Biophysical Journal

AUTHOR GUIDELINES

MISSION STATEMENT

The mission of Biophysical Journal (BJ) is to publish the highest quality biophysical research that elucidates important biological, chemical, or physical mechanisms and provides quantitative insight into fundamental problems at the molecular, cellular, systems, and whole-organism levels. Articles published in BJ should be of general interest to quantitative biologists, regardless of their research specialty.

SCOPE

BJ publishes original articles, letters, and perspectives on important problems in modern biophysics. The articles should be written so as to be of interest to a broad community of biophysicists. BJ welcomes experimental studies that employ quantitative physical approaches for the study of biological systems, including or spanning scales from molecule to whole organism. Experimental studies of a purely descriptive or phenomenological nature, with no theoretical or mechanistic underpinning, are not appropriate for publication in BJ. Theoretical studies should offer new insights into the understanding of experimental results or suggest new experimentally testable hypotheses. Articles reporting significant methodological or technological advances, which have potential to open new areas of biophysical investigation, are also suitable for publication in BJ. Manuscripts describing improvements in accuracy or speed of existing methods or extra detail within methods described previously are not suitable for BJ.

Manuscripts are handled by an Editorial Board of more than 110 scientists who solicit reviewers with the requisite expertise. The Editorial Board is divided among the following sections; these descriptions also serve to detail the scope of science published by BJ:

Section I—Nucleic Acids and Genome Biophysics. This Section highlights biophysical aspects of genome organization and their relation to cellular functions such as transcription, translation, development, and gene-regulatory mechanisms. It includes studies using experimental and computational techniques to investigate the structure, dynamics, function, and regulation of DNA, RNA, and their complexes with other molecules. It also publishes research studies on chromatin structural states, folding and function, and the dynamic organization of the nucleus.

Section II—Proteins. This section focuses on studies on the biophysics of protein structure, function, and interactions. The emphasis is on molecular biophysics encompassing experimental, computational, and theoretical approaches.

Section III—Channels and Transporters. This section publishes mechanistic studies on the structure, function, and regulation of membrane transport proteins and signaling receptors, using experimental and/or computational methods.

Section IV—Membranes. This section publishes studies on the structure, organization, and function of artificial and biological membranes via state-of-the art experimental and theoretical biophysics approaches.

Section V—Molecular Machines, Motors, and Nanoscale Biophysics. This section publishes biophysical studies of molecular motors (cytoskeletal and non-cytoskeletal), cytoskeletal assemblies, and muscle contraction and studies that use single-molecule tracking, force spectroscopy, and other nanoscale techniques.

Section VI —Cell Biophysics. This section focuses on work that furthers our understanding of molecular function and interactions within and between cells and elucidates how these mechanisms are regulated within the cellular milieu.

Section VII—Systems Biophysics. This section publishes the analysis of collective properties in systems of interacting components, including biomolecular networks, organelles, tissues, organs, and whole organisms. Special emphasis is placed on studies that link multiple levels of biological organization, from gene sequence to nonlinear and network-level phenomena, such as pattern formation, metabolism, and signal transduction.

Section VIII—Perspectives (invited).

GENERAL POLICIES

RESEARCH TRANSPARENCY AND MATERIALS AND DATA AVAILABILITY

The Biophysical Society, publisher of BJ, agrees fully with the intent of the National Institutes of Health Principles and Guidelines for Reporting Preclinical Research https://www.nih.gov/research-training/rigor-reproducibility/principles-guidelines-reporting-preclinical-research to encourage reproducible, robust, and transparent research.

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PRIOR PUBLICATION

Manuscripts submitted to BJ must be original; except for the specific exception noted below, manuscripts and Supplemental Information that have already been published or are concurrently submitted elsewhere for publication are not acceptable for submission.

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Article Type	Page Limit
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Perspectives	5
Letters	5
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Wager, E., and S. Kleinert. 2011. Responsible research publication: International standards for authors. A position statement developed at the 2nd World Conference on Research Integrity, Singapore, July 22–24, 2010. In Promoting Research Integrity in a Global Environment. T. Mayer and N. Steneck, editors. Imperial College Press/World Scientific Publishing, Singapore, pp. 309–316.

