advanced biology impact factor

advanced biology impact factor is a crucial metric in the world of scientific publishing, especially for researchers, scholars, and institutions aiming to assess the quality and influence of journals within the field of biology. Understanding the advanced biology impact factor helps identify leading journals, track research trends, and make informed decisions about where to publish or source reliable information. This article presents a comprehensive overview of what the advanced biology impact factor represents, how it is calculated, its significance in the scientific community, the factors influencing it, and its role in shaping the future of biological sciences. Readers will also discover common misconceptions, strategies to improve impact factors, and practical insights for authors, reviewers, and academic institutions. By exploring these topics, you will gain a clear understanding of the advanced biology impact factor and its broader implications, equipping you with the knowledge to navigate the dynamic landscape of scientific publishing.

Understanding the Advanced Biology Impact Factor

The advanced biology impact factor represents a quantitative measure of the average number of citations received by articles published in a specific biology journal over a defined period, typically two years. This metric is widely utilized to assess the scientific influence and prestige of journals within the biological sciences. For researchers and institutions, the impact factor serves as an important indicator when selecting journals for publication, evaluating research quality, and determining funding priorities.

Impact factors are published annually and can significantly affect a journal’s reputation.

Leading journals with high impact factors often attract groundbreaking research and top-tier submissions, reinforcing their position in the scientific ecosystem. The advanced biology impact factor not only reflects citation rates but also encompasses broader trends in research visibility, accessibility, and relevance.

Calculation Methods and Criteria

The Basic Impact Factor Formula

The calculation of the advanced biology impact factor follows a standardized formula: the total number of citations in the current year to articles published in the previous two years, divided by the total number of "citable items" published during those two years. This formula provides a snapshot of a journal's citation frequency and scholarly influence.

- Number of citations to recent articles
- Total number of articles published
- Time frame: typically the previous two years

Types of Articles Included

Not all published items are considered "citable." The impact factor calculation usually includes original research articles and reviews but excludes editorials, letters, and news items. This distinction ensures consistency and fairness in evaluating the advanced biology impact factor across different journals.

Data Sources for Calculation

Major citation databases such as Web of Science, Scopus, and PubMed provide the data necessary for calculating impact factors. These databases track peer-reviewed publications and their citation counts, refining the accuracy and reliability of the metric. The process is overseen by organizations such as Clarivate Analytics, which publishes the Journal Citation Reports (JCR).

Significance in the Scientific Community

Academic Reputation

The advanced biology impact factor is closely linked to a journal’s academic reputation. High-impact journals are often perceived as more authoritative and influential, attracting leading researchers and high-quality submissions. For academic institutions, publishing in top-impact journals can improve rankings, visibility, and funding opportunities.

Funding and Career Advancement

Researchers seeking grants or tenure positions may benefit from publishing in journals with a high advanced biology impact factor. Funding agencies and hiring committees frequently consider impact factor rankings when evaluating the significance of research outputs, making it a critical factor in career progression within the biological sciences.

Influence on Research Trends

Journals with elevated impact factors tend to shape research trends and priorities within the field. Highly cited articles often set the agenda for future investigations, guide policy decisions, and influence interdisciplinary collaborations. The advanced biology impact factor thus plays a role in steering scientific innovation and discovery.

Factors Influencing the Advanced Biology Impact Factor

Quality of Published Research

The quality and originality of research articles are primary drivers of citation rates. Journals that prioritize rigorous peer review and innovative content typically achieve higher advanced biology impact factors. Groundbreaking studies, comprehensive reviews, and collaborative research often generate more citations.

Editorial Policies and Peer Review

Effective editorial policies, transparent peer review processes, and timely publication schedules can enhance a journal’s impact factor. Journals that attract respected reviewers and maintain high editorial standards are more likely to publish influential research, increasing their average citation rates.

Accessibility and Open Access

Open access journals, which make articles freely available online, often experience higher citation rates. Increased accessibility enables broader dissemination of research findings,

contributing to a rise in the advanced biology impact factor. Digital platforms and social media also facilitate wider reach and engagement.

1. Research quality and novelty
2. Editorial standards
3. Peer review rigor
4. Open access publishing
5. Journal visibility and indexing

Common Misconceptions and Limitations

Impact Factor Does Not Measure Individual Article Quality

A common misconception is that the advanced biology impact factor reflects the quality of every article published in a journal. In reality, it represents an average citation rate, which may not accurately indicate the value or impact of individual papers. Highly cited articles can skew the overall metric.

Potential for Manipulation

Some journals may attempt to artificially inflate their impact factors by encouraging excessive self-citation or publishing review articles that typically receive more citations. These practices can undermine the integrity of the impact factor as a true measure of scholarly influence.

Disciplinary Differences

Impact factors can vary significantly across different subfields of biology. Specialized or niche journals may have lower impact factors due to smaller research communities, despite publishing high-quality work. Comparing impact factors across disciplines should be approached with caution.

Strategies to Increase Impact Factor

Publishing High-Quality Review Articles

Review articles synthesize existing research and often attract more citations than original studies. Journals can boost their advanced biology impact factor by regularly featuring comprehensive reviews on trending or foundational topics.

Enhancing Journal Visibility

Increasing a journal’s visibility through indexing in major databases, effective marketing, and active engagement on digital platforms can attract more readers and citations. Collaborations with international authors and institutions also contribute to higher citation rates.

