**AJVR Instructions for Authors**

The American Journal of Veterinary Research is a monthly peer-reviewed veterinary medical journal owned by the American Veterinary Medical Association that publishes reports of original research and review articles in the general area of veterinary medical research.

**Mission**

The mission of the American Journal of Veterinary Research is to publish, in a timely manner, peer-reviewed reports of the highest quality research that has the clear potential to enhance the health, welfare, and performance of animals and humans. The journal will maintain the highest ethical standards of scientific journalism and promote such standards among its contributors. In addition, the journal will foster global interdisciplinary cooperation in veterinary medical research.

**Scope**

The American Journal of Veterinary Research supports the collaborative exchange of information between researchers and clinicians by publishing novel research findings that bridge the gulf between basic research and clinical practice or that help to translate laboratory research and preclinical studies to the development of clinical trials and clinical practice. The journal welcomes submission of high-quality original studies and review articles in a wide range of scientific fields, including anatomy, anesthesiology, animal welfare, behavior, epidemiology, genetics, heredity, infectious disease, molecular biology, oncology, pharmacology, pathogenic mechanisms, physiology, surgery, theriogenology, toxicology, and vaccinology. Species of interest include production animals, companion animals, equids, exotic animals, birds, reptiles, and wild and marine animals. Reports of laboratory animal studies and studies involving the use of animals as experimental models of human diseases are considered only when the study results are of demonstrable benefit to the species used in the research or to another species of veterinary interest. Other fields of interest or animal species are not necessarily excluded from consideration, but such reports must focus on novel research findings. Submitted papers must make an original and substantial contribution to the veterinary medicine knowledge base; preliminary studies are not appropriate.

**Editorial Policies**

**Authorship**

Individuals should be listed as authors only if they (1) made a substantial contribution to the conception and design of the study, the acquisition of the data used in the study, or the analysis and interpretation of that data; (2) were involved in drafting or revising the manuscript critically for important intellectual content; and (3) approved the submitted version of the manuscript and will have an opportunity to approve subsequent revisions of the manuscript, including the version to be published. All 3 conditions must be met. Each individual listed as an author must have participated sufficiently to take public responsibility for the work. Acquisition of funding, collection of data, or general supervision of the research team does not, alone, justify authorship. Requests to list a working group or study group in the byline will be handled on a case-by-case basis. All authors must complete and submit the authorship form ([https://www.avma.org/News/Journals/Pages/journals-caa-instructions.aspx](https://www.avma.org/News/Journals/Pages/journals-cka-instructions.aspx)), confirming that they meet the criteria for authorship.

**Prior publication**

A manuscript is received with the understanding that the information has not been published or submitted for publication in any compiled printed (eg, journals, symposia, proceedings, newsletters, or books) or electronic (eg, websites, CD-ROMs, DVDs, or blogs) format in English or any other language and will not be published or submitted for publication elsewhere while the manuscript is under consideration by the AJVR. Any exceptions must be clearly described at the time of manuscript submission.

A manuscript containing previously published information may be rejected on the grounds of prior publication. Publication of abstracts containing less than 250 words will not be considered to constitute prior publication, but publication of longer abstracts may be. Authors are encouraged to consult the guidelines for preparation of scientific abstracts ([https://www.avma.org/News/Journals/Pages/journals-scientific-abstracts.aspx](https://www.avma.org/News/Journals/Pages/journals-scientific-abstracts.aspx)) when preparing scientific abstracts for publication. In general, figures, tables, footnotes, and references should not be included in abstracts.

At the time of manuscript submission, the corresponding author must include copies of any abstracts of the manuscript that have been published or submitted for publication or that are expected to be submitted for publication, along with copies of any closely related manuscripts or manuscripts with substantially similar content.

**Copyright**

The AJVR is covered by copyright. All authors will be required to transfer copyright to the AVMA ([https://www.avma.org/News/Journals/Pages/journals-cka-instructions.aspx](https://www.avma.org/News/Journals/Pages/journals-cka-instructions.aspx)) prior to publication of any manuscript or letter. Requests to copy, reprint, or use portions of published material (including information in figures and tables) should be addressed to the editor-in-chief.

