**DESCRIPTION**

*Veterinary and Animal Science* is a new fully open access publication from Elsevier which strongly encourages a multidisciplinary approach to research in the animal and health spectrum. The scope of the journal is streamlined into two major sections and covers ruminant, monogastric, aquaculture, wild life, equine, camelid and other animal species: 1) Animal Science and 2) Veterinary Science

The Animal Science Section will consider multidisciplinary and innovative research submissions in the following areas:
Animal Genetics, Breeding and Bioinformatics; Animal Nutrition, Feeds and Feeding; Animal Behaviour, Welfare and Ethics; Livestock Production and Management - Meat, Dairy, Wool, Equine and Poultry Sciences; Food Safety and Microbiology.

The Veterinary Science Section will consider manuscripts in these areas of multidisciplinary and innovative research:
Veterinary Physiology, Reproduction and Endocrinology; Veterinary Surgery and Clinical Sciences; Veterinary Epidemiology and Public Health; Veterinary Pathology, Immunology, Virology and Pharmacology; Veterinary and Animal Science Education.

This is a guide to the main areas which *Veterinary and Animal Science* considers; however, it is not an exhaustive list.
Submissions on topics related to wild animal science and animals which are not under the care or direct management of humans will not be considered.
Please visit the Guide for Authors for more information on how to make a submission.

**ABSTRACTING AND INDEXING**

PubMed Central
Emerging Sources Citation Index (ESCI)
Scopus
Directory of Open Access Journals (DOAJ)
EDITORIAL BOARD

Editor-in-Chief
Aduli Malau-Aduli, James Cook University College of Public Health Medical and Veterinary Sciences, Townsville, Australia
Areas of expertise: Genetics, Genomics, Nutrition, Meat science, Sheep, Dairy and beef fatty acids metabolism, Molecular nutrigenomics and breeding

Associate Editors
Harry Blokhuis, Swedish University of Agricultural Science Department of Animal Environment and Health - Uppsala, Uppsala, Sweden
Areas of expertise: Animal behaviour, Animal welfare, Housing and management
Russell David Bush, The University of Sydney School of Veterinary Science, Sydney, New South Wales, Australia
Areas of expertise: Sheep, Cattle, Buffalo, Alpaca, Goats, Nutrition, Meat science, Welfare
Mario Giorgi, University of Pisa Department of Veterinary Sciences, Pisa, Italy
Areas of expertise: Veterinary pharmacology and toxicology - pharmacokinetics, pharmacodynamics, drug metabolism, method validation
Benjamin W.B. Holman, NSW Department of Primary Industries, Centre for Red Meat and Sheep Development, Cowra, New South Wales, Australia
Red meat, eating quality, preservation, production system, retail-potential
Celso Jose Bruno de Oliveira, Paraiba Federal University, João Pessoa, Brazil
Areas of expertise: Foodborne pathogens and food safety, Veterinary epidemiology, Antimicrobial resistance, Genomic epidemiology, Zoonoses and Public health
Chiara Palmieri, The University of Queensland School of Veterinary Science, Gatton, Queensland, Australia
Areas of expertise: Veterinary pathology, Oncology, Avian pathology, reproductive pathology
George Stilwell, University of Lisbon Faculty of Veterinary Medicine, Lisboa, Portugal
Areas of expertise: Ruminant health, Ruminant surgery, Cattle lameness, Farm animal welfare assessment, Pain management

Editorial Advisory Board
João Nestor das Chagas e Silva, University of Lisbon Faculty of Veterinary Medicine, Lisboa, Portugal
Areas of Expertise - Ruminants, Theriogenology, Assisted Reproductive Technologies (AI, FTAI, MOET, ET, Semen and embryo cryopreservation, Reproductive ultrasound)
Rui Afonso d’Orey Branco, Lusophone University of Humanities and Technologies Faculty of Veterinary Medicine, Lisboa, Portugal
Areas of Expertise - Reproduction, Follicle, Ovarian Follicular Reserve, Ultrasound, Animal Welfare, Welfare Quality, Dairy Production, Veterinary Education

Founding Editor
Andy Butterworth
GUIDE FOR AUTHORS

**Types Of Article**

1.) Full Length Article
2.) Review Articles
3.) Case Reports
4.) Short Communication
5.) Opinion Paper
6.) Correspondence (and Replies)

**Full Length Article**

Full length articles are original, high-quality, research papers presenting novel scientific findings. The material should not have been previously published elsewhere, except in a preliminary form.