Encouraging Open Access

Adopting open access policies allows unrestricted access to published research, promoting wider dissemination and citation. Journals with open access options often report higher advanced biology impact factors than those with limited accessibility.

- Publish impactful review articles
- Expand indexing and database coverage
- Promote open access publishing
- Engage with international research networks
- Accelerate peer review and publication timelines

Practical Insights for Authors and Institutions

Choosing the Right Journal

Authors should consider the advanced biology impact factor when selecting journals for submission, but also assess other factors such as journal scope, audience, and editorial policies. Matching research topics with the journal’s focus increases the likelihood of acceptance and citation.

Maximizing Research Visibility

Researchers can increase the impact of their work by promoting published articles

through academic networks, conferences, and social media. Institutions may support authors by providing resources for open access publishing and training in effective science communication.

Evaluating Research Performance

Academic institutions often use impact factors as part of their research performance assessments, but should incorporate additional metrics such as h-index, citation counts, and peer reviews for a balanced evaluation. The advanced biology impact factor should be one element of a comprehensive research strategy.

Future Trends in Impact Factor Evaluation

Alternative Metrics (Altmetrics)

Emerging metrics such as Altmetrics track online attention, downloads, and social media mentions, offering a more holistic view of research influence. These metrics complement the advanced biology impact factor by capturing broader engagement beyond traditional citations.

Increased Transparency and Accountability

Publishers and indexing services are implementing stricter standards to prevent manipulation and ensure the accuracy of impact factor calculations. The future of journal evaluation will emphasize transparency, reproducibility, and ethical publishing practices.

Integration with Open Science Initiatives

The rise of open science, data sharing, and collaborative platforms is reshaping how impact factors are interpreted. Journals that embrace open science principles may see increased citation rates and enhanced reputations in the advanced biology community.

Trending Questions and Answers about Advanced Biology Impact Factor

Q: What is the advanced biology impact factor?

A: The advanced biology impact factor is a metric that measures the average number of citations received by articles published in a biology journal over a specific period, typically two years. It reflects the scholarly influence and reputation of the journal within the

biological sciences.

Q: Why is the impact factor important for biology journals?

A: The impact factor is important because it helps researchers, institutions, and funding agencies assess the quality, influence, and visibility of biology journals. It guides publication decisions, funding allocations, and career advancements.

Q: How can a journal improve its advanced biology impact factor?

A: Journals can improve their impact factor by publishing high-quality and impactful research, featuring comprehensive review articles, expanding open access options, and increasing visibility through indexing and digital engagement.

Q: Are impact factors the only measure of journal quality?

A: No, impact factors are not the only measure of journal quality. Other metrics, such as h-index, citation counts, peer review standards, and alternative metrics (Altmetrics), also contribute to evaluating journal and article influence.

Q: Can the advanced biology impact factor be manipulated?

A: While reputable organizations strive to maintain integrity, some journals may attempt to manipulate impact factors through excessive self-citation or publishing citation-rich articles. Ongoing efforts are made to ensure transparency and accuracy in impact factor calculations.

Q: Do open access journals have higher impact factors in biology?

A: Open access journals often experience higher citation rates due to increased accessibility, which can lead to higher impact factors in biology. However, other factors such as research quality and editorial standards also play a role.

Q: What are the limitations of using impact factor in research evaluation?

A: Limitations include its inability to measure individual article quality, potential for manipulation, and significant variation across different biological subfields. It should be

used alongside other metrics for a balanced assessment.

Q: How do impact factors affect researchers' career progression?

A: Publishing in journals with high impact factors can enhance researchers' visibility, funding prospects, and opportunities for academic advancement, as many institutions and agencies consider impact factors in their evaluations.

Q: What trends are shaping the future of impact factor evaluation?

A: Trends include the adoption of alternative metrics (Altmetrics), greater transparency in calculation methods, integration with open science initiatives, and a shift towards more holistic evaluation of research impact.

Q: Where can authors find reliable information about advanced biology journal impact factors?

A: Authors can access reliable impact factor data from sources such as Journal Citation Reports (JCR), Web of Science, Scopus, and PubMed, which regularly publish updated metrics for biology journals.

Advanced Biology Impact Factor

Advanced Biology Impact Factor: Decoding the Journal's Prestige

Are you a researcher navigating the complex world of scientific publishing? Understanding the "impact factor" of a journal is crucial for maximizing your research's visibility and influence. This guide dives deep into the advanced biology impact factor, explaining its significance, how it's calculated, its limitations, and how to strategically choose journals for publication. We'll demystify this key metric, empowering you to make informed decisions about where to share your groundbreaking work in advanced biology.

What is the Impact Factor? A Deep Dive

The impact factor (IF) of a scientific journal isn't just a number; it's a widely-used proxy for the journal's relative importance and influence within its field. Specifically for advanced biology, a high impact factor suggests that articles published in that journal are frequently cited by other researchers, indicating their significance and contribution to the ongoing scientific discourse. It's a key metric used by universities, funding bodies, and researchers themselves to assess the quality and prestige of journals. For advanced biology, a high impact factor can significantly boost a researcher's career prospects and grant application success.

How is the Advanced Biology Impact Factor Calculated?

The impact factor calculation isn't a simple average of citations. It's a complex process managed by Clarivate Analytics, using their Web of Science database. For a given year, the IF of an advanced biology journal is calculated as follows:

Total citations in the target year: This counts all citations in the Web of Science database received by articles published in that journal during the two preceding years.
Total citable items in the two preceding years: This includes articles, reviews, and other citable content published during those two years.
Impact Factor Calculation: The total number of citations is divided by the total number of citable items. The result is the journal's impact factor for that year.

