Anaerobe is essential reading for those wishing to remain at the forefront of discoveries relating to life processes of strict anaerobes. Created especially for the international community, it addresses the needs of those working on a group of organisms of exceptional academic, economic, medical, and veterinary importance. The journal is multi-disciplinary, and provides a unique forum for those investigating infections caused by anaerobic bacteria in humans and animals.

Anaerobe publishes original research articles, notes and case reports. Reviews and mini reviews are welcome at the invitation of the editor. Relevant topics fall into the broad categories of Anaerobes in human and animal diseases, Anaerobes in the microbiome, Anaerobes in the environment, Diagnosis of anaerobes in clinical microbiology laboratories, Molecular biology, Genetics, Pathogenesis, Toxins and Antibiotic Susceptibility of Anaerobic Bacteria.

Papers describing innovative methodologies, technologies, and applications to investigate strict anaerobic bacteria are also of interest. Manuscripts describing new species of obligate anaerobes will be reviewed if the description of the new species also includes information showing novel phenotypic characteristics, pathogenicity and/or unique metabolic activity within the microbiome from which it was isolated. New anaerobic species that are only different from other related members of a genus based on genomic information will not be reviewed.

Please note:

Anaerobe is no longer accepting manuscripts on descriptive, sequence-based surveys of microbiomes, even if the environments of the sampled ecosystems select for anaerobic species. However, when studies such as these are accompanied by direct, mechanistic assays of strictly anaerobic components, they will be considered for publication. Anaerobe will also not consider manuscripts that deal only with descriptive accounts of the beneficial effects of potentially novel probiotic strains, unless such strains belong to strictly anaerobic species that have previously not been associated with probiotic features. Anaerobe will continue to consider manuscripts for publication that address determinations of the specific mechanism(s) of action of all strictly anaerobic probiotic strains.

Benefits to authors
We also provide many author benefits, such as free PDFs, a liberal copyright policy, special discounts on Elsevier publications and much more. Please click here for more information on our author services.
Please see our Guide for Authors for information on article submission. If you require any further information or help, please visit our Support Center

**IMPACT FACTOR**

2018: 2.704 © Clarivate Analytics Journal Citation Reports 2019

**ABSTRACTING AND INDEXING**

Scopus
PubMed/Medline
Current Contents - Life Sciences
Chemical Abstracts
Emerald
Emerald
Current Contents - Agriculture, Biology & Environmental Sciences
Web of Science
Research Alert
Chemical Engineering Biotechnology Abstracts
BIOSIS Citation Index

**EDITORIAL BOARD**

*Editor-in-Chief*
E. Nagy, University of Szeged, Szeged, Hungary

*Associate Editors*

**Molecular Biology and Genetics**
M.J. Gillespie, Southern Illinois University System, Alton, Illinois, United States
D. Lyras, Monash University, Clayton, Australia
V. O. Rotimi, Kuwait University Faculty of Medicine, Safat, Kuwait

**Anaerobes in the Microbiome**
E. Allen-Vercoe, University of Guelph, Guelph, Ontario, Canada
A.B. Onderdonk, Harvard Medical School, Boston, Massachusetts, United States

**Clinical Microbiology**
L. Boyanova, Medical University of Sofia, Sofia, Bulgaria
W. Jamal, Kuwait University, Kuwait, Kuwait
A. Schuetz, Mayo Clinic College of Medicine and Science, Rochester, Minnesota, United States

**Anaerobes in Human Infections (including dental/oral infections)**
Y. W. Han, Columbia University, New York, New York, United States
R.M.C.P Domingues, Federal University of Rio de Janeiro, Rio de Janeiro, Rio de Janeiro, Brazil
K. Tanaka, Gifu University, Gifu, Japan

**Anaerobes in Animal Disease**
T.G. Nagaraja, Kansas State University, Manhattan, Kansas, United States
F.A. Uzal, California Animal Health and Food Safety Laboratory System, San Bernardino, California, United States