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Under BJ's 12-month embargo policy, the Journal automatically submits the final published article on behalf of the author to PubMed Central. Therefore, all articles published in BJ are in compliance with the National Institutes of Health and Howard Hughes Medical Institute policies.

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REGULAR ARTICLES

BJ will accept for initial review well-prepared manuscripts in any format. The page estimating tool, however, will be most accurate if the text is one column and the font is Times New Roman size 12 point for regular text and Symbol for Greek and mathematical symbols.

BJ has partnered with Overleaf to provide an easy to use LaTex template in which you can compose and edit your manuscript and submit directly to BJ. The LaTex template is found at:

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- 1. Title Page Include article title and author names. (For initial submissions: Please list author names with initials of given names followed by surnames; do not list affiliations, addresses or email address.)
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 Theoretical manuscripts may include just a Methods Section and do not require Materials. It is preferable if figures or tables, along with their titles and captions, are embedded in the text as they are referenced in the manuscript when submitting for review.
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Manuscripts are to follow the conventions of Scientific Style and Format, 8th Edition, the Council of Science Editors Style Manual (except for references).

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The title of each manuscript should identify the content of the article; clarity and conciseness are essential for indexing, abstracting, and retrieval. No more than 100 characters and spaces should be used. A condensed running title of no more than 40 characters (including spaces) must be provided on the title page.

KEYWORDS

Up to three keywords or phrases and up to three techniques must be provided from a predetermined list.

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Each manuscript must be accompanied by an informative abstract of no more than 300 words. Abstracts should describe the substance of the manuscript in language non-specialists can understand, and must make clear the biological significance of the research. Reference citations are not allowed in the Abstract of a manuscript.

FOOTNOTES

The only footnotes should be on the title page (used within the author list to denote affiliations) or in tables (defined within the table legend).

Author list footnotes should be numbered (1, 2, 3, etc.), and table footnotes should be lettered (a, b, c, etc.). Please do not use the range format to indicate multiple footnotes; instead, list each footnote individually (e.g., 1,2,3,4, not 1–4; and a,b,c,d, not a–d).

ABBREVIATIONS

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Capitalize trade names and give manufacturers' full names and addresses (city and state).

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Equations are to be typewritten. Clearly indicate capital and lowercase letters. Label Greek and unusual symbols

the first time they appear. Use fractional exponents instead of root signs. The solidus (/) for fractions will save vertical space. Equation numbers should be cited in the text without parentheses (e.g., Eq. 9, Eq. 10). Do not cite equations numerically only, but be sure to add the "Eq." Do not cite equations in the Abstract.

You may use LaTeX, MathType, Equation Builder, or Microsoft Equation 3.0 (also known as Equation Editor). BJ has partnered with Overleaf to provide an easy to use LaTex template in which you can compose and edit your manuscript and submit directly to BJ.

The LaTex template is found at: https://www.overleaf.com/articles/biophysical-journal-template/pxxcptphxdhv

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Microsoft Equation is found at:

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REFERENCES

References are cited in numerical order in the text and are designated by that reference number in parentheses. The numbers, in parentheses, can be repeated at each citation of the referenced material. References appearing solely in figure legends and tables follow those in the text. Reference citations are not allowed in the Abstract. The following is an example of numbered citations:

Membrane channels with large aqueous pores are traditionally regarded as "molecular sieves" that discriminate between different molecules based on their size (1,2). This simplified view, however, contradicts emerging experimental evidence that permeation through these structures involves intimate molecular interactions (3–5). Metabolite-specific channels exhibit affinity to their metabolites; permeating molecules do not just slip through the pore, but feel strong attraction to the pore-lining residues. The now classical example is bacterial porin LamB (6), where the existence of an extended binding zone for oligosaccharides is firmly established. More recent examples include ATP interactions with VDAC (3) and penicillin antibiotic interactions with the general bacterial porin OmpF (4,6–8).