The Significance of the Impact Factor for Advanced Biology Research

In the competitive landscape of advanced biology research, publishing in high-impact factor journals offers several crucial advantages:

Increased visibility: Articles published in high-IF journals reach a larger audience of researchers, potentially leading to greater collaboration and impact.
Enhanced reputation: Publication in prestigious journals significantly boosts the reputation of both the researchers and the institutions involved.
Improved funding opportunities: Many funding bodies consider the impact factor when evaluating grant proposals. A strong publication record in high-impact journals increases the likelihood of securing funding.
Career advancement: High-impact publications are often a critical factor in academic promotions and tenure decisions.

Limitations of Using Only the Impact Factor

While the impact factor is a valuable tool, it's crucial to understand its limitations:

Subject-specific comparisons: Comparing impact factors across different fields of advanced biology (e.g., genomics vs. immunology) is problematic because citation practices vary widely.
Journal-specific biases: Some journals might have a higher impact factor simply because they publish more review articles, which tend to receive more citations.
Gaming the system: While rare, there are instances of journals manipulating citation counts to artificially inflate their impact factor.
Emphasis on quantity over quality: The impact factor focuses on the number of citations, not necessarily the quality or influence of the cited work.

Choosing the Right Journal: Beyond the Impact Factor

While the impact factor is an important consideration, it shouldn't be the sole determinant when choosing a journal for your advanced biology research. Consider these factors:

Journal scope and audience: Ensure the journal's focus aligns with your research area.
Peer-review process: A rigorous peer-review process ensures the quality and validity of published research.
Publication speed: Consider the time it takes for the journal to publish your work.
Open access options: Evaluate whether the journal offers open access publication options, which increase accessibility to your research.

Conclusion

The impact factor remains a significant metric in evaluating the prestige and influence of advanced biology journals. Understanding its calculation, significance, and limitations is crucial for researchers seeking to maximize the impact of their work. While the impact factor is a helpful guide, it should be considered alongside other factors when selecting a journal for publication. A holistic approach to journal selection, emphasizing both impact and suitability, will ultimately enhance the reach and influence of your advanced biology research.

FAQs

1. Can a low impact factor journal publish high-quality research? Absolutely. A low IF doesn't

automatically mean inferior research; it could reflect a niche audience or a relatively young journal.

2. How often is the impact factor updated? The impact factor is usually calculated and released annually.

3. Are there alternatives to using the impact factor? Yes, alternative metrics like altmetrics (social media mentions, downloads, etc.) are gaining traction as measures of research impact.

4. Does a high impact factor guarantee increased funding? No, but it significantly improves your chances of securing research funding.

5. What's the difference between the impact factor and the h-index? The h-index measures a researcher's overall productivity and citation impact, whereas the impact factor focuses solely on the journal's influence.

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advanced biology impact factor: Advanced Healthcare Materials Ashutosh Tiwari, 2014-05-09 Offers a comprehensive and interdisciplinary view of cutting-edge research on advanced materials for healthcare technology and applications Advanced healthcare materials are attracting strong interest in fundamental as well as applied medical science and technology. This book summarizes the current state of knowledge in the field of advanced materials for functional therapeutics, point-of-care diagnostics, translational materials, and up-and-coming bioengineering devices. Advanced Healthcare Materials highlights the key features that enable the design of stimuli-responsive smart nanoparticles, novel biomaterials, and nano/micro devices for either diagnosis or therapy, or both, called theranostics. It also presents the latest advancements in healthcare materials and medical technology. The senior researchers from global knowledge centers have written topics including: State-of-the-art of biomaterials for human health Micro- and nanoparticles and their application in biosensors The role of immunoassays Stimuli-responsive smart nanoparticles Diagnosis and treatment of cancer Advanced materials for biomedical application and drug delivery Nanoparticles for diagnosis and/or treatment of Alzheimers disease Hierarchical modelling of elastic behavior of human dental tissue Biodegradable porous hydrogels Hydrogels in tissue engineering, drug delivery, and wound care Modified natural zeolites Supramolecular hydrogels based on cyclodextrin poly(pseudo)rotaxane Polyhydroxyalkanoate-based biomaterials Biomimetic molecularly imprinted polymers

advanced biology impact factor: Encyclopedia of Evolutionary Biology , 2016-04-14 Encyclopedia of Evolutionary Biology, Four Volume Set is the definitive go-to reference in the field of

evolutionary biology. It provides a fully comprehensive review of the field in an easy to search structure. Under the collective leadership of fifteen distinguished section editors, it is comprised of articles written by leading experts in the field, providing a full review of the current status of each topic. The articles are up-to-date and fully illustrated with in-text references that allow readers to easily access primary literature. While all entries are authoritative and valuable to those with advanced understanding of evolutionary biology, they are also intended to be accessible to both advanced undergraduate and graduate students. Broad topics include the history of evolutionary biology, population genetics, quantitative genetics; speciation, life history evolution, evolution of sex and mating systems, evolutionary biogeography, evolutionary developmental biology, molecular and genome evolution, coevolution, phylogenetic methods, microbial evolution, diversification of plants and fungi, diversification of animals, and applied evolution. Presents fully comprehensive content, allowing easy access to fundamental information and links to primary research Contains concise articles by leading experts in the field that ensures current coverage of each topic Provides ancillary learning tools like tables, illustrations, and multimedia features to assist with the comprehension process