**Antimicrobial Susceptibility of Anaerobic Bacteria**
P. I. Eke, Centers for Disease Control and Prevention, Atlanta, United States
J. Soki, University of Szeged, Szeged, Hungary

**C. difficile**
S. Johnson, LOYOLA UNIVERSITY MEDICAL CENTER, Illinois, United States
P. Mastrantonio, National Institute of Health, Roma, Italy
M. Rupnik, National Laboratory of Health Environment and Food, Maribor, Slovenia

**Pathogenesis and Toxins**
C. Coursodon Boyiddle, Ventana Medical Systems Inc, Tucson, Arizona, USA
Companion Diagnostics Assay Development, A Member of the Roche Group
Anaerobes in the Environment
K.L. Kovács, University of Szeged, Szeged, Hungary

Case Reports
E.J.C. Goldstein, Alden Research Laboratory Inc, Culver City, California, United States
H. Pituch, Medical University of Warsaw, Warszawa, Poland

Publication Committee
E.J.C. Goldstein, University of California at Los Angeles (UCLA), R.M. Alden Research, Culver City, California, United States
S.G. Jenkins, NEW YORK PRESBYTERIAN HOSPITAL, New York, New York, United States
C.E. Nord, Karolinska Institute, Stockholm, Sweden
H. Mikamo, Aichi Medical University, Aichi-Gun, Japan

Editorial Board
V.R. Abratt, Rondebosch, South Africa
D. Aronoff, Nashville, Tennessee, United States
E. Bezirtzoglou, Orestiada, Greece
M.C. Claros, Rotkreuz, Switzerland
G. Conrads, Aachen, Germany
M. Cox, Morgan Hill, California, United States
L.M Cox, Morgan Hill, California, United States
L. Dubreuil, Lille cedex, France
R. Fagan, Sheffield, United Kingdom
E. Ferreira, Rio de Janeiro, Rio de Janeiro, Brazil
R. N. Fichorova, Boston, Massachusetts, United States
D. N. Fredricks, Seattle, Washington, USA
D.W. Hecht, Maywood, Illinois, United States
M. Hedberg, Umeå, Sweden
S. Hillier, Pittsburgh, Pennsylvania, United States
H. Insam, Innsbruck, Austria
E.A Johnson, Madison, Wisconsin, United States
S. Johnson, Maywood, Illinois, United States
W-C Ko, Tainan, Taiwan
E. Kononen, TURKU, Finland
S. Lau, Pokfulam, Hong Kong
B. Lorber, Philadelphia, Pennsylvania, United States
M.H. Malamy, Boston, Massachusetts, United States
H. Marchandin, Montpellier, France
J. Marrazzo, Birmingham, Alabama, United States
B. McClane, Pittsburgh, Pennsylvania, United States
T. Morris, Cardiff, United Kingdom
J. Papaparaskevas, Athina, Greece
D. Raoult, Paris, France
E. R. Rocha, Greenville, North Carolina, United States
J.I. Rood, Clayton, Australia
C. Sears, Baltimore, Maryland, United States
Y. Song, Los Angeles, California, United States
T.B. Stanton, Ames, Iowa, United States
D. Stevens, Boise, Idaho, United States
K.L Tyrrell, Culver City, California, USA
E. Urbán, Szeged, Hungary
J.S. Weese, Guelph, Ontario, Canada
H.M. Wexler, Los Angeles, California, United States
GUIDE FOR AUTHORS

INTRODUCTION

Anaerobe welcomes original papers on all areas of research related to biological activities in strictly anaerobic or microaerophilic environments. Studies pertaining to obligate anaerobes only are encouraged. The journal will consider original reports in the areas of human and animal infectious disease, pathogenesis, immunology, antimicrobial agents, epidemiology, and vaccines. Manuscripts dealing with physiology, taxonomy, systematics, molecular biology, ecology and evolution, genetics, and normal flora, as these topics pertain to clinical disease and pathogenesis, will also be considered. Manuscripts on describing innovative methodologies, technologies, and applications are also of interest.

