- This Is the Sample Article Template for
- mSystems ®, an American Society for
- Microbiology (ASM) Journal
- First Author, a Second Author, a,† Third Author, b Fourth Final Author, a,b,*
- University Name, Faculty Group, Department, City, Country^a; Company Name, City,
- Third Author and Fourth Author contributed equally. First Author and Second Author
- contributed equally to this work. Author order was determined XXXXXX.

Research Articles have structured abstracts consisting of two sections with their own headings: "Abstract" and "Importance". Because the structured abstract will be published separately by abstracting services,

- it must be complete and understandable without reference to the text. The
- Abstract section should be no more than 250 words and should concisely
- summarize the basic content of the paper without presenting extensive
- experimental details. **IMPORTANCE** The Importance section should be
- no more than 150 words and should provide a nontechnical explanation of
- the significance of the study to the field. Avoid abbreviations and references, and indicate the specific organism under study. When it is essential to
 - include a reference, use the format shown under "References" below.
- KEYWORDS: keyword 1, keyword 2, keyword 3.
 - Please read the Instructions to Authors carefully, or browse the FAQs for
 - further details.

INTRODUCTION

- The introduction should supply sufficient background information to allow
- the reader to understand and evaluate the results of the present study
- without referring to previous publications on the topic. The introduction
- should also provide the hypothesis that was addressed or the rationale for the present study. Choose references carefully to provide the most salient
- background rather than an exhaustive review of the topic.
- Sectioning commands. Use # to get a first-level heading. You can use ## to
- get a sub-heading. Further sectioning levels, such as ###, etc., are ignored.
- Sections must be ordered as follows:
 - Abstract
 - Importance
 - Keywords
 - Introduction
 - Results

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72

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79

FirstAuthor et al.

- Discussion
- Materials and Methods
- Supplemental Material file list (where applicable)
- Acknowledgments
- References

Citations and References. This template uses BibTeX and natbib, so \citep and \citet or @[citekey] such as (1), Johnson and Robinson (2), or (3) can be used as usual to produce the correct citation style, and the reference list is generated automatically. In the reference list, references are numbered in the order in which they are cited in the article (citation-sequence reference system). In the text, references are cited parenthetically by number in sequential order. Data that are not published or not peer reviewed are simply cited parenthetically in the text. The mSystems Instructions to Authors contain additional guidelines for the reference list and examples of how various types of references should be presented in the manuscript.

- i. References listed in the References section. The mSystems Instructions to Authors contain examples of the types of items that should be cited in the reference list. Those examples have been reproduced in the template bib file, as have other sample references.
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 - (P._{S.}Satheshkumar, A._{S.}Weisberg, and B.~Moss, J Virol 87:10700–10709, 2013, doi:10.1128/JVI.01258-13)
 - (J._{H.}Coggin, Jr., p.~93–114, in D._{O.}Fleming and D._{L.}Hunt, ed.,

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Biological Safety. Principles and Practices, 4th ed., 2006) "...in a recent report by D. A. Hopwood (mBio 4:e00612-13, 2013, doi:10.1128/mBio.00612-13) ..."

- iv. References related to supplemental material. If references must be cited in the supplemental material, list them in a separate References section within the supplemental material and cite them by those numbers; do not simply include citations of numbers from the reference list of the associated article. If the same reference(s) is to be cited in both the article itself and the supplemental material, then that reference would be listed in both References sections.
- v. Citations of data sets and/or code. To encourage data sharing and reuse, ASM recommends reporting data sets and/or code both in a dedicated "Data availability" paragraph and in the reference list. Examples related to data citation have been reproduced in the template bib file, as have other sample references.

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RESULTS

In the Results section, include the rationale or design of the experiments as well as the results; reserve extensive interpretation of the results for the Discussion section. Present the results as concisely as possible in one or more of the following: text, table(s), or figure(s). Data in tables (e.g., cpm of radioactivity) should not contain more significant figures than the precision of the measurement allows. Illustrations (particularly photomicrographs and electron micrographs) should be limited to those that are absolutely necessary to show the experimental findings. Number figures

144

154

FirstAuthor et al.