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advanced biology impact factor: *Industrialization of Biology* National Research Council, Division on Earth and Life Studies, Board on Life Sciences, Board on Chemical Sciences and Technology, Committee on Industrialization of Biology: A Roadmap to Accelerate the Advanced Manufacturing of Chemicals, 2015-06-29 The tremendous progress in biology over the last half century - from Watson and Crick's elucidation of the structure of DNA to today's astonishing, rapid progress in the field of synthetic biology - has positioned us for significant innovation in chemical production. New bio-based chemicals, improved public health through improved drugs and diagnostics, and biofuels that reduce our dependency on oil are all results of research and innovation in the biological sciences. In the past decade, we have witnessed major advances made possible by biotechnology in areas such as rapid, low-cost DNA sequencing, metabolic engineering, and high-throughput screening. The manufacturing of chemicals using biological synthesis and engineering could expand even faster. A proactive strategy - implemented through the development of a technical roadmap similar to those that enabled sustained growth in the semiconductor industry and our explorations of space - is needed if we are to realize the widespread benefits of accelerating the industrialization of biology. Industrialization of Biology presents such a roadmap to achieve key technical milestones for chemical manufacturing through biological routes. This report examines the technical, economic, and societal factors that limit the adoption of bioprocessing in the chemical industry today and which, if surmounted, would markedly accelerate the advanced manufacturing of chemicals via industrial biotechnology. Working at the interface of synthetic chemistry, metabolic

engineering, molecular biology, and synthetic biology, Industrialization of Biology identifies key technical goals for next-generation chemical manufacturing, then identifies the gaps in knowledge, tools, techniques, and systems required to meet those goals, and targets and timelines for achieving them. This report also considers the skills necessary to accomplish the roadmap goals, and what training opportunities are required to produce the cadre of skilled scientists and engineers needed.

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advanced biology impact factor: Micro/Nanofluidics and Lab-on-Chip Based Emerging Technologies for Biomedical and Translational Research Applications - Part B , 2022-01-28 Micro/Nanofluidics and Lab-on-Chip Based Emerging Technologies for Biomedical and Translational Research Applications - Part B, Volume 187 represents the collation of chapters written by eminent scientists worldwide. Chapters in this new release include Design and fabrication of microfluidics devices for molecular biology applications, Micro/Nanofluidics devices for drug delivery, From organ-on-chip to body-on-chip: the next generation of microfluidics platforms for in vitro drug toxicity testing, Micro/Nanofluidics for high throughput drug screening, Design, fabrication and assembly of lab-on-a-chip and its uses, Advances in microfluidic 3D cell culture for pre-clinical drug development, Tissue and organ culture on lab-on-a chip for biomedical applications, and much more. - Offers a basic understanding of the state-of-the-art design and fabrication of microfluidics/ nanofluidics and lab on chip - Explains how to develop microfluidics/nanofluidic for advanced application such as healthcare, high throughout drug screening, 3D cell culture and organ-on-chip - Discusses the emerging demands and research of micro/nanofluidic based devices in biomedical and translational research applications

advanced biology impact factor: Biodefense in the Age of Synthetic Biology National Academies of Sciences, Engineering, and Medicine, Division on Earth and Life Studies, Board on Life Sciences, Board on Chemical Sciences and Technology, Committee on Strategies for Identifying and Addressing Potential Biodefense Vulnerabilities Posed by Synthetic Biology, 2019-01-05 Scientific advances over the past several decades have accelerated the ability to engineer existing organisms and to potentially create novel ones not found in nature. Synthetic biology, which collectively refers to concepts, approaches, and tools that enable the modification or creation of biological organisms, is being pursued overwhelmingly for beneficial purposes ranging from reducing the burden of disease to improving agricultural yields to remediating pollution. Although the contributions synthetic biology can make in these and other areas hold great promise, it is also possible to imagine malicious uses that could threaten U.S. citizens and military personnel. Making informed decisions about how to address such concerns requires a realistic assessment of the capabilities that could be misused. Biodefense in the Age of Synthetic Biology explores and envisions potential misuses of synthetic biology. This report develops a framework to guide an assessment of the security concerns related to advances in synthetic biology, assesses the levels of concern warranted for such advances, and identifies options that could help mitigate those concerns.

advanced biology impact factor: The Emotional Cerebellum Michael Adamaszek, Mario Manto, Dennis J. L. G. Schutter, 2022-07-29 Emotions represent a critical aspect of daily life in humans. Our understanding of the mechanisms of regulation of emotions has increased exponentially these last two decades. This book evaluates the contribution of the cerebellum to emotion. It outlines the current clinical, imaging and neurophysiological findings on the role of the cerebellum in key aspects of emotional processing and its influence on motor and cognitive function and social behavior. In the first section, the reader is introduced to the contributions of the cerebellum to various emotion domains, from emotion perception and recognition to transmission and encoding. Subsequent chapters provide a comprehensive picture of the neurophysiology and topography of emotion in the cerebellum and illustrate the convergence of theoretical and empirical research. Additional chapters address the cerebellum's involvement in emotional learning, emotional pain, emotional aspects of body language and perception, and its relations to social cognition including morality, music, and art. Finally, neuropsychiatric aspects of the cerebellum's influence on mood disorders and the current state of therapeutic options, including noninvasive stimulation approaches, complete the overview. This is the first book summarizing the current state of knowledge on the contribution of the cerebellum to important aspects of emotion. It is an essential reference for students, trainees, neuroscientists, researchers, and clinicians in neuroscience, neurology, neurosurgery and psychology involved in the study of emotions. The authors are renowned scientists in the field of cerebellar research.