Authors must obtain and submit a statement of permission from the copyright holder (most often, the author or publisher) if they wish to include items such as figures, tables, or appendices that appeared or will have appeared in other published reports prior to publication of the manuscript, regardless of the originating source.
Original artwork (eg, drawings or photographs) that was created specifically for use in the manuscript must be accompanied by a letter explaining the conditions under which the work was created. The letter must be signed by the artist and specify the rights given to the authors for use of the artwork and the rights retained by the artist (if any). If rights are retained by the artist, the letter must include a statement that allows the journal to use the material for publication in print and online.

Editorial independence

The AVMA has adopted the following policy on editorial independence of the AJVR:
The AVMA recognizes and fully accepts the need for editorial independence of the AVMA journals and grants the editor-in-chief full authority over the editorial content of the journals, including the selection of content for publication and the timing of publication of that content. For these purposes, editorial content is understood to include research articles, other types of scientific reports, opinion articles, news, and advertising. Opinions and statements expressed in the AVMA journals are those of the contributors and do not represent the official policy of the AVMA, unless so stated. AVMA management does not interfere in the evaluation, selection, or editing of individual articles published in the AVMA journals, either directly or by creating an environment that strongly influences decisions of the editor-in-chief.

Funding and support

All funding, other financial support (eg, grant support), and material support (eg, provision of equipment or supplies) received directly or indirectly (via an author's institution) from any third party (eg, any government agency, foundation, or commercial enterprise) in connection with the study or writing of the manuscript must be clearly and completely described in the Acknowledgments section of the manuscript. If no third-party funding or support was received, the following statement or an equivalent may be included: No third-party funding or support was received in connection with this study or the writing or publication of the manuscript.

The authors must also include a relevant statement in the Acknowledgments section if any funding organization or sponsor had any role in the design or conduct of the study; collection, analysis, or interpretation of the data; writing or approval of the manuscript; or decision to submit the manuscript for publication. Alternatively, the following statement or an equivalent may be included: Funding sources did not have any involvement in the study design, data analysis and interpretation, or writing and publication of the manuscript.

Failure to fully disclose sources of financial and other support may be grounds for rejection or retraction of the manuscript.

NIH Public Access Policy

The AVMA journals are in compliance with the National Institutes of Health Public Access Policy (https://publicaccess.nih.gov/) and with the open access policies of other research funders. To assist authors of manuscripts subject to the NIH Public Access Policy (https://publicaccess.nih.gov/determine-applicability.htm), the AVMA has arranged to submit articles to PubMed Central on behalf of the authors at the time of publication. Authors should not submit the accepted or any other version of their manuscript to PubMed Central, as this will preclude submission of the published version.

Conflicts of interest and financial disclosures

A conflict of interest exists whenever an individual has financial interests or personal relationships that might consciously or unconsciously influence his or her decisions. Conflicts of interest are ubiquitous and cannot be completely eliminated; they do not, by themselves, indicate improper behavior, wrongdoing, or scientific misconduct.

Financial relationships are the most easily identifiable conflicts of interest and include, among other things, ownership, employment, consultancies, honoraria, paid expert testimony, grants, patents, stock ownership or options, and service as an officer or board member. Other types of conflicts of interest include personal relationships, academic competition, and intellectual beliefs.

All authors must disclose in the Acknowledgments section of the manuscript any financial or personal relationships that could be perceived to influence or could give the appearance of influencing information in the submitted manuscript. This includes detailed information about all relevant financial interests, activities, relationships, and affiliations (other than affiliations listed on the title page of the manuscript) occurring at the present time or within the 3 years prior to manuscript submission. In this context, relevant financial interests, activities, relationships, and affiliations should be interpreted broadly. For example, authors should disclose relationships they have not only with companies that manufacture products that are the subject of research described in the manuscript but also with companies that manufacture competing products. If no such conflicts of interest existed, the following statement or an equivalent may be included: The authors declare that there were no conflicts of interest.

The editors reserve the right to reject any manuscript because of conflicts of interest. Failure to fully disclose conflicts of interest may be grounds for rejection or retraction of the manuscript.