**Review Articles**

Reviews should address topics or issues of current interest. They may be submitted or invited. Review articles must include a methods section explaining how the literature for review was selected.

**Case Reports**

Case Reports can focus on any species under the management or care of humans but, by definition, must include core clinical content and must present novel findings. Content can focus on a report of a new condition, treatment and follow-up of complex presentations. The format for Case Reports is generally as follows: presentation, history and presenting signs, physical and laboratory evaluation and any other diagnostic assessments deemed relevant, diagnosis, treatment, follow-up, summary and discussion, acknowledgements, and references.

**Short Communication**

A Short Communication is a concise but complete description of a limited investigation, which will not be included in a later paper. Short communications should be as completely documented, both by reference to the literature and description of the experimental procedures employed, as a regular paper.

**Opinion Paper**

An Opinion Paper is a short, opinion-type contribution that normally does not offer original research. The number of Opinion Papers per journal volume may be limited at the discretion of the editors.

**Correspondence and Replies**

Correspondence allows concise commentary about an article published in the journal within 6 months of its online posting. The text should raise a question for clarification, offer an alternative perspective, or explain a flaw in methodology or a perceived misinterpretation of data. The correspondence should address no more than two or three points. Correspondence should not be used as an avenue to introduce new material without subjecting it to typical peer review.

**Editorials**
Editorials will be solicited by the Editors. Authors wishing to submit an Editorial should first seek the advice of the Editors.

**BEFORE YOU BEGIN**

**Ethics In Publishing**

This journal is a member of, and subscribes to the principles of, the Committee on Publication Ethics (COPE) [http://www.publicationethics.org](http://www.publicationethics.org).

For more information on Ethics in Publishing and Ethical Guidelines for journal publication see [https://www.elsevier.com/publishingethics](https://www.elsevier.com/publishingethics) and [https://www.elsevier.com/authors/journal-authors/policies-and-ethics](https://www.elsevier.com/authors/journal-authors/policies-and-ethics).

Authors must also ensure that their manuscript has been carried out in accordance with the Uniform Requirements for manuscripts submitted to Biomedical journals [http://www.icmje.org/recommendations/](http://www.icmje.org/recommendations/).

**Care and Use of Animals**

If the work involves the use of animal subjects, the author should ensure that the work described has been carried out in accordance with the NC3Rs ARRIVE Guidelines (Animals in Research: Reporting In Vivo Experiments). Visit [https://www.nc3rs.org.uk/arrive-guidelines](https://www.nc3rs.org.uk/arrive-guidelines) for more information.

Where animals have been used in a study, the Institutional Animal Care and Use Committee (IACUC) or equivalent ethics review committee, under which the work was conducted, must be stated along with the specific authorisation reference number and the date of approval. This should be explicitly stated in the Materials and Methods section along with the name of the ethics review committee and any regional, national or international guidelines which have been followed. In all cases, unnecessary suffering or cruelty in animal experimentation will not be acceptable to the Editors of Veterinary and Animal Science. The Editors may, at their discretion, reject any paper where there is reason to believe that animals have been subjected to unnecessary or avoidable pain or distress.

If the study was carried out in a territory, region or institution where a formal ethics review committee does not exist, please ensure that you have followed the ARRIVE Guidelines in full; in particular Item 5 (Ethical statement) which requires all authors to clearly state the ethics procedures guidelines which have been followed in the Methods section of their research, and to detail any ethical review permissions which have received.

If a study involves the use of client-owned animals, all necessary steps must have been taken to ensure that animal care, including veterinary care, has been carried out to a high standard and with informed, written client consent.

**Research involving Human Subjects**

If the work involves the use of human subjects, the author should ensure that the work described has been carried out in accordance with The Code of Ethics of the World Medical Association (Declaration of Helsinki) for experiments involving humans [http://www.wma.net/en/30publications/10policies/b3/index.html](http://www.wma.net/en/30publications/10policies/b3/index.html), and if such a procedure applies in the territory where the research was conducted, subject to an ethical committee process.