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advanced biology impact factor: Progress in Molecular Biology and Translational Science David B. Teplow, 2018-10-16 Progress in Molecular Biology and Translational Science, Volume 159, provides the most topical, informative and exciting monographs available on a wide

variety of research topics related to prions, viruses, bacteria and eukaryotes. The series includes in-depth knowledge on molecular biological aspects of organismal physiology, along with insights on how this knowledge may be applied to understand and ameliorate human disease. New chapters in this release discuss timely topics, such as Targeting recently deorphanized GPR83 for the treatment of infection, stress, and drug addiction, Arrestin Structure-Function, Arrestins in the Cardiovascular System, Analysis of biased agonism, and more. - Includes comprehensive coverage of molecular biology - Presents ample use of tables, diagrams, schemata, and color figures to enhance the reader's ability to rapidly grasp the information provided - Contains contributions from renowned experts in the field

advanced biology impact factor: *Opportunities in Biology* National Research Council, Division on Earth and Life Studies, Commission on Life Sciences, Board on Biology, Committee on Research Opportunities in Biology, 1989-01-01 Biology has entered an era in which interdisciplinary cooperation is at an all-time high, practical applications follow basic discoveries more quickly than ever before, and new technologiesâ€recombinant DNA, scanning tunneling microscopes, and moreâ€are revolutionizing the way science is conducted. The potential for scientific breakthroughs with significant implications for society has never been greater. Opportunities in Biology reports on the state of the new biology, taking a detailed look at the disciplines of biology; examining the advances made in medicine, agriculture, and other fields; and pointing out promising research opportunities. Authored by an expert panel representing a variety of viewpoints, this volume also offers recommendations on how to meet the infrastructure needsâ€for funding, effective information systems, and other supportâ€of future biology research. Exploring what has been accomplished and what is on the horizon, Opportunities in Biology is an indispensable resource for students, teachers, and researchers in all subdisciplines of biology as well as for research administrators and those in funding agencies.

advanced biology impact factor: International Review of Cell and Molecular Biology Kwang W. Jeon, 2014-11-18 International Review of Cell and Molecular Biology presents comprehensive reviews and current advances in cell and molecular biology. Articles address structure and control of gene expression, nucleocytoplasmic interactions, control of cell development and differentiation, and cell transformation and growth. The series has a world-wide readership, maintaining a high standard by publishing invited articles on important and timely topics authored by prominent cell and molecular biologists. - Authored by some of the foremost scientists in the field - Provides comprehensive reviews and current advances - Wide range of perspectives on specific subjects - Valuable reference material for advanced undergraduates, graduate students and professional scientists

advanced biology impact factor: Advances in Cyanobacterial Biology Prashant Kumar Singh, Ajay Kumar, Vipin Kumar Singh, Alok Kumar Shrivistava, 2020-02-19 Advances in Cyanobacterial Biology presents the novel, practical, and theoretical aspects of cyanobacteria, providing a better understanding of basic and advanced biotechnological application in the field of sustainable agriculture. Chapters have been designed to deal with the different aspects of cyanobacteria including their role in the evolution of life, cyanobacterial diversity and classification, isolation, and characterization of cyanobacteria through biochemical and molecular approaches, phylogeny and biogeography of cyanobacteria, symbiosis, Cyanobacterial photosynthesis, morphological and physiological adaptation to abiotic stresses, stress-tolerant cyanobacterium, biological nitrogen fixation. Other topics include circadian rhythms, genetics and molecular biology of abiotic stress responses, application of cyanobacteria and cyanobacterial mats in wastewater treatments, use as a source of novel stress-responsive genes for development of stress tolerance and as a source of biofuels, industrial application, as biofertilizer, cyanobacterial blooms, use in Nano-technology and nanomedicines as well as potential applications. This book will be important for academics and researchers working in cyanobacteria, cyanobacterial environmental biology, cyanobacterial agriculture and cyanobacterial molecular biologists.

advanced biology impact factor: Inspired by Biology National Research Council, Division on

Earth and Life Studies, Board on Life Sciences, Division on Engineering and Physical Sciences, Board on Physics and Astronomy, Solid State Sciences Committee, Committee on Biomolecular Materials and Processes, 2008-06-17 Scientists have long desired to create synthetic systems that function with the precision and efficiency of biological systems. Using new techniques, researchers are now uncovering principles that could allow the creation of synthetic materials that can perform tasks as precise as biological systems. To assess the current work and future promise of the biology-materials science intersection, the Department of Energy and the National Science Foundation asked the NRC to identify the most compelling questions and opportunities at this interface, suggest strategies to address them, and consider connections with national priorities such as healthcare and economic growth. This book presents a discussion of principles governing biomaterial design, a description of advanced materials for selected functions such as energy and national security, an assessment of biomolecular materials research tools, and an examination of infrastructure and resources for bridging biological and materials science.