Table 1 Automobile land speed records (GR 5-10)^a

Speed (mph)	Driver	Car	Engine	Date	Extra comments
407.447	Craig Breedlove	Spirit of America	GE J47	8/5/63	(Just to demo a full-width table with auto-wrapping long lines)
413.199	Tom Green	Wingfoot Express	WE J46	10/2/64	
434.22	Art Arfons	Green Monster	GE J79	10/5/64	
468.719	Craig Breedlove	Spirit of America	GE J79	10/13/64	
526.277	Craig Breedlove	Spirit of America	GE J79	10/15/65	
536.712	Art Arfons	Green Monster	GE J79	10/27/65	
555.127	Craig Breedlove	Spirit of America, Sonic 1	GE J79	11/2/65	
576.553	Art Arfons	Green Monster	GE J79	11/7/65	
600.601	Craig Breedlove	Spirit of America, Sonic 1	GE J79	11/15/65	
622.407	Gary Gabelich	Blue Flame	Rocket	10/23/70	
633.468	Richard Noble	Thrust 2	RR RG 146	10/4/83	
763.035	Andy Green	Thrust SSC	RR Spey	10/15/97	1 16

^aSource is from this website: https://www.sedl.org/afterschool/toolkits/science/pdf/ast_sci_data_tables_sample.pdf

and tables in the order in which they are cited in the text, and be sure to cite all figures and tables. ?? is just for show, but this sentence shows how a figure could be cited in the text of the manuscript.

The tabularx, booktabs and siunitx packages are loaded by asm-article.cls; see ?? for an example table. Use \begin{fullwidth}...\end{fullwidth} in your table for the table to span the entire width of the page. Shading in the field of tables is allowed, to demonstrate relationships among data. You can use the \columncolor, \rowcolor or \cellcolor commands to do this: allowed color values are black!20 and black!30.

File types and formats. Illustrations may be continuous-tone images, line drawings, or composites. On initial submission, illustrations may be supplied as PDF files, with the legend on the same page, to assist review. At the modification stage, production quality digital files must be provided, along with text files for the legends. The legends are copyedited and typeset for final publication, not included as part of the figure itself.

All graphics submitted with modified manuscripts should be grayscale or in the RGB color mode. Minimum resolution is 300 dpi for all file types. All images imported into a figure file must be at the correct resolution before they are placed in the file. (For instance, placing a 72-dpi image in a 300-dpi EPS file will not result in the placed image meeting the minimum requirements for file resolution.) Note that publication quality will not be improved by using a resolution higher than the minimum.

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Running Title

between panel labels and the image must be eliminated.

- Maximum figure width: 6.875 inches (ca.~17.4 cm)
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DISCUSSION

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The Discussion section should provide an interpretation of the results in relation to previously published work and to the experimental system at hand and should not contain extensive repetition of the Results section or reiteration of the introduction. In short papers, the Results and Discussion sections may be combined.

$$\frac{\partial^2 \Phi}{\partial x^2} + \frac{\partial^2 \Phi}{\partial y^2} + \frac{\partial^2 \Phi}{\partial z^2} = \frac{1}{c^2} \frac{\partial^2 \Phi}{\partial t^2}$$
 (1)

Please note that display equations in the Overleaf template may be rendered with a slightly different presentation in the final published (mSystems) article.

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$$\int_0^\infty e^{-\alpha x^2} dx = \frac{1}{2} \sqrt{\int_{-\infty}^\infty e^{-\alpha x^2}} dx \int_{-\infty}^\infty e^{-\alpha y^2} dy = \frac{1}{2} \sqrt{\frac{\pi}{\alpha}}$$
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%TC:ignore # Materials and Methods

The Materials and Methods section should include sufficient technical information to allow the experiments to be repeated. When centrifugation conditions are critical, give enough information to enable another investigator to repeat the procedure: make of centrifuge, model of rotor, temperature, time at maximum speed, and centrifugal force ($\times g$ rather than revolutions per minute). For commonly used materials and methods (e.g., media and protein concentration determinations), a simple reference is sufficient. If several alternative methods are commonly used, it is helpful to identify the method briefly as well as to cite the reference. For example, it is preferable to state cells were broken by ultrasonic treatment as previously described (9)'' rather than to statecells were broken as previously described (9).' This allows the reader to assess the method without constant reference to previous publications. Describe new methods completely and give sources of unusual chemicals, equipment, or microbial

FirstAuthor et al.

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strains. When large numbers of microbial strains or mutants are used in a study, include tables identifying the immediate sources (i.e., sources from whom the strains were obtained) and properties of the strains, mutants, bacteriophages, and plasmids, etc.

A method or strain, etc., used in only one of several experiments reported in the paper may be described in the Results section or very briefly (one or two sentences) in a table footnote or figure legend. It is expected that the sources from whom the strains were obtained will be identified.

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304

306

FirstAuthor et al.

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- REFERENCES
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- 3. Winnick S, Lucas DO, Hartman AL, Toll D. 2005. How do you improve compliance? Pediatrics 115:e718-e724.