JOURNAL OF BIOMEDICAL INFORMATICS

The premier methodology journal in the field

AUTHOR INFORMATION PACK

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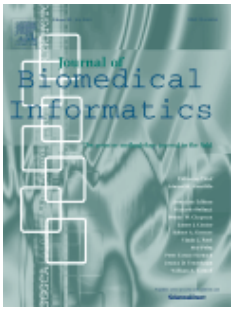

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DESCRIPTION

Aims and Scope: The *Journal of Biomedical Informatics* reflects a commitment to high-quality original research papers, reviews, and commentaries in the area of biomedical informatics. Although we publish articles motivated by applications in the biomedical sciences (for example, clinical medicine, health care, population health, and translational bioinformatics), the journal emphasizes reports of new methodologies and techniques that have general applicability and that form the basis for the evolving science of biomedical informatics. Articles on medical devices; evaluations of implemented systems (including clinical trials of information technologies); or papers that provide insight into a biological process, a specific disease, or treatment options would generally be more suitable for publication in other venues. Papers on applications of signal processing and image analysis are often more suitable for biomedical engineering journals or other informatics journals, although we do publish papers that emphasize the information management and knowledge representation/ modeling issues that arise in the storage and use of biological signals and images. System descriptions are welcome if they illustrate and substantiate the underlying methodology that is the principal focus of the report and an effort is made to address the generalizability and/or range of application of that methodology.

The methods that are the focus of JBI papers may be drawn from any of a number of component sciences in the field of biomedical informatics. Although the methods are often related to the field of computer science, many JBI papers will emphasize innovative techniques from other fields, such as decision science, statistics, cognitive science, psychology, information science, organizational theory, or management science.

Papers are generally of six types:**Regular research papers:** Presentation and discussion of a biomedically or clinically motivated system or approach that has required the creation of innovative methods rather than the application of established techniques. Motivating applications may be discussed, but the new method should be discussed so that generalizability is clear, ideally with an assessment of its range of applicability. Please choose the article type "Research Paper" during the submission process. **Methodological review papers:** Reviews of a methodological approach that summarize its introduction, use, successes, and limitations. Such reviews will also often propose future research directions or critique a method and discuss the range of problems for which it may not be an appropriate solution. Note that such reviews should focus on a method or approach, not on specific application domain (e.g., avoid submitting on reviews such as "Computers in Diabetes Management"). Please choose the article type "Review article" during the submission process.**Commentaries:** These are articles, generally shorter than research papers, that tend

to discuss previously published articles or a theme that is an important area of focus for the methodological basis of biomedical informatics research and its application. Commentaries are often invited, but may be submitted by anyone after a discussion with the editors. If submission of a commentary is being considered, please submit a brief proposal to ted@shortliffe.net beforehand. Please choose the article type "Discussion" during the submission process and specify in the cover letter that your manuscript is intended as a Commentary.**Special communications:**These are articles that address an issue of broad interest to the methodologically-oriented informatics research community. They may report on the results of workshops or research studies, generally offering lessons or guidance that will be useful to others. Such papers need not report on innovative new informatics methodologies. If submission of a special communication is being considered, please submit a brief proposal to ted@shortliffe.net beforehand. Please choose the article type "Discussion" during the submission process and specify in the cover letter that your manuscript is intended as a Special Communication.**Book reviews:** The editors will occasionally identify a new book that is likely to be of interest to the JBI readership. They will invite individuals to write reviews of these volumes, and such submissions are by invitation only. Unsolicited book reviews will not be considered. Please choose the article type "Book review" during the submission process.**Editorials:** The editors or their invitees will occasionally publish editorials, but unsolicited editorials will not be considered. Please choose the article type "Editorial" during the submission process.

When an author is submitting a manuscript in response to a call for papers for a special thematic issue, the submission category should be the special issue title but the cover letter should indicate whether the article is a methodological review, a regular paper, or a commentary.

CONSIDERING SUBMITTING TO JBI? READ THIS SUMMARY TO LEARN WHAT IS APPROPRIATE FOR THE JOURNAL.