advanced biology impact factor: Population Dynamics of the Reef Crisis , 2020-11-27 Population Dynamics of the Reef Crisis, Volume 87 in the Advances in Marine Biology series, updates on many topics that will appeal to postgraduates and researchers in marine biology, fisheries science, ecology, zoology and biological oceanography. Chapters in this new release cover SCTL disease and coral population dynamics in S-Florida, Spatial dynamics of juvenile corals in the Persian/Arabian Gulf, Surprising stability in sea urchin populations following shifts to algal dominance on heavily bleached reefs, Biophysical model of population connectivity in the Persian Gulf, Population dynamics of 20-year decline in clownfish anemones on coral reefs at Eilat, northern Red Sea, and much more. Reviews articles on the latest advances in marine biology Authored by leading figures in their respective fields of study Presents materials that are widely used by managers, students and academic professionals in the marine sciences

advanced biology impact factor: The Fourth Industrial Revolution Klaus Schwab, 2017-01-03 World-renowned economist Klaus Schwab, Founder and Executive Chairman of the World Economic Forum, explains that we have an opportunity to shape the fourth industrial revolution, which will fundamentally alter how we live and work. Schwab argues that this revolution is different in scale, scope and complexity from any that have come before. Characterized by a range of new technologies that are fusing the physical, digital and biological worlds, the developments are affecting all disciplines, economies, industries and governments, and even challenging ideas about what it means to be human. Artificial intelligence is already all around us, from supercomputers, drones and virtual assistants to 3D printing, DNA sequencing, smart thermostats, wearable sensors and microchips smaller than a grain of sand. But this is just the beginning: nanomaterials 200 times stronger than steel and a million times thinner than a strand of hair and the first transplant of a 3D printed liver are already in development. Imagine “smart factories” in which global systems of manufacturing are coordinated virtually, or implantable mobile phones made of biosynthetic materials. The fourth industrial revolution, says Schwab, is more significant, and its ramifications more profound, than in any prior period of human history. He outlines the key technologies driving this revolution and discusses the major impacts expected on government, business, civil society and individuals. Schwab also offers bold ideas on how to harness these changes and shape a better future—one in which technology empowers people rather than replaces them; progress serves society rather than disrupts it; and in which innovators respect moral and ethical boundaries rather than cross them. We all have the opportunity to contribute to developing new frameworks that advance progress.

advanced biology impact factor: How Tobacco Smoke Causes Disease United States. Public Health Service. Office of the Surgeon General, 2010 This report considers the biological and behavioral mechanisms that may underlie the pathogenicity of tobacco smoke. Many Surgeon General's reports have considered research findings on mechanisms in assessing the biological plausibility of associations observed in epidemiologic studies. Mechanisms of disease are important because they may provide plausibility, which is one of the guideline criteria for assessing evidence

on causation. This report specifically reviews the evidence on the potential mechanisms by which smoking causes diseases and considers whether a mechanism is likely to be operative in the production of human disease by tobacco smoke. This evidence is relevant to understanding how smoking causes disease, to identifying those who may be particularly susceptible, and to assessing the potential risks of tobacco products.

advanced biology impact factor: Computational Bioengineering Guigen Zhang, 2015-04-01 Arguably the first book of its kind, Computational Bioengineering explores the power of multidisciplinary computer modeling in bioengineering. Written by experts, the book examines the interplay of multiple governing principles underlying common biomedical devices and problems, bolstered by case studies. It shows you how to take advantage of the la

advanced biology impact factor: *Scientific Frontiers in Developmental Toxicology and Risk Assessment* National Research Council, Commission on Life Sciences, Board on Environmental Studies and Toxicology, Committee on Developmental Toxicology, 2000-12-21 Scientific Frontiers in Developmental Toxicology and Risk Assessment reviews advances made during the last 10-15 years in fields such as developmental biology, molecular biology, and genetics. It describes a novel approach for how these advances might be used in combination with existing methodologies to further the understanding of mechanisms of developmental toxicity, to improve the assessment of chemicals for their ability to cause developmental toxicity, and to improve risk assessment for developmental defects. For example, based on the recent advances, even the smallest, simplest laboratory animals such as the fruit fly, roundworm, and zebrafish might be able to serve as developmental toxicological models for human biological systems. Use of such organisms might allow for rapid and inexpensive testing of large numbers of chemicals for their potential to cause developmental toxicity; presently, there are little or no developmental toxicity data available for the majority of natural and manufactured chemicals in use. This new approach to developmental toxicology and risk assessment will require simultaneous research on several fronts by experts from multiple scientific disciplines, including developmental toxicologists, developmental biologists, geneticists, epidemiologists, and biostatisticians.

advanced biology impact factor: Paleontology David Bainbridge, 2022-02-08 An illustrated look at the art and science of paleontology from its origins to today Humans have been stumbling upon the petrified remains of ancient animals since prehistoric times, leading to tales of giant dogs, deadly dragons, tree gods, sea serpents, and all manner of strange and marvelous creatures. In this richly illustrated book, David Bainbridge recounts how legends like these gradually gave rise to the modern science of paleontology, and how this pioneering discipline has reshaped our view of the natural world. Bainbridge takes readers from ancient Greece to the eighteenth century, when paleontology began to coalesce into the scientific field we know today, and discusses how contemporary paleontologists use cutting-edge technologies to flesh out the discoveries of past and present. He brings to life the stories and people behind some of the greatest fossil finds of all time, and explains how paleontology has long straddled the spheres of science and art. Bainbridge also looks to the future of the discipline, discussing how the rapid recovery of DNA and other genetic material from the fossil record promises to revolutionize our understanding of the origins and evolution of ancient life. This panoramic book brings together stunning illustrations ranging from early sketches and engravings to eye-popping paleoart and high-tech computer reconstructions.