The privacy rights of human subjects must always be observed.

**Resources**

You may wish to consult the following resources but please note that you must fulfill the regional and institutional guidelines relating to care and use of animals, pertaining to the territory in which the research was carried out, before submitting your manuscript:

EU Directive 2010/63/EU for animal experiments
http://ec.europa.eu/environment/chemicals/lab_animals/legislation_en.htm

Declaration of competing interest
All authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of potential conflicts of interest include employment, consultancies, stock ownership, honoraria, paid expert testimony, patent applications/registrations, and grants or other funding. Authors should create a declaration of competing interest statement using this tool and upload to the submission system at the Attach Files step. **Note: Please do not convert the .docx template to another file type. Author signatures are not required.** This statement will be published within the article if accepted.

Submission declaration and verification
Submission of an article implies that the work described has not been published previously (except in the form of an abstract, a published lecture or academic thesis, see 'Multiple, redundant or concurrent publication' for more information), that it is not under consideration for publication elsewhere, that its publication is approved by all authors and tacitly or explicitly by the responsible authorities where the work was carried out, and that, if accepted, it will not be published elsewhere in the same form, in English or in any other language, including electronically without the written consent of the copyright-holder. To verify originality, your article may be checked by the originality detection service Crossref Similarity Check.

Preprints
Please note that preprints can be shared anywhere at any time, in line with Elsevier's sharing policy. Sharing your preprints e.g. on a preprint server will not count as prior publication (see 'Multiple, redundant or concurrent publication' for more information).

Use of inclusive language
Inclusive language acknowledges diversity, conveys respect to all people, is sensitive to differences, and promotes equal opportunities. Content should make no assumptions about the beliefs or commitments of any reader; contain nothing which might imply that one individual is superior to another on the grounds of age, gender, race, ethnicity, culture, sexual orientation, disability or health condition; and use inclusive language throughout. Authors should ensure that writing is free from bias, stereotypes, slang, reference to dominant culture and/or cultural assumptions. We advise to seek gender neutrality by using plural nouns (“clinicians, patients/clients”) as default/wherever possible to avoid using "he, she," or "he/she." We recommend avoiding the use of descriptors that refer to personal attributes such as age, gender, race, ethnicity, culture, sexual orientation, disability or health condition unless they are relevant and valid. These guidelines are meant as a point of reference to help identify appropriate language but are by no means exhaustive or definitive.

Changes to authorship
Authors are expected to consider carefully the list and order of authors before submitting their manuscript and provide the definitive list of authors at the time of the original submission. Any addition, deletion or rearrangement of author names in the authorship list should be made only before the manuscript has been accepted and only if approved by the journal Editor. To request such a change, the Editor must receive the following from the corresponding author: (a) the reason for the change in author list and (b) written confirmation (e-mail, letter) from all authors that they agree with the addition, removal or rearrangement. In the case of addition or removal of authors, this includes confirmation from the author being added or removed.

Only in exceptional circumstances will the Editor consider the addition, deletion or rearrangement of authors after the manuscript has been accepted. While the Editor considers the request, publication of the manuscript will be suspended. If the manuscript has already been published in an online issue, any requests approved by the Editor will result in a corrigendum.
**Clinical trial results**
In line with the position of the International Committee of Medical Journal Editors, the journal will not consider results posted in the same clinical trials registry in which primary registration resides to be prior publication if the results posted are presented in the form of a brief structured (less than 500 words) abstract or table. However, divulging results in other circumstances (e.g., investors' meetings) is discouraged and may jeopardise consideration of the manuscript. Authors should fully disclose all posting in registries of results of the same or closely related work.

**Copyright**
Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (see more information on this). Permitted third party reuse of open access articles is determined by the author's choice of user license.

**Author rights**
As an author you (or your employer or institution) have certain rights to reuse your work. More information.

*Elsevier supports responsible sharing*
Find out how you can share your research published in Elsevier journals.

**Role of the funding source**
You are requested to identify who provided financial support for the conduct of the research and/or preparation of the article and to briefly describe the role of the sponsor(s), if any, in study design; in the collection, analysis and interpretation of data; in the writing of the report; and in the decision to submit the article for publication. If the funding source(s) had no such involvement then this should be stated.

