Integrative Biology

Guidelines for Authors†

Also see: www.rsc.org/authorguidelines

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1.0 General policy

1.1 Mission

Integrative Biology provides a unique venue for research that allows expansion of our knowledge of biology by gaining new insights into important biological and biophysical questions through the application of (novel) enabling quantitative tools and/or technologies (from the nanoscale to the macroscale).

Articles in *Integrative Biology* focus on three principles:

- **Insight**: New understanding of biological mechanisms/processes/phenomena.
- **Innovation**: Use of new technology to enable biological insight.
- **Integration**: The assimilation of technology into biology.

1.2 Scope

Integrative Biology publishes novel biological research, based on innovative experimental and theoretical methodologies, that enhances our capability to gain new insight into important biological questions. In particular, the journal welcomes submissions that contribute to quantitative understanding of how component properties at one level in the dimensional scale (nano to macro) determine biosystem behaviour at a higher level of complexity. Such research is typically inter- or multi-disciplinary, calling upon expertise and technologies from the physical sciences, engineering, computation and mathematics. It can also extend to synthetic systems, whether used to elucidate fundamental principles of biological function or in applications.

Integrative Biology aims to drive forward discovery and analysis within biology through the elucidation of basic biological phenomena and processes which can allow us to: view, interrogate and investigate molecules as well as cells or their contents; model accurately how these processes/systems work; investigate and model complexity; and engineer new solutions to biological problems.

Integrative Biology is an inter- and multi-disciplinary journal, utilising enabling quantitative technologies, both experimental and computational to characterise biological systems at the molecular and cellular levels through the exploitation of the convergence of biology with physics, chemistry, engineering, imaging and informatics. The journal welcomes Critical, Tutorial and Frontier reviews; Primary Research papers (including fundamental and theoretical papers); and Perspectives. Manuscripts should be written such that they are accessible to scientists in all disciplines associated with the journal and highlight the significance of their work in relation to Insight, Innovation and Integration (see section 2.1) and the likely impact on the relevant scientific communities.

Submissions must provide new biological insight achieved through the innovative use of enabling technologies. Studies that would typically be covered by *Integrative Biology* include:

- Studying rare or disease-specific cells using new or improved methods, technologies or devices
- Analysis and imaging of mechanical signal transduction
- Innovative applications of imaging across scales
- Biochemical gradients to study migration and chemotaxis
- Devices/systems that recapitulate *in vivo* structure/function
- Engineered/synthetic micro and nanoenvironments to understand cell-matrix signalling
- Micro and nanofluidics to study mammalian cells
- Nanofluidics to study polymer properties (protein structure/function, DNA replication repair)
- Integrative modelling of molecular, cellular or tissue processes

† For more detailed information on this topic, including guidelines for article layout, preparation of illustrations, presentation of experimental data, and supplementary information deposition, as well as links to useful web sites, templates and other software resources, and authoring tools, see: http://www.rsc.org/authorguidelines.

- Devices and technologies for screening, diagnosing, and monitoring disease
- Cell sub-type identification/measurement
- Nanotechnologies, devices and systems for exploring and elucidating biological systems
- Synthetic biology
- Design and re-engineering of biological systems
- Prediction of dynamic behaviour and effectiveness of drugs
- Systems to monitor and optimise therapeutics *in vivo*
- High-throughput approaches for systems biology
- New miniaturised platforms for elucidating biological events and processes
- Biomimetic systems
- Quantitative models of cell–cell communication
- Quantification of extracellular analytes related to cellular processes
- Biological phenomena and processes at the nanoscale
- Validation of novel technologies against current 'standards/ tradition'
- Single cells—metabolic systems and mechanisms
- Metabolism of cells, proteins, amines, tissues, antibodies *etc*.

2.0 Article types

2.1 Full Papers

All articles must address the following assessment criteria:

- **Insight**: What contribution does the paper make to our insight on the biological mechanism/process/phenomena explored?
- **Innovation**: To what extent does the technology used enable the biological insight?
- **Integration**: To what extent does the paper demonstrate integration of technology and biology?

An 'Insight Box' describing how the work described addresses these criteria (less than 120 words) must be provided on submission. Papers cannot be reviewed without this statement.

Although there is no page limit for Full Papers, appropriateness of length to content of new science will be taken into consideration.

2.2 Perspectives

These must also meet the *Insight*, *Innovation* and *Integration* criteria described above but may be articles providing a personal view of part of one discipline associated with *Integrative Biology* (its present state, where it may be leading, *etc*.) or a philosophical look at a topic of relevance. Alternatively, Perspectives may be historical articles covering a particular subject area or the development of particular case studies, legislation, technologies, methodologies or other subjects within the scope of *Integrative Biology*.

2.3 Critical and Tutorial Reviews

These must be a critical evaluation of the existing state of knowledge on a particular aspect of the scope; the papers discussed should not only be critically assessed but also in terms of the *Insight*, *Innovation* and *Integration* they introduce. In addition, we are looking for reviews that challenge the views of other authors in the area in question and offer an alternative or more challenging view that can help stimulate further studies and research. Simple literature surveys will not be accepted for publication. Potential review writers should contact the Editor before embarking on their work, wherever possible.

2.4 Frontier Reviews

These are smaller, more focused versions of the Critical and Tutorial reviews described above and hence should address all the same criteria in a well-defined, specific topic area covering approximately the last 24–36 months.