The *Journal of Biomedical Informatics* (JBI), first published by Academic Press in 1968 under the title *Computers and Biomedical Research* (CBR), was redesigned and renamed beginning with Volume 34 in 2001. Building on a strong 33-year history since CBR premiered in 1968, we made a number of changes to update and reorient the journal in light of the evolution of the field, while simultaneously seeking to fill a niche not clearly identified as a central focus by the other journals that publish papers in biomedical informatics research. We stated that goal as follows in our inaugural editorial:

"It is increasingly difficult to publish articles that will have broad appeal to a diverse readership. We have accordingly decided that it is important to introduce a tighter focus to the journal in the years ahead, and it is with this in mind that we have renamed the journal to reflect a more modern and narrow emphasis. The Journal of Biomedical Informatics (JBI) is intended to complement rather than to compete with the other major journals in biomedical informatics. In particular, we wish to emphasize papers the elucidate methodologies that generalize across biomedical domains and that help to form the scientific basis for the field. Papers will tend to be concerned with information technology rather than medical devices, and on underlying methods rather than system descriptions or summative evaluations. You should expect this journal to be an excellent source of new ideas about how to tackle difficult problems that arise in the development of computational solutions to problems in the biomedical sciences and clinical practice."

With more than 15 years of publication under the JBI title, we are pleased by the subsequent success of the journal. It has a reputation for excellence and rigor and we hope that our readers and published authors are similarly impressed by the quality of both the work and the writing that we have attracted to these pages. That quality has come at some cost. Some papers that once would have been suitable for CBR are turned away without review because they do not conform to the JBI editorial policy.

JBI seeks to publish papers that make a conceptual contribution to the field, typically by describing an innovation in methodology or technique or by discussing substantive generalizable lessons that have been learned in the context of an interesting informatics project. When a contribution has a theoretical basis, that theory is an appropriate emphasis for the exposition as well. In the figure below we illustrate our view of the relationship between the scientific base in the field and the areas of application that characterize work in biomedical informatics. In our experience, many research projects that start as applications efforts result in methodologic innovation that, properly described, contributes to the scientific base of our discipline. Thus we are not discouraging submissions that discuss interesting applications but, rather, encouraging a perspective on how best to write about and

share generalizable methodologic insights that derive from the applied work and from which others can benefit. We believe that such papers form the core of biomedical informatics as a science.

jbi_aimsscope.gif

Legend: The relationship between biomedical informatics methods, techniques, and theories and the domains of application that characterize the discipline. The Journal of Biomedical Informatics seeks papers on basic research methods and conceptual insights that are biomedically motivated but that could potentially be applied broadly in diverse domains, both within and outside biomedicine. Methods may be drawn from a large number of fields, including, but not limited to, computer science, decision science, cognitive science, information science, psychology, management science, organizational theory, and statistics.

There have been four principal reasons for returning papers without review. Perhaps the most common occurs when a paper is primarily a description of an informatics application or its evaluation. For example, a new expert system that addresses an important clinical problem, but that does not advance the methodologies underlying expert systems, would be more appropriate for another journal, either in applied informatics or in the clinical domain of application. Similarly, survey studies or analyses of user needs are likely to be suitable for JBI only if they contribute new methods for performing such studies or analyses, or new insights into user behavior, cognitive science, or human-computer interaction.

A second reason for returning papers without review occurs when a paper does not deal with the core informatics notions of information and knowledge management. Most commonly this occurs when a paper presents a new medical device or an approach to biomedical signal or image processing, especially when the emphasis is on numerical methods rather than information processing and management or knowledge-based approaches. We generally refer such papers to biomedical engineering journals or to clinical journals in the domain of application (e.g., a cardiology journal for new approaches to electrocardiogram analysis, or an imaging journal for a new mathematical approach to segmentation or other aspects of image analysis).

If you are considering your bioinformatics article for submission to JBI, please be aware of this methodological focus. Biologic discoveries based on the use of routine informatics techniques may be important biologic contributions but are not suitable for JBI. In addition, please note that JBI publishes bioinformatics papers only if they deal with issues in translational (human) science. See the Translational Bioinformatics editorial that deals with this topic before submitting your paper.

Finally, although JBI is an international journal and we understand the challenges that authors face when English is not their native language, some papers have such severe problems with their English exposition that we return them for revision, suggesting the involvement of an editor or coauthor who is expert in English before the paper can be judged suitable for entry into the scientific review process. Minor problems with language can be corrected in the editorial process, but more severe problems prevent an adequate assessment of the scientific contribution.