Anaerobe publishes original research articles, notes, and case reports. Relevant topics fall into the broad categories of Anaerobes in human and animal diseases, Anaerobes in the microbiome, Anaerobes in the environment, Diagnosis of anaerobes in clinical microbiology laboratories, Molecular biology, Genetics, Pathogenesis, Toxins and Antibiotic Susceptibility of Anaerobic Bacteria. Notes are for presentation of brief observations not warranting a full-length publication, but are not considered preliminary communications. They receive the same review and are not ordinarily published more rapidly than other papers. Notes should have an abstract of ~ 50 words, and introduction, methods, results, discussion, and acknowledgements should be combined in a single section with no headings. Use no more than three figures and tables, and do not place materials and methods in figure legends or table footnotes. The references section is identical to that in full-length papers. Overall length should not exceed 1,500 words. Submit as usual through the Elsevier Editorial System. Proposals for reviews and mini reviews are welcomed; contact the editor with a prospective title and outline.

Case Reports

These submissions should be case reports of unusual merit that report new information. Manuscripts must be brief, with no more than four illustrations. Case reports are typically 1500 words in length, plus references (about 2000 words total).

Notes

Notes are for presentation of brief observations not warranting a full-length publication, and are not considered preliminary communications. They receive the same review and are not ordinarily published more rapidly than other papers. Notes should have an abstract ? 50 words, and introduction, methods, results, discussion, and acknowledgements should be combined in a single section with no headings. Use no more than three figures and tables, and do not place materials and methods in figure legends or table footnotes. The references section is identical to that in full-length papers. Overall length should not exceed 1,500 words. Submit as usual through the Elsevier Editorial System.

The Official Journal of the Anaerobe Society of the Americas, and the Japanese Association for Anaerobic Infection Research

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.

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:
Manuscript:
- Include keywords
- All figures (include relevant captions)
- All tables (including titles, description, footnotes)
- Ensure all figure and table citations in the text match the files provided
- Indicate clearly if color should be used for any figures in print
Graphical Abstracts / Highlights files (where applicable)
Supplemental files (where applicable)

Further considerations
- Manuscript has been 'spell checked' and 'grammar checked'
- 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)
- A competing interests statement is provided, even if the authors have no competing interests to declare
- 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.

Revised Submissions
All revised submissions are subject to the same guidelines as above. In addition, authors must:
1. Give detailed responses to reviewer remarks.
2. Highlight changes in the text

BEFORE YOU BEGIN

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

Declaration of 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 complete the declaration of interest statement using this template and upload to the submission system at the Attach/Upload Files step. If there are no interests to declare, please choose: 'Declarations of interest: none' in the template. This statement will be published within the article if accepted. More information.

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. Articles should make no assumptions about the beliefs or commitments of any reader, should contain nothing which might imply that one individual is superior to another on the grounds of race, sex, culture or any other characteristic, and should use inclusive language throughout. Authors should ensure that writing is free from bias, for instance by using 'he or she', 'his/her' instead of 'he' or 'his', and by making use of job titles that are free of stereotyping (e.g. 'chairperson' instead of 'chairman' and 'flight attendant' instead of 'stewardess').

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.

**Copyright**

Upon acceptance of an article, authors will be asked to complete a 'Journal Publishing Agreement' (see more information on this). An e-mail will be sent to the corresponding author confirming receipt of the manuscript together with a 'Journal Publishing Agreement' form or a link to the online version of this agreement.

Subscribers may reproduce tables of contents or prepare lists of articles including abstracts for internal circulation within their institutions. Permission of the Publisher is required for resale or distribution outside the institution and for all other derivative works, including compilations and translations. If excerpts from other copyrighted works are included, the author(s) must obtain written permission from the copyright owners and credit the source(s) in the article. Elsevier has preprinted forms for use by authors in these cases.