**Open access**
Please visit our Open Access page for more information.

*Elsevier Researcher Academy*
Researcher Academy is a free e-learning platform designed to support early and mid-career researchers throughout their research journey. The "Learn" environment at Researcher Academy offers several interactive modules, webinars, downloadable guides and resources to guide you through the process of writing for research and going through peer review. Feel free to use these free resources to improve your submission and navigate the publication process with ease.

**Language (usage and editing services)**
Please write your text in good English (American or British usage is accepted, but not a mixture of these). Authors who feel their English language manuscript may require editing to eliminate possible grammatical or spelling errors and to conform to correct scientific English may wish to use the English Language Editing service available from Elsevier's Author Services.

**Informed consent and patient details**
For studies where client-owned animals have been used, informed written client consent must have been obtained prior to the research being carried out and this should be clearly detailed in the paper.

Studies on patients or volunteers require ethics committee approval and informed consent, which should be documented in the paper. Appropriate consents, permissions and releases must be obtained where an author wishes to include case details or other personal information or images of patients and any other individuals in an Elsevier publication. Written consents must be retained by the author and copies of the consents or evidence that such consents have been obtained must be provided to Elsevier on request. For more information, please review the *Elsevier Policy on the Use of Images or Personal Information of Patients or other Individuals*, [https://www.elsevier.com/patient-consent-policy](https://www.elsevier.com/patient-consent-policy). Unless you have written permission from the patient (or, where applicable, the next of kin), the personal details of any patient included in any part of the article and in any supplementary materials (including all illustrations and videos) must be removed before submission.
Submission
Our online submission system guides you stepwise through the process of entering your article details and uploading your files. The system converts your article files to a single PDF file used in the peer-review process. Editable files (e.g., Word, LaTeX) are required to typeset your article for final publication. All correspondence, including notification of the Editor's decision and requests for revision, is sent by e-mail.

Referees
Please submit the names and institutional e-mail addresses of several potential referees. For more details, visit our Support site. Note that the editor retains the sole right to decide whether or not the suggested reviewers are used.

PREPARATION

Peer review
This journal operates a single anonymized review process. All contributions are typically sent to a minimum of two independent expert reviewers to assess the scientific quality of the paper. The Editor is responsible for the final decision regarding acceptance or rejection of articles. The Editor's decision is final. Editors are not involved in decisions about papers which they have written themselves or have been written by family members or colleagues or which relate to products or services in which the editor has an interest. Any such submission is subject to all of the journal's usual procedures, with peer review handled independently of the relevant editor and their research groups. More information on types of peer review.

Use of word processing software
It is important that the file be saved in the native format of the word processor used. The text should be in single-column format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. In particular, do not use the word processor's options to justify text or to hyphenate words. However, do use bold face, italics, subscripts, superscripts etc. When preparing tables, if you are using a table grid, use only one grid for each individual table and not a grid for each row. If no grid is used, use tabs, not spaces, to align columns. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier). Note that source files of figures, tables and text graphics will be required whether or not you embed your figures in the text. See also the section on Electronic artwork.
To avoid unnecessary errors you are strongly advised to use the 'spell-check' and 'grammar-check' functions of your word processor.

Article structure
Subdivision - numbered sections
Divide your article into clearly defined and numbered sections. Subsections should be numbered 1.1 (then 1.1.1, 1.1.2, ...), 1.2, etc. (the abstract is not included in section numbering). Use this numbering also for internal cross-referencing: do not just refer to 'the text'. Any subsection may be given a brief heading. Each heading should appear on its own separate line.

Introduction
State the objectives of the work and provide an adequate background, avoiding a detailed literature survey or a summary of the results.

Material and methods
Provide sufficient details to allow the work to be reproduced by an independent researcher. Methods that are already published should be summarized, and indicated by a reference. If quoting directly from a previously published method, use quotation marks and also cite the source. Any modifications to existing methods should also be described.

Results
Results should be clear and concise.