Of those papers that have gone to review, our eventual acceptance rate is now about 25%. Every published paper has been accepted only after significant revisions, so authors should not be surprised when revisions are required before a paper is ready for publication. We believe, however, that the rigor we have introduced in the reviewing and revision process has resulted in a better, more scientifically useful product. For example, anecdotal feedback, as well as citation and downloading data, suggest that the methodological reviews included in almost every issue have been widely used for educational and study purposes.

We have received an increasing number of submitted papers in each year since the transition from CBR to JBI. In our first year we received about 100 manuscripts but now receive well over 800 papers per year. As a result, the journal has grown in size, with more papers per issue. We also devote two or three issues per year to special methodologic topics overseen by guest editors who propose such special issues to us. Accepted papers are immediately made available online and are indexed in Medline. They appear soon thereafter in a compiled issue on ScienceDirect. Since 2016 we have stopped producing a print version of JBI, having learned that the vast preponderance of access to the journal is through the Internet and ScienceDirect. Hard copies of full issues are available from

Elsevier via the Print on Demand services. Papers are available only to subscribers for the first 12 months after publication, but then are opened up to free access in our ScienceDirect archive. Because the journal is produced online-only, there is not limit or charge regarding the use of color in figures or photographs in submitted manuscripts.

We encourage you to submit your best methodological work to JBI. Bear in mind that we provide opportunities for in-depth discussion of an innovative approach, as judged by our reviewers as well as the editors, and have avoided any arbitrary limit on the length of individual articles. We also encourage papers describing doctoral dissertation work, and emphasize that the extensive topic reviews undertaken in a thesis document often can be adapted to develop an ideal methodology review article for the JBI. JBI also has no page charges and can include multi-media components for articles in the online environment.

Biomedical informatics is a burgeoning field, with important applications and implications throughout the biomedical and clinical worlds. We are eager to have the research community consistently identify JBI as the journal that best defines the scientific base for the field. We accordingly invite both your contributions and your readership.

Edward H. Shortliffe
Editor-in-Chief

AUDIENCE

Biomedical informaticists, Health informaticists

IMPACT FACTOR

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GUIDE FOR AUTHORS

Your Paper Your Way

We now differentiate between the requirements for new and revised submissions. You may choose to submit your manuscript as a single Word or PDF file to be used in the refereeing process. Only when your paper is at the revision stage will you be requested to put your paper in to a 'correct format' for acceptance and provide the items required for the publication of your article. Please note, however, that this approach to initial manuscript submission does not diminish the importance of clear writing, grammatical correctness, and careful review for typographical or spelling errors. Reviewers are still advised to comment on such problems with initial submissions and to take such problems into account in assessing the overall suitability of the paper for the journal.
To find out more, please visit the Preparation section below.

INTRODUCTION

Please read the Aims and Scope in its entirety prior to submission.

The *Journal of Biomedical Informatics* has been redesigned to reflect a commitment to high-quality original research papers and reviews in the area of biomedical informatics. Although published articles are motivated by applications in the biomedical sciences (for example, clinical medicine, health care, population health, imaging, and bioinformatics), the journal emphasizes reports of new methodologies and techniques that have general applicability and that form the basis for the evolving science of biomedical informatics. Articles on medical devices and formal evaluations of completed systems, including clinical trials of information technologies, would generally be more suitable for publication in other venues. Papers on applications of signal processing and image analysis are often more suitable for biomedical engineering journals, although we do publish papers that emphasize the information management and knowledge representation/modeling issues that arise in the storage and use of biological signals. System descriptions are welcome if they illustrate and substantiate the underlying methodology that is the principal focus of the report.

All manuscripts submitted to *Journal of Biomedical Informatics*:

• should contain original work; the original source of any previously published figures or text must be fully cited and all necessary permission to use previously published material must be obtained
• must not be currently under consideration by any other journal
• require the approval of all co-authors that the manuscript be submitted in its present form to JBI.

Please see the Scientific Conduct editorial published in the *Journal of Biomedical Informatics*.

In addition, if you are considering a submission in the field of bioinformatics, please note that JBI now publishes bioinformatics papers only if they deal with issues in translational (human) science. See the Translational Bioinformatics editorial that deals with this topic before submitting your paper.