For gold open access articles: Upon acceptance of an article, authors will be asked to complete an 'Exclusive License Agreement' (more information). Permitted third party reuse of gold 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.

**Funding body agreements and policies**  
Elsevier has established a number of agreements with funding bodies which allow authors to comply with their funder's open access policies. Some funding bodies will reimburse the author for the gold open access publication fee. Details of existing agreements are available online.

**Open access**

This journal offers authors a choice in publishing their research:

**Subscription**  
- Articles are made available to subscribers as well as developing countries and patient groups through our universal access programs.
- No open access publication fee payable by authors.
- The Author is entitled to post the accepted manuscript in their institution's repository and make this public after an embargo period (known as green Open Access). The published journal article cannot be shared publicly, for example on ResearchGate or Academia.edu, to ensure the sustainability of peer-reviewed research in journal publications. The embargo period for this journal can be found below.

**Gold open access**  
- Articles are freely available to both subscribers and the wider public with permitted reuse.
- A gold open access publication fee is payable by authors or on their behalf, e.g. by their research funder or institution.

Regardless of how you choose to publish your article, the journal will apply the same peer review criteria and acceptance standards.
For gold open access articles, permitted third party (re)use is defined by the following Creative Commons user licenses:

**Creative Commons Attribution (CC BY)**
Lets others distribute and copy the article, create extracts, abstracts, and other revised versions, adaptations or derivative works of or from an article (such as a translation), include in a collective work (such as an anthology), text or data mine the article, even for commercial purposes, as long as they credit the author(s), do not represent the author as endorsing their adaptation of the article, and do not modify the article in such a way as to damage the author's honor or reputation.

**Creative Commons Attribution-NonCommercial-NoDerivs (CC BY-NC-ND)**
For non-commercial purposes, lets others distribute and copy the article, and to include in a collective work (such as an anthology), as long as they credit the author(s) and provided they do not alter or modify the article.

The gold open access publication fee for this journal is **USD 1850**, excluding taxes. Learn more about Elsevier's pricing policy: [https://www.elsevier.com/openaccesspricing](https://www.elsevier.com/openaccesspricing).

**Green open access**
Authors can share their research in a variety of different ways and Elsevier has a number of green open access options available. We recommend authors see our open access page for further information. Authors can also self-archive their manuscripts immediately and enable public access from their institution's repository after an embargo period. This is the version that has been accepted for publication and which typically includes author-incorporated changes suggested during submission, peer review and in editor-author communications. Embargo period: For subscription articles, an appropriate amount of time is needed for journals to deliver value to subscribing customers before an article becomes freely available to the public. This is the embargo period and it begins from the date the article is formally published online in its final and fully citable form. Find out more.

This journal has an embargo period of 12 months.

**English language**
Anaerobe can only consider manuscripts for publication that are grammatically correct and as far as possible, free from typos and other spelling errors. If English is not the first language of the authors, in order to avoid delays in the manuscript review process and to reduce the burden of work on reviewers, it is strongly suggested that an English proof reading service, such as that provided by Elsevier [http://webshop.elsevier.com/languageediting/] is used. Your manuscript may be rejected before review if there are significant grammatical and spelling errors that preclude understanding of the work.

**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, which is 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**

**SUBMISSIONS**
Submission to this journal proceeds totally online and you will be guided stepwise through the creation and uploading of your files. The system automatically converts your files to a single PDF file, which is used in the peer-review process.

As part of the Your Paper Your Way service, you may choose to submit your manuscript as a single file to be used in the refereeing process. This can be a PDF file or a Word document, in a format laid out below. It should contain high enough quality figures for refereeing. If you prefer to do so, you may still provide all or some of the source files at the initial submission. Please note that individual figure files larger than 10 MB must be uploaded separately.
References

There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct.