Discussion
This should explore the significance of the results of the work, not repeat them. A combined Results and Discussion section is often appropriate. Avoid extensive citations and discussion of published literature.
Conclusions
The main conclusions of the study may be presented in a short Conclusions section, which may stand alone or form a subsection of a Discussion or Results and Discussion section.

Appendices
If there is more than one appendix, they should be identified as A, B, etc. Formulae and equations in appendices should be given separate numbering: Eq. (A.1), Eq. (A.2), etc.; in a subsequent appendix, Eq. (B.1) and so on. Similarly for tables and figures: Table A.1; Fig. A.1, etc.

Essential title page information

• Title. Concise and informative. Titles are often used in information-retrieval systems. Avoid abbreviations and formulae where possible. Consider including keywords to help with the online discoverability of your article.

• Author names and affiliations. Please clearly indicate the given name(s) and family name(s) of each author and check that all names are accurately spelled. Present the authors’ affiliation addresses (where the actual work was done) below the names. Indicate all affiliations with a lowercase superscript letter immediately after the author's name and in front of the appropriate address. Provide the full postal address of each affiliation, including the country name and, if available, the e-mail address of each author.

• Corresponding author. Clearly indicate who will handle correspondence at all stages of refereeing and publication, also post-publication. Ensure that the e-mail address is given and that contact details are kept up to date by the corresponding author.

• Present/permanent address. If an author has moved since the work described in the article was done, or was visiting at the time, a 'Present address' (or 'Permanent address') may be indicated as a footnote to that author's name. The address at which the author actually did the work must be retained as the main, affiliation address. Superscript Arabic numerals are used for such footnotes.

Highlights
Highlights are optional yet highly encouraged for this journal, as they increase the discoverability of your article via search engines. They consist of a short collection of bullet points that capture the novel results of your research as well as new methods that were used during the study (if any). Please have a look at the examples here: example Highlights.

Highlights should be submitted in a separate editable file in the online submission system. Please use 'Highlights' in the file name and include 3 to 5 bullet points (maximum 85 characters, including spaces, per bullet point).

Abstract
A concise and factual abstract is required. The abstract should state briefly the purpose of the research, the principal results and major conclusions. An abstract is often presented separately from the article, so it must be able to stand alone. For this reason, references should be avoided, but if essential, then cite the author(s) and year(s). Also, non-standard or uncommon abbreviations should be avoided, but if essential they must be defined at their first mention in the abstract itself.

Graphical abstract
Although a graphical abstract is optional, its use is encouraged as it draws more attention to the online article. The graphical abstract should summarise the contents of the article in a concise, pictorial form designed to capture the attention of a wide readership. Graphical abstracts should be submitted as a separate file in the online submission system. Image size: Please provide an image with a minimum of 531 × 1328 pixels (h × w) or proportionally more. The image should be readable at a size of 5 × 13 cm using a regular screen resolution of 96 dpi. Preferred file types: TIFF, EPS, PDF or MS Office files. See https://www.elsevier.com/graphicalabstracts for examples.

Authors can make use of Elsevier’s Illustration and Enhancement service to ensure the best presentation of their images and in accordance with all technical requirements: Illustration Service.

Keywords
Immediately after the abstract, provide a maximum of 6 keywords, using British or American spelling and avoiding general and plural terms and multiple concepts (avoid, for example, 'and', 'of'). Be sparing with abbreviations: only abbreviations firmly established in the field may be eligible. These keywords will be used for indexing purposes.
Abbreviations
Define abbreviations that are not standard in this field in a footnote to be placed on the first page of the article. Such abbreviations that are unavoidable in the abstract must be defined at their first mention there, as well as in the footnote. Ensure consistency of abbreviations throughout the article.

Acknowledgements
Collate acknowledgements in a separate section at the end of the article before the references and do not, therefore, include them on the title page, as a footnote to the title or otherwise. List here those individuals who provided help during the research (e.g., providing language help, writing assistance or proof reading the article, etc.).

Formatting of funding sources
List funding sources in this standard way to facilitate compliance to funder's requirements:

Funding: This work was supported by the National Institutes of Health [grant numbers xxxx, yyyy]; the Bill & Melinda Gates Foundation, Seattle, WA [grant number zzzz]; and the United States Institutes of Peace [grant number aaaa].