Humane animal care and use

To be considered for publication in the AJVR, all research studies involving animals must have been performed in compliance with guidelines outlined in the Animal Welfare Act (http://awic.nal.usda.gov/government-and-professional-resources/federal-laws/animal-welfare-act), US Public Health Service Policy
on the Humane Care and Use of Laboratory Animals (http://grants.nih.gov/grants/olaw/references/phspol.htm), National Research Council’s Guide for the Care and Use of Laboratory Animals (http://www.nap.edu/read/5140/chapter/1), or Guide for the Care and Use of Agricultural Animals in Research and Teaching (http://adsa.org/Publications/FASS2010AgGuide.aspx) or in compliance with equivalent guidelines. If animals were euthanized, the method of euthanasia must be indicated in the manuscript. Methods of euthanasia must comply with the AVMA Guidelines for the Euthanasia of Animals (https://www.avma.org/KB/Policies/Documents/euthanasia.pdf). If a method not recommended by the AVMA Guidelines on Euthanasia was used, a justification for use of this method must be provided.

A manuscript containing information that suggests animals were subjected to adverse, stressful, or harsh conditions or treatments will not be considered for publication unless the authors demonstrate convincingly that the knowledge gained was of sufficient value to justify these conditions or treatments.

Institutional oversight and owner consent

With the exception of reports of retrospective studies based solely on reviews of medical records, manuscripts describing studies that involved the use of animals, including studies that involved the use of privately owned animals (e.g., animals owned by clients, staff members, students, or private entities), must include a statement that the study protocol was reviewed and approved by an appropriate oversight entity (e.g., an animal care and use committee or institutional review board) or was performed in compliance with institutional or other (e.g., governmental or international) guidelines for research on animals.

Manuscripts describing prospective studies that involved privately owned animals must also include a statement indicating that informed owner consent was obtained. Manuscripts describing research involving human subjects must include a statement that the research was performed under appropriate institutional review board oversight.

Patient confidentiality and the right to privacy

Authors have an obligation to protect the personal privacy of patients and clients and to maintain the confidentiality of patient-client information. For any manuscript containing patient information (e.g., patient descriptions, photographs, or pedigrees) that would allow specific animals or their owners to be identified, the authors must obtain a signed statement of informed consent to publish the information (in print and online) from the owners. Generally, such consent should include an opportunity for the owner to read the manuscript to be submitted for publication. If necessary, nonessential identifying data can be removed, unless clinically or epidemiologically important. However, identifying data may not be altered or falsified. Cropping or altering photographs to remove nonessential identifying information is acceptable, so long as the photographs are not otherwise altered. Patient identifiers may not appear in photographs. Authors must also obtain informed consent to publish from any identifiable person appearing in photographs. Importantly, these guidelines also apply to any materials (e.g., text, photographs, or videos) submitted for posting as supplemental materials.

Publication fees

For manuscripts accepted for publication in the AJVR, a page charge of $110 for each printed page or fraction thereof will be charged at the time the manuscript is published.

Reporting guidelines

To ensure thoroughness of reporting, authors are strongly encouraged to make use of the following guidelines, if applicable, when preparing manuscripts:

- CONSORT (Consolidated Standards of Reporting Trials)—for clinical trials
- REFLECT (Reporting Guidelines for Randomized Controlled Trials for Livestock and Food Safety)—for clinical trials in livestock and food safety
- STARD (Standards for the Reporting of Diagnostic Accuracy Studies)—for diagnostic test evaluation
- STROBE (Strengthening the Reporting of Observational Studies in Epidemiology)—for cross-sectional, case-control, and cohort studies
- PRISMA (Preferred Reporting Items of Systematic Reviews and Meta-analyses)—for systematic reviews and meta-analyses
- ARRIVE (Animal Research: Reporting of In Vivo Experiments)—for all studies involving laboratory animals

Dual-use research of concern

Openness is recognized as a priority when making decisions regarding scientific publishing. Advances in molecular and cellular biology, genetics, microbiology, and other life sciences have made it increasingly possible to manipulate aspects of biological systems to better understand healthy states and mechanisms of disease. However, these advances have also increased the potential that information, products, or technologies resulting from life sciences research may be misused for harmful purposes. The US National Science Advisory Board for Biosecurity (http://osp.od.nih.gov/office-biotechnology-activities/biosecurity/nsabb) has proposed the following definition for dual-use research:

Dual-use research of concern is research that, based on current understanding, can be reasonably anticipated to provide knowledge, products, or technologies that could be directly misapplied by others to pose a threat to public health, safety, agricultural crops and other plants, animals, the environment, or material.