Authors are encouraged to submit video material or animation sequences to support and enhance your scientific research. For more information please see the paragraph on video data below.

Qualifying articles in *Journal of Biomedical Informatics* are also automatically posted in PubMed Central 12 months after publication. The procedure is described in http://publicaccess.nih.gov/submit_process.htm, Method D.

Authors considering submission of a Commentary and Book reviews should first consult with the Editor-in-Chief, Edward H. Shortliffe (ted@shortliffe.net), so that guidelines and suitability can be discussed in advance of the submission.

Papers are generally of six types:
Regular research papers: Presentation and discussion of a biomedically- or clinically-motivated system or approach that has required the creation of innovative methods rather than the application of established techniques. Motivating applications may be discussed, but the new method should be discussed so that its generalizability is clear, ideally with an assessment of its range of applicability. Please choose the article type "Research paper" during the submission process.

Methodological review papers: Reviews of a methodological approach that summarize its introduction, use, successes, and limitations. Such reviews will also often propose future research directions or critique a method and discuss the range of problems for which it may not be an appropriate solution. Note that such reviews should focus on a method or approach, not on a specific application domain. Please choose the article type "Review article" during the submission process.
Commentaries: These are articles, generally shorter than research papers, that tend to discuss a previously published article or a theme or policy issue that is an important area of focus for the methodological basis of biomedical informatics research and its application. Commentaries are often invited, but may be submitted by anyone after a discussion with the editors. If submission of a commentary is being considered, please submit a brief proposal to ted@shortliffe.net beforehand. Please choose the article type "Discussion" during the submission process.
Special communications: There are articles that address an issue of broad interest to the methodologically-oriented informatics research community. They may report on the results of workshops or research studies, generally offering lessons or guidance that will be useful to others. Such papers need not report on innovative new informatics methodologies. If submission of a special communication is being considered, please submit a brief proposal to ted@shortliffe.net beforehand. Please choose the article type "Discussion" during the submission process.
Book reviews: The editors will occasionally identify a new book that is likely to be of interest to the JBI readership. They will invite individuals to write reviews of these volumes, and such submissions are by invitation only. Unsolicited book reviews will not be considered. Please choose the article type "Book review" during the submission process.
Editorials:
The editors or their invitees will occasionally publish editorials, but unsolicited editorials will not be considered. Please choose the article type "Editorial" during the submission process.

SPECIAL ISSUES IN JBI

JBI publishes special issues at the rate of 2-3 per year. We publish 6 total issues annually and the special issues are included among these regular issues (at no cost to authors or guest editors). Accordingly, we aim for special issues that are likely to attract enough high quality papers to justify creating a dedicated issue on the topic.

We look for topics that are closely aligned with the editorial policy of goals of JBI. A statement of our editorial policy ("Aims and Scope"), and our emphasis on methodological innovation and methodological reviews, rather than on applications or evaluations, is provided on the JBI home page:

http://www.journals.elsevier.com/journal-of-biomedical-informatics/

Note that JBI does not publish papers that are primarily related to biomedical engineering (including image or signal analysis), and any bioinformatics papers must be explicitly related to human health and/or disease (translational bioinformatics). We stress that the theme of special issues should generally be an important methodological focus rather than an application domain. Thus we would, for example, entertain special issues on "Informatics Methods for Medical Privacy" or "Evolutionary Computation in Biomedicine" (both published in 2014) but not "Informatics in Diabetes Care."

JBI does not entertain special issues that are drawn from papers originally presented at a conference or workshop, but it does publish supplements based on meeting proceedings, as outlined in the section on supplements that follows. Sometimes meetings inspire the notion for a special issue, but we do not publish papers that appeared in the proceedings of conferences (see http://dx.doi.org/10.1016/j.jbi.2005.10.002). The Call for Papers must make it clear that we seek open submissions to the special issue, not limited to people who may have attended or presented work at a specific meeting. If submitted papers are based on reports that were previously published in a conference proceedings, they must be substantially expanded, typically updating or providing more detail on what was previously presented at the conference. All papers must be reviewed in accordance with the usual JBI review process, with its emphasis on innovative methodology (rather than novel applications of well-known methods), and even invited papers cannot be assured of acceptance until they have met our standards for peer review.