It is not necessary to include detailed descriptions on the program or type of grants and awards. When funding is from a block grant or other resources available to a university, college, or other research institution, submit the name of the institute or organization that provided the funding.

If no funding has been provided for the research, please include the following sentence:

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

Units
Follow internationally accepted rules and conventions: use the international system of units (SI). If other units are mentioned, please give their equivalent in SI.

Math formulae
Please submit math equations as editable text and not as images. Present simple formulae in line with normal text where possible and use the solidus (/) instead of a horizontal line for small fractional terms, e.g., X/Y. In principle, variables are to be presented in italics. Powers of e are often more conveniently denoted by exp. Number consecutively any equations that have to be displayed separately from the text (if referred to explicitly in the text).

Footnotes
Footnotes should be used sparingly. Number them consecutively throughout the article. Many word processors can build footnotes into the text, and this feature may be used. Otherwise, please indicate the position of footnotes in the text and list the footnotes themselves separately at the end of the article. Do not include footnotes in the Reference list.

Artwork
Electronic artwork
General points
• Make sure you use uniform lettering and sizing of your original artwork.
• Embed the used fonts if the application provides that option.
• Aim to use the following fonts in your illustrations: Arial, Courier, Times New Roman, Symbol, or use fonts that look similar.
• Number the illustrations according to their sequence in the text.
• Use a logical naming convention for your artwork files.
• Provide captions to illustrations separately.
• Size the illustrations close to the desired dimensions of the published version.
• Submit each illustration as a separate file.
A detailed guide on electronic artwork is available on our website: https://www.elsevier.com/artworkinstructions.

You are urged to visit this site; some excerpts from the detailed information are given here.

Formats
If your electronic artwork is created in a Microsoft Office application (Word, PowerPoint, Excel) then please supply 'as is' in the native document format.
Regardless of the application used other than Microsoft Office, when your electronic artwork is finalised, please 'Save as' or convert the images to one of the following formats (note the resolution requirements for line drawings, halftones, and line/halftone combinations given below):

- **EPS (or PDF):** Vector drawings, embed all used fonts.
- **TIFF (or JPEG):** Colour or grayscale photographs (halftones), keep to a minimum of 300 dpi.
- **TIFF (or JPEG):** Bitmapped (pure black & white pixels) line drawings, keep to a minimum of 1000 dpi.
- **TIFF (or JPEG):** Combinations bitmapped line/halftone (colour or grayscale), keep to a minimum of 500 dpi.

**Please do not:**
- Supply files that are optimised for screen use (e.g., GIF, BMP, PICT, WPG); these typically have a low number of pixels and limited set of colours;
- Supply files that are too low in resolution;
- Submit graphics that are disproportionately large for the content.

**Colour artwork**
Please make sure that artwork files are in an acceptable format (TIFF (or JPEG), EPS (or PDF), or MS Office files) and with the correct resolution. If, together with your accepted article, you submit usable colour figures then Elsevier will ensure, at no additional charge, that these figures will appear in colour online (e.g., ScienceDirect and other sites). For further information on the preparation of electronic artwork, please see [https://www.elsevier.com/artworkinstructions](https://www.elsevier.com/artworkinstructions).

**Illustration services**
Elsevier's Author Services offers Illustration Services to authors preparing to submit a manuscript but concerned about the quality of the images accompanying their article. Elsevier's expert illustrators can produce scientific, technical and medical-style images, as well as a full range of charts, tables and graphs. Image 'polishing' is also available, where our illustrators take your image(s) and improve them to a professional standard. Please visit the website to find out more.

**Figure captions**
Ensure that each illustration has a caption. Supply captions separately, not attached to the figure. A caption should comprise a brief title *(not on the figure itself)* and a description of the illustration. Keep text in the illustrations themselves to a minimum but explain all symbols and abbreviations used.

**Tables**
Please submit tables as editable text and not as images. Tables can be placed either next to the relevant text in the article, or on separate page(s) at the end. Number tables consecutively in accordance with their appearance in the text and place any table notes below the table body. Be sparing in the use of tables and ensure that the data presented in them do not duplicate results described elsewhere in the article. Please avoid using vertical rules and shading in table cells.