Accordingly, the AJVR has adopted the following policy regarding assessment of submitted manuscripts with potential dual-use content:

- Any manuscript submitted for publication that
raises concerns regarding dual-use potential will be subject to editorial review to determine the risks and benefits to the scientific community and to the public at large that may result from publication. The AVMA scientific editors maintain a strong commitment against withholding scientific or other information unless there are compelling reasons to do so.

- The scientific editors reserve the right to seek special external review of these manuscripts from individuals with technical and biosecurity expertise to assist their decision.
- Authors and reviewers are expected to alert the AVMA scientific editors when submitting or reviewing manuscripts with dual-use potential.
- The final decision for publication as well as the means of communicating manuscripts with dual-use potential will be made by the editor-in-chief. An accompanying editorial may be published.

**Manuscript Categories**

Reports of original research, review articles, and letters to the editor will be considered for publication in the AJVR; clinical reports that describe features of 1 or more clinical cases will generally not be considered. For reports of original research, preference is accorded to those that provide novel findings that could be expected to have clinical or practical value within the next several years. Review articles should focus on subject areas in which important advances have been made during the past 5 years.

Readers who submit letters to the editor must limit them to 500 words (longer letters will be condensed as needed) and 6 references. Letters must be original and cannot have been published or submitted for publication elsewhere. Not all letters are published; all letters accepted for publication are subject to editing. Those pertaining to anything published in the AJVR should be received within 1 month after the date of publication of the material to which they refer. Submission via email (JournalLetters@avma.org) is encouraged; authors should give their full contact information including address, daytime telephone number, fax number, and email address. Letters containing defamatory, libelous, or malicious statements will not be published, nor will letters representing attacks on or attempts to demean veterinary societies or their committees or agencies.

**Manuscript Preparation**

Authors should pay close attention to the following guidelines for manuscript preparation and format. Manuscripts that are not prepared in accordance with these guidelines will be returned to the authors for amendment and resubmission.

**Format**

Manuscripts (including footnotes, references, figure legends, and tables) should be prepared with the following attributes:

- 8.5 X 11-inch (or A4) page size
- Double-space typed
- 12-point Times New Roman font
- 1-inch (2.5-cm) margins
- Left justification
- Sequential line numbering

Authors should avoid using software programs that automatically create endnotes, footnotes, and references in the submitted version of their manuscript, because the embedded formatting used by these programs may not be read by the publication software.

**Organization and contents**

Manuscripts should be organized as follows:

- Title page
- Structured abstract (when applicable; letters to the editor and review articles do not have a structured abstract)
- Text
- Acknowledgments
- Footnotes
- References
- Figures
- Tables

**Title page**

The title page must include the manuscript title and the first name, middle initial, and last name of each author, along with each author’s professional degree and highest earned academic degree (eg, MS or PhD, MPVM). Academic degrees lower than the bachelor’s degree (eg, associate degrees), specialty board certifications, fellowship designations, and honorary degrees should not be listed; a bachelor’s degree should be listed only if it is the author’s only degree. Professional affiliations (full mailing addresses) of the authors at the time of the study should be indicated. If an author’s affiliation has changed since the study was performed, the author’s new affiliation should be identified as well. Finally, the name and email address of the corresponding author must also be included on the title page.

**Structured abstract**

With the exception of review articles, all manuscripts must include a structured abstract of 250 or fewer words, organized under the following headings:

- Objective
- Animals (or Sample)
- Procedures
- Results
- Conclusions and Clinical Relevance

**Text**

The text should begin with an introductory section (which does not have a heading) and then be organized under the following headings:

- Materials and Methods
- Results
- Discussion

The introductory section should supply sufficient pertinent background information to allow readers to
understand and interpret results. It must include the rationale for the study, a clear statement of the purpose of the study, and the investigators’ hypothesis.

