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# JOURNAL OF BIOMEDICAL INFORMATICS

The premier methodology journal in the field

AUTHOR INFORMATION PACK

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**ISSN:** 1532-0464


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## DESCRIPTION

The *Journal of Biomedical Informatics* (formerly *Computers and Biomedical Research*) has been designed to reflect 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, imaging, 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, 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, or management science.

Papers are generally of three 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.**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.**Commentaries:** These are shorter articles 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 applications. 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 jbi@elsevier.com beforehand.

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. JBI also publishes editorials and invited book reviews.

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 10 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.

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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, and statistics.

There have been three 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 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. In addition, 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.

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 35-40%. 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. For example, there was a 20% increase in submissions in a single year (2007 when compared with 2006). 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 topics overseen by guest editors who propose such special issues to us. Accepted papers are immediately made available online and are indexed in Medline, so papers become accessible via web-based literature search tools well before they actually appear in printed form. 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. Several papers make use of color images or figures, and all are made available online, even if cost constraints prevent us from making some of them available in color in the print journal.

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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### 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*:

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- 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.

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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.

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