**References**

**Citation in text**
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications are not recommended in the reference list, but may be mentioned in the text. If these references are included in the reference list they should follow the standard reference style of the journal and should include a substitution of the publication date with either 'Unpublished results' or 'Personal communication'. Citation of a reference as 'in press' implies that the item has been accepted for publication.

**Reference links**
Increased discoverability of research and high quality peer review are ensured by online links to the sources cited. In order to allow us to create links to abstracting and indexing services, such as Scopus, CrossRef and PubMed, please ensure that data provided in the references are correct. Please note that incorrect surnames, journal/book titles, publication year and pagination may prevent link creation. When copying references, please be careful as they may already contain errors. Use of the DOI is highly encouraged.

A DOI is guaranteed never to change, so you can use it as a permanent link to any electronic article. An example of a citation using DOI for an article not yet in an issue is: VanDecar J.C., Russo R.M., James D.E., Ambeh W.B., Franke M. (2003). Aseismic continuation of the Lesser Antilles slab beneath northeastern Venezuela. Journal of Geophysical Research, https://doi.org/10.1029/2001JB000884. Please note the format of such citations should be in the same style as all other references in the paper.
Web references
As a minimum, the full URL should be given and the date when the reference was last accessed. Any further information, if known (DOI, author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Data references
This journal encourages you to cite underlying or relevant datasets in your manuscript by citing them in your text and including a data reference in your Reference List. Data references should include the following elements: author name(s), dataset title, data repository, version (where available), year, and global persistent identifier. Add [dataset] immediately before the reference so we can properly identify it as a data reference. The [dataset] identifier will not appear in your published article.

References in a special issue
Please ensure that the words 'this issue' are added to any references in the list (and any citations in the text) to other articles in the same Special Issue.

Reference management software
Most Elsevier journals have their reference template available in many of the most popular reference management software products. These include all products that support Citation Style Language styles, such as Mendeley. Using citation plug-ins from these products, authors only need to select the appropriate journal template when preparing their article, after which citations and bibliographies will be automatically formatted in the journal’s style. If no template is yet available for this journal, please follow the format of the sample references and citations as shown in this Guide. If you use reference management software, please ensure that you remove all field codes before submitting the electronic manuscript. More information on how to remove field codes from different reference management software.

Reference style
List: references should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters 'a', 'b', 'c', etc., placed after the year of publication.
Examples:
Reference to a journal publication:
Reference to a journal publication with an article number:
Reference to a book:
Reference to a chapter in an edited book:
Reference to a website:
Reference to a dataset:
Reference to a conference paper or poster presentation:

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations.
**Video data**
Elsevier accepts video material and animation sequences to support and enhance your scientific research. Authors who have video or animation files that they wish to submit with their article are strongly encouraged to include links to these within the body of the article. This can be done in the same way as a figure or table by referring to the video or animation content and noting in the body text where it should be placed. All submitted files should be properly labelled so that they directly relate to the video file's content. In order to ensure that your video or animation material is directly usable, please provide the files in one of our recommended file formats with a preferred maximum size of 150 MB. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect: http://www.sciencedirect.com. Please supply 'stills' with your files: you can choose any frame from the video or animation or make a separate image. These will be used instead of standard icons and will personalise the link to your video data. For more detailed instructions please visit our video instruction pages at https://www.elsevier.com/artworkinstructions.

**Supplementary material**
Supplementary material such as applications, images and sound clips, can be published with your article to enhance it. Submitted supplementary items are published exactly as they are received (Excel or PowerPoint files will appear as such online). Please submit your material together with the article and supply a concise, descriptive caption for each supplementary file. If you wish to make changes to supplementary material during any stage of the process, please make sure to provide an updated file. Do not annotate any corrections on a previous version. Please switch off the 'Track Changes' option in Microsoft Office files as these will appear in the published version.

**Research data**
This journal encourages and enables you to share data that supports your research publication where appropriate, and enables you to interlink the data with your published articles. Research data refers to the results of observations or experimentation that validate research findings. To facilitate reproducibility and data reuse, this journal also encourages you to share your software, code, models, algorithms, protocols, methods and other useful materials related to the project.