Important Formatting requirements

There are minimal article formatting requirements for new submissions that are simple to perform and universally used by most journals to facilitate reading and evaluating. All manuscripts must contain the essential elements needed to convey your manuscript, including Abstract, Keywords, Introduction, Materials and Methods, Results, Conclusions, and References. See Revised Submission instructions for content guidelines for full-length papers, notes, case reports, etc.

Text should be 12 point, double-spaced and left-justified. Number all pages in sequence, including the abstract, figure legends, and tables at the end of the manuscript. Latin names such as genus and species names should be italicized. Please ensure that you include line numbering in your submission. Please ensure the figures and the tables are placed in order of appearance at the end of the article. If your article includes any Videos and/or other Supplementary material, this should be included in your initial submission for peer review purposes.

Peer review

This journal operates a single blind review process. All contributions will be initially assessed by the editor for suitability for the journal. Papers deemed suitable are then 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. More information on types of peer review.

Use of word processing software

Word processing software should be used to submit an article in editable file format. Keep the layout of the text as simple as possible. Most formatting codes will be removed and replaced on processing the article. The electronic text should be prepared in a way very similar to that of conventional manuscripts (see also the Guide to Publishing with Elsevier: https://www.elsevier.com/guidepublication). 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

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 detail to allow the work to be reproduced. If methods have been previously published, they should be described briefly and then referenced. Relevant modifications should be described.

Results
Results should be clear and concise.

Discussion
This should explore the significance of the results of the work, (compared with the published results of other authors working on the same field) but not repeat results described in the previous section. 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.
- **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. You can add your name between parentheses in your own script behind the English transliteration. 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. This responsibility includes answering any future queries about Methodology and Materials. **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 mandatory for this journal as they help 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 summarize 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 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](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 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.

**Nomenclature and Units**

The complete Latin name (genus, species, authority, together with cultivar, strain or culture number where appropriate) should be cited for every organism at first mention. Thereafter the generic name may be abbreviated to the initial except where this could cause confusion. No further abbreviation is permitted.

**Nomenclature of Microorganisms**

Bacterial names with standing in nomenclature can be found online at the List of Prokaryotic Names with Standing in Nomenclature (LPSN) http://www.bacterio.cict.fr. The official name of the bacterium should be written in full first time (e.g. *Fusobacterium necrophorum*), and its official short form should be used throughout the manuscript afterwards (*F. necrophorum*). To use a name without standing in nomenclature, write the name in quotation marks at first citation within the text and within the title and abstract, and include an explanation within the text.

**Genetic Nomenclature**

Standard genetic nomenclature is to be used and any deviations should be endorsed by an appropriate authoritative body.

**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 build footnotes into the text, and this feature may be used. Should this not be the case, indicate the position of footnotes in the text and present the footnotes themselves separately at the end of the article.

**Artwork**

**Electronic artwork**

**General points**

- Make sure you use uniform lettering and sizing of your original artwork.
- Preferred fonts: Arial (or Helvetica), Times New Roman (or Times), Symbol, Courier.
- Number the illustrations according to their sequence in the text.
- Use a logical naming convention for your artwork files.
- Indicate per figure if it is a single, 1.5 or 2-column fitting image.
- For Word submissions only, you may still provide figures and their captions, and tables within a single file at the revision stage.
• Please note that individual figure files larger than 10 MB must be provided in separate source files. A detailed guide on electronic artwork is available.

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

**Formats**

Regardless of the application used, when your electronic artwork is finalized, 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 the font or save the text as 'graphics'.
- TIFF (or JPG): Color or grayscale photographs (halftones): always use a minimum of 300 dpi.
- TIFF (or JPG): Bitmapped line drawings: use a minimum of 1000 dpi.
- TIFF (or JPG): Combinations bitmapped line/half-tone (color or grayscale): a minimum of 500 dpi is required.