advanced biology impact factor: Current Protocols in Bioinformatics Andreas D. Baxevanis, 2003 Current Protocols in Bioinformatics is the only publication that responds to the need for both a current and updateable source of bioinformatics methodology. This unique publication assures that you have access to a full range of bioinformatics protocols written by globally-recognized experts in the field, and that these proto-cols are updated and revised as new developments and innovations occur.

advanced biology impact factor: *Current Protocols in Stem Cell Biology* ,

advanced biology impact factor: A Dictionary of Biology Elizabeth Martin, Robert Hine, 2015 Fully revised and updated for the seventh edition, this market-leading dictionary is the perfect

guide for anyone studying biology, either at school or university. With more than 5,500 clear and concise entries, it provides comprehensive coverage of biology, biophysics, and biochemistry. Over 250 new entries include terms such as Broca's area, comparative genomic hybridization, mirror neuron, and Pandoravirus. Appendices include classifications of the animal and plant kingdoms, the geological time scale, major mass extinctions of species, model organisms and their genomes, Nobel prizewinners, and a new appendix on evolution. Entry-level web links to online resources can be accessed via a companion website.

advanced biology impact factor: Auxin and Its Role in Plant Development Eva Zažímalová, Jan Petrášek, Eva Benková, 2014-06-26 Auxin is an important signaling compound in plants and vital for plant development and growth. The present book, Auxin and its Role in Plant Development, provides the reader with detailed and comprehensive insight into the functioning of the molecule on the whole and specifically in plant development. In the first part, the functioning, metabolism and signaling pathways of auxin in plants are explained, the second part depicts the specific role of auxin in plant development and the third part describes the interaction and functioning of the signaling compound upon stimuli of the environment. Each chapter is written by international experts in the respective field and designed for scientists and researchers in plant biology, plant development and cell biology to summarize the recent progress in understanding the role of auxin and suggest future perspectives for auxin research.

advanced biology impact factor: Discovering the Brain National Academy of Sciences, Institute of Medicine, Sandra Ackerman, 1992-01-01 The brain ... There is no other part of the human anatomy that is so intriguing. How does it develop and function and why does it sometimes, tragically, degenerate? The answers are complex. In Discovering the Brain, science writer Sandra Ackerman cuts through the complexity to bring this vital topic to the public. The 1990s were declared the Decade of the Brain by former President Bush, and the neuroscience community responded with a host of new investigations and conferences. Discovering the Brain is based on the Institute of Medicine conference, Decade of the Brain: Frontiers in Neuroscience and Brain Research. Discovering the Brain is a field guide to the brainâ€an easy-to-read discussion of the brain's physical structure and where functions such as language and music appreciation lie. Ackerman examines: How electrical and chemical signals are conveyed in the brain. The mechanisms by which we see, hear, think, and pay attentionâ€and how a gut feeling actually originates in the brain. Learning and memory retention, including parallels to computer memory and what they might tell us about our own mental capacity. Development of the brain throughout the life span, with a look at the aging brain. Ackerman provides an enlightening chapter on the connection between the brain's physical condition and various mental disorders and notes what progress can realistically be made toward the prevention and treatment of stroke and other ailments. Finally, she explores the potential for major advances during the Decade of the Brain, with a look at medical imaging techniquesâ€what various technologies can and cannot tell usâ€and how the public and private sectors can contribute to continued advances in neuroscience. This highly readable volume will provide the public and policymakersâ€and many scientists as wellâ€with a helpful guide to understanding the many discoveries that are sure to be announced throughout the Decade of the Brain.

advanced biology impact factor: Cambridge International AS and A Level Biology C. J. Clegg, 2015-01-30 This title covers the entire syllabus for Cambridge International Examinations' International AS and A Level Biology (9700). It is divided into separate sections for AS and A Level making it ideal for students studying both the AS and the A Level and also those taking the AS examinations at the end of their first year. - Explains difficult concepts using language that is appropriate for students around the world - Provides practice throughout the course with carefully selected past paper questions at the end of each chapter We are working with Cambridge International Examinations to gain endorsement for this title.

advanced biology impact factor: Wildlife Review , 1992

advanced biology impact factor: Advances in Space Biology and Medicine S.L. Bonting,

1999-12-20 During the past several years there has been a shortage of flight opportunities for biological and medical projects. And those that were available usually had severe restrictions on instrumentation, number of subjects, duration, time allotted for performing the experiments, a possibility for repetition of experiments. It is our hope and expectation that this will change once the international Space Station is in full operation. The advantages of a permanent space station, already demonstrated by the Russian Mir station, are continuous availability of expert crew and a wide range of equipment, possibility of long-term experiments where this is waranted, increased numbers of subjects through larger laboratory space, proper controls in the large 1-G centrifuge, easier repeatability of experiments when needed. The limited number of flight opportunities during recent years probably explains why it has taken so long to acquire a sufficient number of high quality contributions for this seventh volume of Advances in Space Biology and Medicine. While initially the series wassailed at annually appearing volumes, we are now down to a biannual appearance. Hopefully, it will be possible to return to annual volumes in the future when results from space station experimentation at beginning to pour in. The first three chapters of this volume deal with muscle. Fejtek and Wassersug provide a survey of all studies on muscle of rodents flown in space, and include an interesting demography of this aspect of space research. Riley reviews our current knowledge of the effects of long-term spaceflight and re-entry on skeletal muscle, and considers the questions still to be answered before we can be satisfied that long-term space missions, such as on the space station, can be safely undertaken. Stein reviews our understanding of the nutritional and hormonal aspects of muscle loss in spaceflight, and concludes that the protein loss in space could be deleterious to health during flight and after return. Strollo summarizes our understanding of the major endocrine systems on the ground, then considers what we know about their functioning in space, concluding that there is much to be learned about the changes taking place during spaceflight. The many problems of providing life support (oxygen regeneration and food supply) during extended stay on the Moon, on Mars, or in space by means of plant cultivation are discussed by Salisbury. The challenges of utilizing electrophoresis in microgravity for the separation of cells and proteins are illustrated and explained by Bauer and colleagues. Finally, the chapter on teaching of space life sciences by Schmitt shows that this field of science has come of age, but also that its multidisciplinary character poses interesting challenges to teaching it.