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Citations such as "unpublished data" and "personal communication" should be included parenthetically in the text, with all authors' initials and last names, and must not appear in the reference section. For personal communications, include cited author's institutional affiliation and date of communication. Provide written permission to use the material cited when submitting the manuscript.

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All unique supporting references must be included at the end of the main-text reference list. Please see Supplemental Information Instructions for more information.

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If references are added in the proof stage, they and their corresponding citations must be inserted per their proper numerical order and the rest of the citations/references renumbered accordingly. References deleted in the proof stage will read, for example, "3. Reference deleted in proof." Their corresponding numbers will remain in the text.

REFERENCE FORMATS

For the reference list, follow the style of the examples listed here, noting that each reference is numbered according

to the number in which it appears in the text.

JOURNAL ARTICLES

For references to journal articles, include all authors' names (invert only the first author's last name and initials; do not use "et al."), year, complete article titles, volume number, journal name, and inclusive page numbers. Abbreviate the names of journals as in the Serial Sources for the Biosis Data Base; spell out the names of unlisted journals.

See the examples below:

- 1. Cole, K. S., and J. W. Moore. 1960. Potassium ion current in the squid giant axon: Dynamic characteristics. Biophys. J. 1:1-14.
- 2. Loboda, A., and C. M. Armstrong, 2001. Resolving the gating charge movement associated with late transitions in K channel activation. Biophys. J. 81:905-916.
- 3. Reference deleted in proof.
- 4. Johnston I. G., B. C. Rickett, and N. S. Jones. 2014. Explicit tracking of uncertainty increases the power of quantitative rule-of-thumb reasoning in cell biology. Biophys. J. 107:2612-2617.
- 5. Álvarez-González, B., R. Melli, E. Bastounis, R. A. Firtel, J. C., Lasheras, J. C. del Álamo. 2015. Three-dimensional balance of cortical tension and axial contractility enables fast amoeboid migration. Biophys. J. In press.

PREPRINTS

Kappen, B., and V. Gome. 2009. Optimal control as a graphical model interface problem, arXiv, arXiv:0901.0633v2, http://arxiv.org/abs/0901.0633v2 (preprint posted March 10, 2009).

Zhang, D., and M. Glotzer. 2014. Efficient site-specific editing of the *C. elegans* genome. bioRxiv, doi: 10.1101/007344 (preprint posted April 17, 2014).

INFORMATION IN PUBLIC REPOSITORIES

Manuscripts that refer to information in a public database (such as structures in the RCSB Data Bank) must cite the publication, if available, in which the original information was reported as well as the database serial number.

ABSTRACTS

Hohendanner, F., F. Heinzel, L. Blatter. 2016. Dyssynchronous CA Removal in Atrial Cardiac Myocytes. 2016 Biophysical Society Meeting Abstracts. Biophys. J. 110(3), Suppl 1, Abstract 515-Pos.

COMPLETE BOOKS

Phillips, R., J. Kondev, and J. Theriot. 2009. Physical Biology of the Cell. Garland Science, New York.

ARTICLES IN BOOKS

Seddon, J. M., and R. H. Templer. 1995. Polymorphism of lipid-water systems. In Handbook of Biological Physics, vol 1. Structure and Dynamics of Membranes, From Cells to Vesicles. R. Lipowsky and E. Sackmann, editors. Elsevier/North Holland, Amsterdam, pp. 97-160.

COMMERCIAL SOFTWARE

All commercial software and products should provide the name and location of the manufacturer. MATLAB (The

MathWorks, Natick, MA).

WEBSITES

Web references should be treated no differently than other references, and should appear as shown below. Biophysical Society. 2010. 08 July 2010. http://www.biophysics.org.

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All tables should be double-spaced and carry a title. Do not use vertical rules. Tables must be in black and white.

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Biophysical Letters are short articles in diverse areas that report exceptionally important results in an accelerated manner. A Letter should be of interest to a wide variety of readers, and should potentially change the way the reader thinks about an important topic or address a critical question. A letter should tell a complete story without needing extensive data analysis, and it is not meant to serve as a means of publishing preliminary results. The criteria for acceptance of a Letter are more stringent than for Regular Articles, and particular attention will be paid to the significance of the results.