**Please do not:**

- Supply files that are optimized for screen use (e.g., GIF, BMP, PICT, WPG); the resolution is too low.
- Supply files that are too low in resolution.
- Submit graphics that are disproportionately large for the content.

**Color 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 color figures then Elsevier will ensure, at no additional charge, that these figures will appear in color online (e.g., ScienceDirect and other sites) regardless of whether or not these illustrations are reproduced in color in the printed version. **For color reproduction in print, you will receive information regarding the costs from Elsevier after receipt of your accepted article.** Please indicate your preference for color: in print or online only. Further information on the preparation of electronic artwork.

**Figure captions**

Ensure that each illustration has a caption. 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.

**Text graphics**

Text graphics may be embedded in the text at the appropriate position. If you are working with LaTeX and have such features embedded in the text, these can be left. See further under Electronic artwork.

**Tables**

Please submit tables as editable text and not as images. Tables should be added 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.

**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., Ambbe 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.

Users of Mendeley Desktop can easily install the reference style for this journal by clicking the following link:

[http://open.mendeley.com/use-citation-style/anaerobe](http://open.mendeley.com/use-citation-style/anaerobe)

When preparing your manuscript, you will then be able to select this style using the Mendeley plug-ins for Microsoft Word or LibreOffice.

**Reference formatting**

There are no strict requirements on reference formatting at submission. References can be in any style or format as long as the style is consistent. Where applicable, author(s) name(s), journal title/book title, chapter title/article title, year of publication, volume number/book chapter and the article number or pagination must be present. Use of DOI is highly encouraged. The reference style used by the journal will be applied to the accepted article by Elsevier at the proof stage. Note that missing data will be highlighted at proof stage for the author to correct. If you do wish to format the references yourself they should be arranged according to the following examples:

**Reference style**

**Text:** Indicate references by number(s) in square brackets in line with the text. The actual authors can be referred to, but the reference number(s) must always be given.

Example: '..... as demonstrated [3,6]. Barnaby and Jones [8] obtained a different result ....'

**List:** Number the references (numbers in square brackets) in the list in the order in which they appear in the text.

**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:

Journal abbreviations source
Journal names should be abbreviated according to the List of Title Word Abbreviations.

Video
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 labeled 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 file in one of our recommended file formats with a preferred maximum size of 150 MB per file, 1 GB in total. Video and animation files supplied will be published online in the electronic version of your article in Elsevier Web products, including ScienceDirect. 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 personalize the link to your video data. For more detailed instructions please visit our video instruction pages. Note: since video and animation cannot be embedded in the print version of the journal, please provide text for both the electronic and the print version for the portions of the article that refer to this content.

Data visualization
Include interactive data visualizations in your publication and let your readers interact and engage more closely with your research. Follow the instructions here to find out about available data visualization options and how to include them with your article.

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 in Brief**
You have the option of converting any or all parts of your supplementary or additional raw data into one or multiple data articles, a new kind of article that houses and describes your data. Data articles ensure that your data is actively reviewed, curated, formatted, indexed, given a DOI and publicly available to all upon publication. You are encouraged to submit your article for Data in Brief as an additional item directly alongside the revised version of your manuscript. If your research article is accepted, your data article will automatically be transferred over to Data in Brief where it will be editorially reviewed and published in the open access data journal, Data in Brief. Please note an open access fee of 600 USD is payable for publication in Data in Brief. Full details can be found on the Data in Brief website. Please use this template to write your Data in Brief.

**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.

**AFTER ACCEPTANCE**

**Online proof correction**
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, at no cost, receive a customized Share Link providing 50 days free access to the final published version of the article on ScienceDirect. The Share Link can be used for sharing the article via any communication channel, including email and social media. 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. Corresponding authors who have published their article gold open access do not receive a Share Link as their final published version of the article is available open access on ScienceDirect and can be shared through the article DOI link.

**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