

# This Is the Sample Article Template for *mSystems*<sup>®</sup>, an American Society for Microbiology (ASM) Journal

**First Author,<sup>a</sup> Second Author,<sup>a,†</sup> Third Author,<sup>b</sup> Fourth Final Author,<sup>a,b,\*</sup>**

University Name, Faculty Group, Department, City, Country<sup>a</sup>; Company Name, City, Country<sup>b</sup>

**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 `\cit` such as (1), Avizian et al. (2) can be used as usual to produce the correct citation

**Compiled** February 9, 2018

This is a draft manuscript, pre-submission

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). . .”

54 **Data citation.** To promote reproducibility, ASM expects researchers to identify  
55 and cite data sets and/or code used in their experiments and studies. These may be  
56 large or complex data sets that can include, but are not limited to, data from microarray,  
57 genomic, structural, proteomic, or video imaging analyses. **Authors should cite both**  
58 **the data set repository and the published article in which the data set and/or**  
59 **code was originally described.** Citations of data should be included in the reference  
60 list with persistent unique identifiers (e.g., active DOIs, accession numbers, etc.). If  
61 computer code or software was created to generate results or interpret data, then a  
62 statement to that effect should be included in the “Data availability” paragraph. For  
63 cases in which the software is publicly available (e.g., [FigTree](#) to generate phylogenetic

64 trees), the URL of the software informational page should be provided. **It is preferred**  
65 **that authors use established, publicly available data type-specific repositories.**  
66 If there is no appropriate repository available, general publicly available repositories  
67 should be used (e.g., [Dryad](#), [figshare](#), etc.).

68 **File types and formats.** Illustrations may be continuous-tone images, line draw-  
69 ings, or composites. On initial submission, illustrations may be supplied as PDF files,  
70 with the legend on the same page, to assist review. At the modification stage, produc-  
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.

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

80 All graphics should be submitted at their intended publication size; that is, the  
81 image uploaded should be 100% of its print dimensions so that no reduction or  
82 enlargement is necessary. Resolution must be at the required level at the submitted  
83 size. Include only the significant portion of an illustration. White space must be  
84 cropped from the image, and excess space between panel labels and the image must  
85 be eliminated.

- 86 • Maximum figure width: 6.875 inches (ca. 17.4 cm)
- 87 • Maximum figure height: 9.0625 inches (23.0 cm)

88 **Author Warranty.** If accepted for publication, the Work will be made freely avail-  
89 able to the public on ASM's [mSystems](#) website. ASM will grant the public the nonexclu-  
90 sive right to copy, distribute, adapt, and transmit the published Work for commercial  
91 or non-commercial use with proper attribution under the Creative Commons, At-  
92 tribution license, Version 4.0 (CC-BY). For details, see [https://creativecommons.org/](https://creativecommons.org/licenses/by/4.0/)  
93 [licenses/by/4.0/](https://creativecommons.org/licenses/by/4.0/legalcode) and <https://creativecommons.org/licenses/by/4.0/legalcode>, as well as  
94 <http://msystems.asm.org/content/author-warranty-and-provisional-license-publish>.

## 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)<sup>a</sup>

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	

<sup>a</sup>Source is from this website: [https://www.sedl.org/afterschool/toolkits/science/pdf/ast\\_sci\\_data\\_tables\\_sample.pdf](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  
143 paper may be described in the Results section or very briefly (one or two sentences)  
144 in a table footnote or figure legend. It is expected that the sources from whom the  
145 strains were obtained will be identified.

146 **Availability of data and materials.** By publishing in mSystems, the authors agree  
147 that, subject to requirements or limitations imposed by local and/or U.S. Government  
148 laws and regulations, any materials and data that are reasonably requested by others  
149 are available from a publicly accessible collection or will be made available in a timely  
150 fashion, at reasonable cost, and in limited quantities to members of the scientific  
151 community for noncommercial purposes. Similarly, the authors agree to make available  
152 computer programs and/or code, originating in the authors' laboratory, that is the only  
153 means of confirming the conclusions reported in the article but that is not available  
154 commercially. The program(s) and suitable documentation regarding its (their) use  
155 may be provided by any of the following means: (i) as a program transmitted via the  
156 Internet, (ii) as an Internet server-based tool, or (iii) as a compiled or assembled form  
157 on a suitable medium. The authors guarantee that they have the authority to comply  
158 with this policy either directly or by means of material transfer agreements through  
159 the owner. ASM asks authors to assert this in a "Data availability" paragraph, which  
160 should appear at the end of the Materials and Methods section (or at the end of the  
161 text) of their submitted manuscript.

162 Therefore, a condition of publication in mSystems is that authors make data fully  
163 available and without restriction, except in rare circumstances. Data availability will be  
164 confirmed prior to publication and must be provided during the modification stage, if  
165 not before. Furthermore, data must be made available, upon request, for peer review.  
166 See [Data Policy](#).

## 167 **SUPPLEMENTAL MATERIAL**

168 Guidelines for supplemental material appear in the Instructions to Authors. This section  
169 of the paper should include legends for any supplemental material that is intended for  
170 posting. Such supplemental material must be submitted with the manuscript. Files can  
171 be added to the submission at the publisher's submission site. Here is a list of sample  
172 legends for supplemental material:

173 **FIG S1.** Supplemental file 1 is a figure that shows results related to the study,  
174 although the study stands on its own. This legend for the figure may include multiple  
175 sentences.

176 **FIG S2.** Supplemental file 2 is a figure that shows results related to the study,  
177 although the study stands on its own. This legend for the figure may include multiple  
178 sentences.

179 **FIG S3.** Supplemental file 3 is a figure that shows results related to the study,  
180 although the study stands on its own. This legend for the figure may include multiple  
181 sentences.

182 **TABLE S1.** Supplemental file 4 is a large table that shows results related to the  
183 study, although the study stands on its own. This legend for the table may include  
184 multiple sentences.

185 **TABLE S2.** Supplemental file 5 is a complex table that shows results related to the  
186 study, although the study stands on its own. This legend for the supplemental material  
187 may include multiple sentences.

## 188 ACKNOWLEDGMENTS

189 Statements regarding sources of direct financial support (e.g., grants, fellowships, and  
 190 scholarships, etc.) should appear in the Acknowledgments. A funding statement in-  
 191 dicating what role, if any, the funding agency had in your study (for example, “The  
 192 funders had no role in study design, data collection and interpretation, or the deci-  
 193 sion to submit the work for publication.”) may be included. Funding agencies may  
 194 have specific wording requirements, and compliance with such requirements is the  
 195 responsibility of the author. In cases in which research is not funded by any specific  
 196 project grant, funders need not be listed, and the following statement may be used:  
 197 “This research received no specific grant from any funding agency in the public, com-  
 198 mercial, or not-for-profit sectors.” Statements regarding indirect financial support (e.g.,  
 199 commercial affiliations, consultancies, stock or equity interests, and patent-licensing  
 200 arrangements) are also allowed. It is the responsibility of authors to provide a general  
 201 statement disclosing financial or other relationships that are relevant to the study.  
 202 Recognition of personal assistance should be given as a separate paragraph, as should  
 203 any statements disclaiming endorsement or approval of the views reflected in the  
 204 paper or of a product mentioned therein.

205 **Please read the [Instructions to Authors](#) or browse the [FAQs](#) for further de-**  
 206 **tails.**

## 207 REFERENCES

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