Letters must not exceed five published pages (including figures and references). There will be no exceptions to this length limit. Letters are required to have an Abstract and an Author Contributions Section. They are not required to follow traditional manuscript organization (Introduction, Materials and Methods, Results, Discussion, Conclusion). Only one revision cycle is allowed for Letters and revisions will be due within 30 days (rather than 90 days allowed for Regular Articles). The author of a Letter requiring major revision will be invited to resubmit the work as a Regular Article. Letters are published online ahead of print as soon as corrected proof has been generated.

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COMMENTS TO THE EDITOR

These are short commentaries on an article published earlier in BJ. These are NOT short original articles. In order for a submission to qualify as a Comment, it must not contain unpublished data and must be entirely free of polemic. Comments to the Editor may be rebutted by the authors of the previously published article. Comments and any rebuttals are subject to review. Abstracts are not required for Comments.

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Computational Tool articles are limited to five published pages in length (including figures and references) and describe software for analysis of experimental data, modeling/simulation software, or database services. The tool should be new or the manuscript should describe a significant new feature in an existing computational resource. The manuscript should also describe how the computational tool could be applied to a biophysical problem, preferably with an example. Any new algorithms implemented in the software should also be described. All computational tools will have to be freely accessible and open to the research community. The manuscript should describe what the tool does, but should not take the place of a user guide, which, together with any requisite

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Authors must declare the location and accessibility of any custom code and software central to the main claims of their manuscript. We recommend deposition of source code on GitHub (https://github.com/) together with a listing on Zenodo (https://zenodo.org/), which will assign a Digital Object Identifier (DOI) to make the upload uniquely citable; this DOI should be reported in the manuscript.

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These commentaries, which highlight Regular Articles appearing in the same issue of BJ, are solicited by the handling editor. They are expected within 10 days of solicitation to facilitate rapid peer review and publication. Abstracts are not required for New and Notable articles.

A New and Notable gives the writer some leeway to highlight whatever he/she thinks is relevant as opposed to an inclusive overview. A New and Notable can mention some of the limitations of the relevant article and thus where questions and controversies still lie and where future research can provide the next steps forward. Therefore, it should have no more than 10 references to earlier work (preferably from BJ) and should also have an explicit citation of the article. It could be as short as half a page and be up to two published pages; importantly, it should convey excitement to a non-specialist reader regarding the advance made by the research article. There are no page charges associated with New and Notables. One figure is free of charge; color figures will be online only color. If there are multiple figures with color, any figures after the first one are charged to the author at normal member/non-member rates. If authors insist on print color, it will be at their own expense and billed at the established member/nonmember rates.

PERSPECTIVES IN BIOPHYSICS

Perspectives in Biophysics are short reviews covering topics of current interest in biophysics; they are intended to provide a unique perspective on the current state and future of a field, rather than a comprehensive review. They generally do not present new data, but can offer fresh syntheses of the results in a field. These articles are typically written by authorities in the field and are directed to a broad range of scientists who wish to keep abreast of the best current research. All Perspectives in Biophysics are invited and are solicited by the Editor-in-Chief and the Associate Editors, but nominations from outside the Editorial Board are welcomed. These suggestions will then be considered by the Associate Editor for Perspectives in Biophysics in consultation with the Editor-in-Chief, and if accepted, an invitation will be sent to the proposed author to submit a review. Perspectives should be approximately five published pages, including figures and references, and the number of references should be limited to roughly 60 recent publications. There are no page charges associated with an accepted Perspective. Color figures will be online only color unless the author specifies otherwise and incurs the cost of print color.

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The final version of the manuscript text must be submitted as a single-column Word document or LaTeX file. LaTeX users should submit the .bbl file and a final PDF version of the manuscript as well. The PDF version MUST include the reference section to ensure accuracy of the .bbl file.

As noted above: LaTeX manuscripts must be converted to .doc format by our composition team. As a result, approximately 1 week will be added to the production timeline for LaTeX manuscripts. (See "Math and Equations" inthe "Regular Articles" section above for more information.)

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