advanced biology impact factor: Platelets and Megakaryocytes Jonathan M. Gibbins, Martyn P. Mahaut-Smith, 2008-02-04 12 The average human body has in the order of 10 circulating platelets. They are crucial for hemostasis, and yet excessive platelet activation is a major cause of m- bidity and mortality in western societies. It is therefore not surprising that platelets have become one of the most extensively investigated biological cell types. We are, however, far from understanding precisely how platelets become activated under physiological and pathophysiological conditions. In addition, there are large gaps in our knowledge of platelet production from their giant precursor cell, the megakar- cyte. Understanding megakaryocyte biology will be crucial for the development of platelet gene targeting. The aim of Platelets and Megakaryocytes is therefore to bring together established and recently developed techniques to provide a comprehensive guide to the study of both the platelet and the megakaryocyte. It consists of five s- tions split between two volumes. The more functional assays appear in Volume 1, whereas Volume 2 includes signaling techniques, postgenomic methods, and a n- ber of key perspectives chapters. Part I of Volume 1, Platelets and Megakaryocytes: Functional Assays, describes many well established approaches to the study of platelet function, including aggregometry, secretion, arachidonic acid metabolism, procoagulant responses, pla- let adhesion under static or flow conditions, flow cytometry, and production of microparticles. Although one would ideally wish to perform experiments with human platelets, studies within the circulation using intravital microscopy require the use of animal models, which are described in Chapter 16, vol. 1.

advanced biology impact factor: Resources in Education , 1997

advanced biology impact factor: Current Protocols in Immunology John E. Coligan, 1991 Current Protocols in Immunology is a three-volume looseleaf manual that provides comprehensive

coverage of immunological methods from classic to the most cutting edge, including antibody detection and preparation, assays for functional activities of mouse and human cells involved in immune responses, assays for cytokines and their receptors, isolation and analysis of proteins and peptides, biochemistry of cell activation, molecular immunology, and animal models of autoimmune and inflammatory diseases. Carefully edited, step-by-step protocols replete with material lists, expert commentaries, and safety and troubleshooting tips ensure that you can duplicate the experimental results in your own laboratory. Bimonthly updates, which are filed into the looseleaf, keep the set current with the latest developments in immunology methods. The initial purchase includes one year of updates and then subscribers may renew their annual subscriptions. Current Protocols publishes a family of laboratory manuals for bioscientists, including Molecular Biology, Human Genetics, Protein Science, Cytometry, Cell Biology, Neuroscience, Pharmacology, and Toxicology.

advanced biology impact factor: Principles of Thermal Ecology Andrew Clarke, 2017 This is the first single volume to cover the effect of temperature in its entirety. The threat of rapid climatic change on a global scale is a stark reminder of the challenges that remain for evolutionary thermal biologists, and adds a sense of urgency to this book's mission.

advanced biology impact factor: Lehninger Principles of Biochemistry Albert L. Lehninger, David L. Nelson, Michael M. Cox, 2005 CD-ROM includes animations, living graphs, biochemistry in 3D structure tutorials.

advanced biology impact factor: Encyclopedia of Polymeric Nanomaterials Shiro Kobayashi, Klaus Müllen, 2015-06-12 Over the last few years, nanoscience and nanotechnology have been the focus of significant research attention, both from academia and industry. This sustained focus has in-turn driven the interdisciplinary field of material science research to the forefront of scientific inquiry through the creation and study of nanomaterials. Nanomaterials play an important role in the development of new materials as they can be used to influence and control physical properties and specific characteristics of other materials. Nanostructured materials that have been created include nanoparticles, nanocapsules, nanoporous materials, polymer multi-layers to name a few. These are increasingly used across applications as diverse as automotive, environment, energy, catalysis, biomedical, pharmaceutical, and polymer industries. The Encyclopedia of Polymeric Nanomaterials (EPN) intends to be a comprehensive reference work on this dynamic field studying nanomaterials within the context of the relationship between molecular structure and the properties of polymeric materials. Alphabetically organized as an encyclopedic Major Reference Work, EPN will cover the subject along multiple classification axes represented by name, source, properties, function, and structures or even processes, applications and usage. The underlying themes of the encyclopedia has been carefully identified to be based not just on material-based and function-based representation but also on structure- and process-based representation. The encyclopedia will have an exclusive focus on polymeric nanomaterials (for e.g., nanoceramics, nanocomposites, quantum dots, thin films) and will be a first of its kind work to have such an organization providing an overview to the concepts, practices and applications in the field. The encyclopedia intends to cover research and development work ranging from the fundamental mechanisms used for the fabrication of polymeric nanomaterials to their advanced application across multiple industries.

advanced biology impact factor: Current Protocols in Protein Science , 1996