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First Author,^a Second Author,^{a,†} Third Author,^b Fourth Final Author,^{a,b,*}

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ABSTRACT 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 `\section` to get a first-level heading. You can use `\subsection` or just `\textbf` to get a sub-heading. Further sectioning levels, such as `\subsubsection`, etc., are ignored.

Sections **must** be ordered as follows:

- Abstract
- Importance
- Keywords
- Introduction
- Results
- Discussion
- Materials and Methods
- Supplemental Material file list (where applicable)
- Acknowledgments
- References

Citations and References. This template uses BibTeX and natbib, so `\citep` and `\citert` such as (1), Avizian et al. (2) can be used as usual to produce the correct citation

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Address correspondence to Fourth Author, fourth@author.edu.

† Present Address: Second Author, Full Affiliation.

F.A., S.A. and F.F.A. contributed equally to this work.



16 × 9
(Original size: 320 × 180 bp)

FIG 1 This is an example figure with caption. Use the fullwidth environment to make it span the entire width of the page. Lorem ipsum dolor sit amet, consectetur adipiscing elit.

41 style, and the reference list is generated automatically. In the reference list, references
42 are numbered in the order in which they are cited in the article (citation-sequence
43 reference system). In the text, references are cited parenthetically by number in
44 sequential order. Data that are not published or not peer reviewed are simply cited
45 parenthetically in the text.

46 Since the abstract must be able to stand apart from the article, references cited in
47 it should be clear without recourse to the References section. Use an abbreviated form
48 of citation, omitting the article title, as follows.

- 49 • (M. J. Fraser, G. E. Smith, and M. D. Summers, *J Virol* 47:287–300, 1983)
- 50 • (J. Scholefield, R. Manson, R. J. Johnston, R. Scott, and M. Spinell, p. 179–183, *in*
51 R. C. Tilton, ed., *Rapid Methods and Automation in Microbiology*, 1981)

52 “. . . the recent report of A. K. Datta and J. S. Pagano (*Antimicrob Agents*
53 *Chemother* 24:10–14, 1983). . .”

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62 statement to that effect should be included in the “Data availability” paragraph. For
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71 tion quality digital files must be provided, along with text files for the legends. The
72 legends are copyedited and typeset for final publication, not included as part of the
73 figure itself.

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75 RGB color mode. Minimum resolution is 300 dpi for all file types. All images imported
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95 RESULTS

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

105 The tabularx, booktabs and siunitx packages are loaded by asm-article.cls; see
106 [Table 1](#) for an example table. Use `\begin{fullwidth}... \end{fullwidth}` in your table for
107 the table to span the entire width of the page.

108 DISCUSSION

109 The Discussion section should provide an interpretation of the results in relation to
110 previously published work and to the experimental system at hand and should not
111 contain extensive repetition of the Results section or reiteration of the introduction. In

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	

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

short papers, the Results and Discussion sections may be combined.

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

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

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute irure dolor in reprehenderit in voluptate velit esse cillum dolore eu fugiat nulla pariatur. Excepteur sint occaecat cupidatat non proident, sunt in culpa qui officia deserunt mollit anim id est laborum.

$$\int_0^{\infty} e^{-\alpha x^2} dx = \frac{1}{2} \sqrt{\int_{-\infty}^{\infty} e^{-\alpha x^2} dx} \int_{-\infty}^{\infty} e^{-\alpha y^2} dy = \frac{1}{2} \sqrt{\frac{\pi}{\alpha}} \quad (2)$$

Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

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 state “cells 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 strains.

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

142 A method or strain, etc., used in only one of several experiments reported in the
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144 in a table footnote or figure legend. It is expected that the sources from whom the
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172 legends for supplemental material:

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175 sentences.

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180 although the study stands on its own. This legend for the figure may include multiple
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188 ACKNOWLEDGMENTS

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 190 scholarships, etc.) should appear in the Acknowledgments. A funding statement in-
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207 REFERENCES

1. **Cox CS, Brown BR, Smith JC.** In press. J. Genet. .
2. **Aivazian D, Serrano RL, Pfeffer S.** 2006. TIP47 is a key effector for Rab9 localization. *The J. Cell Biol.* 173(6):917–926. <http://jcb.rupress.org/content/173/6/917>.
3. **Winnick S, Lucas DO, Hartman AL, Toll D.** 2005. How do you improve compliance? *Pediatrics* 115(6):e718–e724.
4. **Falagas ME, Kasiakou SK.** 2006. Use of international units when dosing colistin will help decrease confusion related to various formulations of the drug around the world. *Antimicrob. agents chemotherapy* 50(6):2274–2275.
5. **Forman MS, Valsamakis A.** 2003. Specimen collection, transport, and processing: virology. In: Murray PR, Baron EJ, Pfaller MA, Jorgensen JH, Tenover FC, Tenover FC, editors. *Manual of Clinical Microbiology*, 8th ed. Washington, DC: ASM Press, p. 1227–1241.
6. **Green PN, Hood D, Dow CS.** 1984. Taxonomic status of some methylophilic bacteria. In: *Microbial growth on C1 compounds. Proceedings of the 4th International Symposium.* American Society for Microbiology Washington, DC, p. 251–254.