances in molecular biology and biotechnology have allowed the production of related omics data experimentally. Many computational methods are emerging to infer molecular interaction networks of PHI systems from the corresponding omics data. Computational Prediction of PHIs Due to the lack of experimentally-found PHI data, many computational methods have been developed for the prediction of pathogen-host protein-protein interactions. Despite being emerging, currently available experimental PHI data are far from complete for a systems view of infection mechanisms through PHIs. Therefore, computational methods are the main tools to predict new PHIs. To this end, the development of new computational methods is of great interest. Text Mining of PHI Data from Literature Despite the recent development of many PHI-specific databases, most data relevant to PHIs are still buried in the biomedical literature, which demands for the use of text mining techniques to unravel PHIs hidden in the literature. Only some rare efforts have been performed to achieve this aim. Therefore, the development of novel text mining methods specific for PHI data retrieval is of key importance for efficient use of the available literature. Mathematical Modeling and Bioinformatic Analysis of PHIs After the reconstruction of PHI networks experimentally and/or computationally, their mathematical modeling and detailed computational analysis is required using bioinformatics tools to get insights on infection mechanisms. Bioinformatics methods are increasingly applied to analyze the increasing amount of experimentally-found and computationally-predicted PHI data.

bmc biology impact factor: *The Domestic Dog* James Serpell, 2017 Second edition of a classic text on canine science and behavior, incorporating two decades of new evidence and discoveries.

bmc biology impact factor: *Life Histories* Gary A. Wellborn, Martin Thiel, 2018 Crustaceans are increasingly used as model organisms in all fields of biology, as few other taxa exhibit such a variety of body shapes and adaptations to particular habitats and environmental conditions. *Life Histories* is the fifth volume in *The Natural History of the Crustacea* series. An understanding of life histories is crucial to understanding the biology of this fascinating invertebrate group. Written by internationally recognized experts studying a wide range of crustacean taxa and topics, this volume synthesizes current research in a format that is accessible to a wide scientific audience.

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