Below are a number of ways in which you can associate data with your article or make a statement about the availability of your data when submitting your manuscript. If you are sharing data in one of these ways, you are encouraged to cite the data in your manuscript and reference list. Please refer to the "References" section for more information about data citation. For more information on depositing, sharing and using research data and other relevant research materials, visit the research data page.

**Data linking**
If you have made your research data available in a data repository, you can link your article directly to the dataset. Elsevier collaborates with a number of repositories to link articles on ScienceDirect with relevant repositories, giving readers access to underlying data that gives them a better understanding of the research described.

There are different ways to link your datasets to your article. When available, you can directly link your dataset to your article by providing the relevant information in the submission system. For more information, visit the database linking page.

For supported data repositories a repository banner will automatically appear next to your published article on ScienceDirect.

In addition, you can link to relevant data or entities through identifiers within the text of your manuscript, using the following format: Database: xxxx (e.g., TAIR: AT1G01020; CCDC: 734053; PDB: 1XFN).

**Mendeley Data**
This journal supports Mendeley Data, enabling you to deposit any research data (including raw and processed data, video, code, software, algorithms, protocols, and methods) associated with your manuscript in a free-to-use, open access repository. During the submission process, after uploading your manuscript, you will have the opportunity to upload your relevant datasets directly to Mendeley Data. The datasets will be listed and directly accessible to readers next to your published article online.

For more information, visit the Mendeley Data for journals page.
Data statement
To foster transparency, we encourage you to state the availability of your data in your submission. This may be a requirement of your funding body or institution. If your data is unavailable to access or unsuitable to post, you will have the opportunity to indicate why during the submission process, for example by stating that the research data is confidential. The statement will appear with your published article on ScienceDirect. For more information, visit the Data Statement page.

Submission checklist
The following list will be useful during the final checking of an article prior to sending it to the journal for review. Please consult this Guide for Authors for further details of any item.

Ensure that the following items are present:
One author has been designated as the corresponding author with contact details:
• E-mail address
• Full postal address
All necessary files have been uploaded, and contain:
• Keywords
• All figure captions
• All tables (including title, description, footnotes)
Further considerations
• Manuscript has been 'spell-checked' and 'grammar-checked'
• References are in the correct format for this journal
• All references mentioned in the Reference list are cited in the text, and vice versa
• Permission has been obtained for use of copyrighted material from other sources (including the Internet)
Printed version of figures (if applicable) in colour or black-and-white
• Indicate clearly whether or not colour or black-and-white in print is required.
For any further information please visit our customer support site at https://service.elsevier.com.

AFTER ACCEPTANCE

Online proof correction
To ensure a fast publication process of the article, we kindly ask authors to provide us with their proof corrections within two days. Corresponding authors will receive an e-mail with a link to our online proofing system, allowing annotation and correction of proofs online. The environment is similar to MS Word: in addition to editing text, you can also comment on figures/tables and answer questions from the Copy Editor. Web-based proofing provides a faster and less error-prone process by allowing you to directly type your corrections, eliminating the potential introduction of errors.
If preferred, you can still choose to annotate and upload your edits on the PDF version. All instructions for proofing will be given in the e-mail we send to authors, including alternative methods to the online version and PDF.
We will do everything possible to get your article published quickly and accurately. Please use this proof only for checking the typesetting, editing, completeness and correctness of the text, tables and figures. Significant changes to the article as accepted for publication will only be considered at this stage with permission from the Editor. It is important to ensure that all corrections are sent back to us in one communication. Please check carefully before replying, as inclusion of any subsequent corrections cannot be guaranteed. Proofreading is solely your responsibility.

Offprints
The corresponding author will be notified and receive a link to the published version of the open access article on ScienceDirect. This link is in the form of an article DOI link which can be shared via email and social networks. For an extra charge, paper offprints can be ordered via the offprint order form which is sent once the article is accepted for publication. Both corresponding and co-authors may order offprints at any time via Elsevier's Author Services.

Author Inquiries
Visit the Elsevier Support Center to find the answers you need. Here you will find everything from Frequently Asked Questions to ways to get in touch.
You can also check the status of your submitted article or find out when your accepted article will be published.

© Copyright 2018 Elsevier | https://www.elsevier.com