The guest editor manages the special issue using JBI's editorial system (EES), serving as a temporary associate editor, although the Editor-in-Chief retains the final decision on the acceptance of papers and works closely with the guest editor(s) during the editorial process. When submitted papers are authored or coauthored by one of the guest editors, that paper is handled by a different associate editor, even though the paper is intended for the special issue.
If the proposed guest editor (and any co-editors) are not known to the JBI editors, or have not published in JBI previously, we also ask for a statement of qualifications, including a summary of expertise in the domain of the special issue, a summary of previous editing/reviewing/authoring experience, evidence of excellent skills in written English, and a brief CV.
The proposal for a special issue also involves the preparation of a draft Call for Papers. Examples of such 1-2 page Calls for Papers have appeared in JBI on ScienceDirect over the last several years. Potential guest editors are encouraged to refer to them for templates to follow. A proposed time line for the submission of manuscripts and the reviewing/revising process is also requested, although the time to completion of a special issue is very hard to predict given the vagaries of reviewing times, delays while papers are being revised, and the need for several rounds of reviews for some papers before they are suitable for publication.
Note also that JBI has transitioned to become an online-only journal, given the straightforward access to all content online. The journal has also moved to an article-based publishing model which has a positive effect on the satisfaction of authors who submit papers to special issues. A recent editorial describes those changes in detail (http://www.sciencedirect.com/science/article/pii/S1532046415000179).
Individuals who have reviewed these criteria and wish to prepare a proposal for a special issue should contact the Editor-in-Chief (ted@shortliffe.net).

SUPPLEMENTS TO JBI

Supplements to the *Journal of Biomedical Informatics* offer you the opportunity to publish research and clinical material in association with the brand name of our prestigious journal. All articles are peer-reviewed to safeguard the scientific quality of the publication and are made available to all journal subscribers, including libraries and indexing services, ensuring a high level of visibility for your material. Additionally, you may purchase print copies for your own use. If you are interested in publishing a supplement to the *Journal of Biomedical Informatics*, our terms and conditions are: A guest editor or co-editors should be identified; they will be responsible for managing the editorial process and assuring the quality of the scientific content. The manuscripts should be submitted to the journal via our editorial system:http://ees.elsevier.com/jbi/default.asp?pg=mainpage.html and the submitting author should select in the submission menu the supplement to which his/her manuscript belongs. Following peer review conducted by the guest editor, the editor is expected to consult with the Editor-in-Chief before a decision is made to accept a submitted article. Upon acceptance of the manuscripts, Elsevier will undertake the complete production of the supplement and make it available in ScienceDirect to all regular subscribers. If the sponsor wishes, the supplement can be made open access in perpetuity for an additional fee. Print versions of the supplement can also be produced for an additional fee. A proof copy will be sent to the guest editor for checking and final approval. JBI undertakes to publish the supplement rapidly, subject to delays in the reviewing and revision processes for individual manuscripts that may occur before a final acceptance decision. Elsevier retains the copyright for the material published in the supplement. Advertising may be included in the supplement at the publisher's normal price. Please contact Prof. Ted Shortliffe (ted@shortliffe.net), the Editor-in-Chief of the journal, to inquire regarding the suitability of your proposal. For information regarding pricing, please contact Kevin Partridge (k.partridge@elsevier.com). *Key benefits of publishing a supplement in the Journal of Biomedical Informatics:* Association with the prestigious reputation of the journal Key opinion leader endorsement of a message Rapid delivery to your target audience online, with the option to produce print copies for presentation to specific individuals or organizations Increased impact and longevity of your message Exposure to all the subscribers to the journal Inclusion of all articles in the journal's open archive 12 months after the supplement's publication. Online visibility via ScienceDirect Indexing in major databases to ensure a high level of dissemination of your published material

Submission checklist

You can use this list to carry out a final check of your submission before you send it to the journal for review. Please check the relevant section in this Guide for Authors for more details.

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• Journal policies detailed in this guide have been reviewed
• Referee suggestions and contact details provided, based on journal requirements

For further information, visit our Support Center.

BEFORE YOU BEGIN

Ethics in publishing

Please see our information pages on Ethics in publishing and Ethical guidelines for journal publication.

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