- Given topics should review work no more than 24–36 months old.
- Reviews should cover only the most interesting/significant developments in that specific subject area.
- The review should be highly critical and selective in referencing published work.
- One or two paragraphs of speculation about possible future developments may also be appropriate in the conclusion section.
- Frontier Reviews should be brief, four journal pages are recommended (*ca*. ten double spaced, typed, A4 pages) and should contain no more than two or three tables and a minimal number of figures.

Frontier Reviews may also cover processes/mechanisms/techniques/technologies that are too new for a full review or may address a subset of any of these aspects or a given area of research.

3.0 Submission

3.1 Initial submission

Articles should be submitted using the RSC file upload service, ReSourCe.‡

On submitting their manuscripts, authors are encouraged to supply the names and addresses of 2–3 potential referees, and must provide the 'Insight Box' detailed earlier.

Rapid publication is aided by careful preparation of text and illustrations. Particular attention is drawn to the use of (i) SI units and associated conventions, (ii) IUPAC nomenclature for compounds and (iii) standard methods of literature citation.

The RSC ReSourCe service allows any number of files to be uploaded. All files relating to a single manuscript should be uploaded simultaneously during one transaction. Files uploaded separately will result in more than one manuscript number being assigned and may subsequently be lost.

All authors submitting work for publication are required to agree a Licence to Publish (authors retain copyright). Authors submitting online will be asked to agree a Licence to Publish as part of the process. Alternatively, a downloadable PDF version is available,‡ which can be completed and forwarded to the Editorial Office.

After submission your file will be acknowledged by the Editorial Office as soon possible. Authors should contact the Editorial Office if they have not received an acknowledgement within 4 working days. Authors should not forward more than one version of their manuscript or submit the manuscript by post or e-mail to avoid errors in manuscript handling by the Editorial Office.

3.2 Submission of revised articles and material for proof preparation

Revised manuscripts should be sent to the Editorial Office by file upload *via* ReSourCe.‡

Please check the manuscript carefully for consistency, particularly in the representation of formulae, equations, compound names and words with alternative spellings.

Successful use of your electronic files should speed up the production process and avoid errors being introduced. Authors should ensure that files submitted at this stage contain the final version of their manuscript. Proof corrections should only correct errors from the Production process and should not be used to make general changes to the text.

We will try to use the supplied data in our production process, but mathematical equations and tables in particular may be re-keyed by the typesetter. It is imperative that authors check their proofs (including any tabulated data and figures) very carefully. Papers are published as advance Articles on the web as soon as possible after the return of proof corrections. Late corrections cannot be incorporated after publication of the Advance Article.

4.0 Administration

The Editorial Office will acknowledge receipt of a contribution for consideration immediately by e-mail (if an appropriate e-mail address has been supplied). The acknowledgement will indicate the paper reference number assigned to the contribution. Authors are particularly asked to quote this number on all subsequent correspondence. Correspondence will be sent by e-mail where possible.

4.1 Peer review, revision, acceptance, rejection

Details of refereeing policy and procedure are available *via*

‡ See http://www.rsc.org/resource.

ReSourCe.‡

Each manuscript deemed suitable for consideration as a submission will be reviewed by at least two referees, whose names are not disclosed to the authors. The referees' reports constitute recommendations to the appropriate Editor, who is empowered to take final action on manuscripts submitted. The Editor is responsible for all administrative and executive actions, and is empowered to accept or reject papers. This decision and relevant comments of the referees are communicated to the author. Differences of opinion are mediated by the Editor, possibly after consultation with further referees, or by the Editorial Board. It is the Editor's duty to see that, as far as possible, agreement is reached between authors and referees; although the referees may need to be consulted again concerning an author's reply to comments, further refereeing will be avoided as far as possible. Authors will receive formal notification when papers are accepted for publication. When rejection of a paper is recommended, the Editor informs the author. Authors have the right to appeal if they regard a decision to reject as unfair.

4.2 Proofs for correction

PDF proofs for correction are sent by e-mail to the corresponding author. Please note that authors are responsible for the final proof-reading of manuscripts. It is imperative that authors check the proofs very carefully. Particular attention should be paid to numerical data both in the tables and text. Proof corrections should be returned to the Editorial office within 48 hours of receipt (by e-mail or fax). All corrections should be sent at the same time. Papers are published as Advance Articles on the web as soon as possible after proof corrections are received from the authors. Late corrections cannot be incorporated after publication of the Advance Article.

An author may be required to pay the cost of any extensive changes made by him/her at proof stage (other than the correction of printer's errors). So far as possible, essential changes should be made without significantly altering the length of the text. Corrections should be sent by e-mail either as a list of changes clearly stating the page and line number alongside each correction, or as the PDF with electronic notes attached. Alternatively, corrections may be sent by fax. At this stage do not change the text within the PDF file or send a revised manuscript. Corrections should be made clearly and without ambiguity, and any queries from editorial staff on the query sheet should be answered fully.

4.3 Reprints

The corresponding author will receive an electronic reprint (in PDF format) after publication. Authors may print and distribute hardcopies of their article on demand. Authors may also send the electronic file to individuals, as one would send a printed reprint. However, the electronic file may not be distributed *via* an email listserver and it may not be placed on any web site.

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