The Materials and Methods section should describe the experimental design in sufficient detail to allow others to reproduce the study. A subsection detailing statistical methods used to summarize data, evaluate data distributions, and test hypotheses, along with a statement regarding the level of significance used for hypothesis testing, should be provided. Products (including software), equipment, and drugs should be identified in the text by chemical or generic names or descriptions. A trade name may be included in a lettered footnote if that specific product, equipment, or drug was essential for the outcome. For all statistical tests, authors are required to indicate whether applicable test assumptions were met. When citing software products, a footnote should be used to cite the software (eg, PROC GLM, SAS, version 9.2, SAS Institute Inc, Cary, NC) and a reference should be used to cite a user’s guide (eg, SAS/STAT9.2 user’s guide. Cary, NC: SAS Institute Inc, 2008: page number).

The Results section should provide data that are clearly and simply stated without discussion or conclusions. Tables and figures should be cited parenthetically. Authors should refrain from repeating within the text data that are also presented in tables. Authors of manuscripts reporting gene sequences should submit those sequences to an appropriate data bank.

The Discussion section should focus on findings in the manuscript and should be brief, containing only discussion that is necessary for interpretation of findings. The Discussion should concentrate mainly on what is known in nonhuman animals, with less emphasis on what is known in humans. It should not contain any subheadings.

Acknowledgments

The Acknowledgments section is where information on sources of funding and support and conflicts of interest must be listed, along with any disclaimers, any acknowledgments of individuals who made important contributions to the study but did not meet the criteria for authorship, and any previous presentations of the findings at scientific meetings. In addition, for studies involving multiple institutions, a statement indicating where the work was done may be included, if applicable. For information on listing sources of funding and support and conflicts of interest, see the editorial policies on Funding and support and Conflicts of interest and financial disclosures.

The Acknowledgments section should be used to identify specific individuals who had an important role in or made important contributions to the study but who do not meet the criteria for authorship. In general, this includes individuals who contributed intellectually to the study or report but whose contributions do not justify authorship, individuals who provided technical assistance (eg, individuals who performed special tests or research), and individuals who provided assistance with the statistical analyses.

The acknowledgments should not be used simply as a method of expressing gratitude to individuals who had a minor role in the study. The acknowledgments should not include individuals whose only contribution to the study or report involved the routine performance of their normal job duties and who did not offer any unusual or extraordinary intellectual contribution or technical expertise. Acknowledgments of nonspecific groups (eg, the intensive care unit technicians) and unidentifiable groups (eg, the anonymous contributors or study participants) are not allowed.

Individuals named in the acknowledgments must have given their permission to the authors to be listed, because readers may infer their endorsement of the data and conclusions.

Footnotes

Footnotes are to be used when referencing each of the following types of information:

- Abstracts
- Conference presentations
- Online databases
- Personal communications
- Products, drugs, equipment, and other materials
- Statistical and computer software
- Theses and dissertations

Specific products, equipment, or drugs should be included in the footnotes only if they were essential to the outcome of the report or study. Products, equipment, and drugs that are commonly used materials in veterinary medicine need not be footnoted.

Footnotes should be cited in the text as superscript letters and listed alphabetically after the Acknowledgments section and before the references. If more than 26 footnotes are required, continue the sequence with double letters (eg, aa, bb, and cc). For products and equipment, provide complete information in the footnote, including manufacturer’s name and location (ie, city, state, and country [if other than the United States]).

References

Authors bear primary responsibility for accuracy of all references. References must be limited to those that are necessary and must be cited in the text by superscript numbers in order of citation. Journal titles in the Reference section should be abbreviated in accordance with the National Library of Medicine (http://www.ncbi.nlm.nih.gov/nlmcatalog/journals). For references with more than 3 authors, only the first 3 authors should be listed, followed by et al. The following is the style used for common types of references:

- Article in a journal

• Book chapter

• Proceedings

• Electronic material

Figures
Figures should be limited to those that reduce or clarify the text. Images of clinically normal animals are not usually required, nor are images of equipment unless the equipment has been set up in a special way and the setup is integral to the study. Text and symbols should be large enough that they will still be legible when the figure is reduced to 1 column in width during publication (in general, this means that all text and symbols must be at least 1.5 mm tall when the figure is reduced to 8 cm in width). Text labels should start with a capital letter (eg, Cranial vena cava).

To ensure high-quality reproduction, symbols used to represent data in graphs should be limited to white and black circles, triangles, and squares; axes should be labeled in Helvetica or Arial font. Keys to data symbols may be placed in a small box inserted into the unused portion of graphs. Symbols used in figures and tables should be assigned in the following order:
• Asterisk (*)
• Dagger (†)
• Double dagger (‡)
• Section indicator (§)
• Double vertical bar (||)
• Paragraph indicator (¶)
• Pound sign (#)
• Two asterisks (**)
• Two wasitters (***)
• Two daggers (††)
• Two double daggers (‡‡)

Photomicrographs and electron micrographs must include an internal scale marker. For figures that include multiple panels, each panel should be sequentially labeled with a capital letter in the same corner of each panel. If a figure contains 2 or more rows of panels, the letter labels should be applied sequentially from left to right in the first row, then from left to right in the second row, and so on.

For preparation of digital versions of figures, please see the section on preparation of electronic files for manuscript submission.

Figure legends must be provided at the end of the manuscript, after the references and before any tables. Sufficient information should be included to allow the figure to be understood without reference to the text. Abbreviations defined in the abbreviations list at the beginning of the text do not need to be expanded; however, newly introduced abbreviations in figures should be defined in the figure legend, in alphabetical order. When applicable, stains used for histologic sections must be indicated in the legend as well as the scale of the marker bar (eg, H&E stain; bar = 100 µm). Figure legends for ECG traces must include the paper speed and scale (eg, Paper speed = 50 mm/s; 1 mV = 10 mm). Authors wishing to use any previously published figures must submit written permission from the copyright holder.

Tables
Submission of excessive tabular data is discouraged, and tables should be limited to those containing data important to understanding and interpreting results of the study. All tables should be placed at the end of the manuscript, after the figure legends. Authors will be asked to delete tables containing data that could be reported more succinctly in the text. Tables that focus solely on findings in individual animals rather than summary data from groups of animals are to be avoided. Authors wishing to use any previously published tables must submit written permission from the copyright holder.

For order of symbol use in tables, please refer to the instructions for preparation of figures. To indicate significant differences between or among values in a row or column, symbols or superscript lowercase letters assigned in alphabetical order (a–z) may be used. If additional differentiation is needed (eg, if differences need to be reported in both rows and columns) and lowercase letters have already been used, superscript uppercase letters in alphabetical order (A–Z) may be used.

Supplemental materials
Additional materials that are not in themselves essential to the understanding of the article but provide an important expansion of the article contents may be submitted for publication as supplemental materials. Examples include extended descriptions of experimental methods, extended bibliographies, additional supporting data or results (eg, tables and figures), reporting checklists, copies of survey instruments or questionnaires, handouts, forms, and multimedia representations (eg, video clips) of relevant content.

Supplemental materials must be useful to readers and relevant to the article; redundant and extraneous content will not be accepted. Whether supplemental materials will be accepted for publication is solely at the discretion of the editors. Supplemental materials accepted for publication will not appear in the printed version of the journal but will be posted on the journal’s website. Ideally, supplemental materials will be sent.
with the manuscript to external reviewers for peer review. Whether supplemental materials have or have not undergone peer review will be indicated on the landing page where the supplemental materials are posted. Supplemental materials should be prepared in compliance with the general guidelines for manuscript style. Although supplemental materials may undergo minor copy editing or formatting, they generally will not undergo the same substantive editing provided for manuscripts. Therefore, the authors are responsible for ensuring clarity and accuracy of the content.

**Manuscript Style**

For questions of style, refer to the latest edition of the American Medical Association Manual of Style (http://www.amamanualofstyle.com/; online access requires a subscription; individual subscriptions are available on a monthly basis if desired). Manuscripts should be written in American English. For spelling of lay terms, refer to the latest American edition of the Merriam-Webster Dictionary. For anatomical terms, use anglicized versions of official terms listed in the Nomina Anatomica Veterinaria. Refer to the latest editions of the American Drug Index and USP Dictionary of USAN and International Drug Names for proper spelling of chemical and drug names and to the latest edition of Dorland’s Illustrated Medical Dictionary for proper spelling and use of medical terms. Refer to Bergey’s Manual of Determinative Microbiology for spelling and correct taxonomic classifications of microorganisms.

Authors of manuscripts that are not written in their first language or that required substantial language translation in the writing process are encouraged to seek professional language correction or copyediting services prior to submission. Such services can aid with language, grammar, and style in scientific writing and can help ensure the manuscript content can be understood by editors and potential reviewers.

**Abbreviations**

In general, use of abbreviations other than standard abbreviations and units of measures should be kept to a minimum. In the structured abstract, a term should be abbreviated only if it is used at least 3 times in the structured abstract. The term must be expanded at first mention, with the abbreviation given in parentheses after the expanded term. Similarly, in the manuscript text, figures, and tables, a term should be abbreviated only if it is used at least 3 times. All abbreviations except for standard abbreviations and units of measure should be listed in alphabetical order at the beginning of the manuscript text (after the structured abstract and before the introduction), along with their definitions. These abbreviations should then be used without expansion in the text, except when used to start a sentence.

Abbreviations that appear only in the figures or tables should be defined in the figure or table legend. Except for the abbreviations ELISA, ACTH, EDTA, DNA, and RNA, abbreviations should not be used in titles.

**Products, equipment, drugs, and other materials**

Materials used in the study or referred to in the manuscript should generally be identified by chemical or generic names or descriptions. A trade name may be included in a lettered footnote if that specific product, equipment, or drug was essential for the outcome. Trademark and similar proprietary symbols are not needed.

**Manuscript Submission**

Manuscripts must be submitted online at http://mc.manuscriptcentral.com/avma.

**Electronic file specifications**

Manuscripts must be in Microsoft Word format (.doc or .docx) or rich text format (.rtf). Tables should be included at the end of the manuscript in the same electronic file; however, if necessary, they can be saved as separate files.

**Figures**

All figures should be saved as separate electronic files with the name of the figure used as the file name (eg, Figure 1); figures should not be embedded in the manuscript. Gray scale or black and white should be used; color should be used only when important information would otherwise be lost (eg, when certain tissue-staining patterns are poorly visible in gray scale or when a color-flow Doppler ultrasonogram is provided). For figures that include multiple panels, each panel should be sequentially labeled with a capital letter in the same corner of each panel. If a figure contains 2 or more rows of panels, the letter labels should be applied sequentially from left to right in the first row, then from left to right in the second row, and so on. Simple figures such as line drawings, bar graphs, and line graphs prepared in Excel should be saved and submitted as Excel files (.xls). Line drawings and graphs that were not prepared in Excel should be submitted as .TIF files; however, .JPG, .GIF, .EPS, and .BMP files are also acceptable. Figures created with software programs that use proprietary graphic formats (eg, SigmaPlot or Statistix) cannot be used; most such software programs have the capability to save figures in one of the aforementioned formats. Minimum resolution for line drawings and charts is 1,000 dots per inch.

Images (eg, photographs, photomicrographs, and radiographs) that are not available in a digital format should be scanned on a flatbed scanner at a resolution of at least 300 dots per inch. Files should be saved as .TIF files; however, .JPG, .GIF, .EPS, and .BMP files are also acceptable. Color figures should be submitted in CMYK, rather than RGB, format to prevent color shift during production.

**Additional required materials**

At the time of manuscript submission, the corresponding author is also responsible for submitting
the following required materials: a completed authorship form (https://www.avma.org/News/Journals/Pages/journals-caa-instructions.aspx) for each author, copies of any references listed as in press or submitted, copies of any abstracts containing information from the manuscript that have been published or that have been submitted or are expected to be submitted for publication, copies of any closely related manuscripts or manuscripts with substantially similar content that have been published by the authors or submitted for publication, and copies of signed permission forms from the copyright holders if the manuscript contains any tables, illustrations, or appendices that have been published previously. This material should be submitted electronically (e.g., by scanning and uploading with the manuscript or by uploading the electronic file).

Manuscripts will NOT be considered for publication until a completed authorship form has been received for each author.

Keywords
During manuscript submission, authors will be requested to supply up to 5 keywords for the manuscript to facilitate indexing and aid in the selection of reviewers. In choosing their keywords, authors are encouraged to make use of the list of manuscript keywords (https://www.avma.org/News/Journals/Pages/journals-keywords.aspx) available on the AVMA website.

Online submission
Once electronic files of the manuscript and all of its parts have been prepared, log on to the AVMA Manuscript Central website at http://mc.manuscriptcentral.com/avma. If you already have an account with the system, log in with your user ID and password, click on Author Center, and select Click here to submit a new manuscript. Follow the instructions for submitting your manuscript. After submitting your manuscript, please check that your user information (including mailing address, telephone and fax numbers, and email address) is current. If you do not have an account with the system, click on Register here under the New User heading. Fill in all fields carefully; all fields in bold are required.

A cover letter is not required; however, authors are given the option of including a cover letter when submitting their manuscripts. The cover letter can be used to explain the importance of the manuscript as well as any points that the editor should consider when reviewing the manuscript. Authors who have discussed their manuscript with an editor prior to submission should indicate this in the cover letter.

During manuscript submission, authors are also given an opportunity to indicate preferred and nonpreferred editors and reviewers for their manuscript. Authors’ choices of nonpreferred editors and reviewers are typically honored. Those of preferred editors and reviewers may or may not be honored, depending on the circumstances. In research fields in which few experts are available for review or in which experts may not be known by AJVR staff, suggestions of preferred reviewers are appreciated.

Peer Review Process
The AJVR reserves the right to reject any manuscript. Manuscripts are reviewed initially by an AVMA scientific editor. Because of the large volume of manuscripts submitted to the journal, manuscripts are classified by the editors on the basis of priority for publication, and those not judged to be of sufficient priority are rejected promptly. Manuscripts considered for publication are sent to a minimum of 2 experts for external peer review. Instructions provided to the external reviewers (https://www.avma.org/News/Journals/Pages/ajvr-ifr.aspx) are available on the AVMA website for authors’ perusal. Identity of peer reviewers is kept confidential; identity of authors is not.

Authors are expected to respond to reviewer comments and make appropriate revisions within 14 days. Revised manuscripts may be reviewed again. Manuscripts that pass peer review are accepted for publication provided that authors respond meaningfully to questions and concerns raised by an AVMA scientific editor.

Sequence of Publication
Once a manuscript has satisfied all reviewer concerns and passed peer review, a provisional letter of acceptance will be issued. Final acceptance is contingent on the authors responding meaningfully to suggestions and questions raised by the scientific editor at the time of editing. Manuscripts are typically processed for publication in the order that they pass peer review, except that manuscripts dealing with emerging or zoonotic diseases or biodefense are prepared for publication as soon as they pass peer review. Adherence to these author instructions and expedient revision and return of manuscripts will minimize time from submission to publication. The interval to the editing stage will vary depending on the number of manuscripts already in line for editing at the time of provisional acceptance.

All manuscripts are subject to editing by a scientific editor prior to publication. Editing changes are made to maintain consistency, improve clarity, smooth transitions, or make the report more understandable for the journal’s general readership. Other changes are made to comply with the journal’s editorial style, such as placement of superscript numbers and letters, use of abbreviations, and formatting of footnotes and references. During editing, questions may emerge regarding the intended meaning of terms or phrases and information that appears to be missing.

The edited manuscript will be returned to the corresponding author to address any editor queries and ensure that editorial changes are accurate and acceptable. Authors should carefully and thoroughly review the edited manuscript, make any additional changes that are necessary, and upload the final version to the journal’s online manuscript-tracking system.
Manuscripts will then be forwarded to the journal production staff for copyediting, layout, and assignment to an issue. A letter of final acceptance will be sent to the corresponding author at this time, followed by a galley proof approximately 4 to 6 weeks later. The galley proof will be sent via email to the corresponding author (or designee, if alternate arrangements have been made) for approval. Galley changes must be returned within 48 hours. Changes should be limited to those that affect the accuracy of the information presented.

An invoice for page charges will be sent to the corresponding author at the time of publication.