

# Science Robotics

## Instructions for Authors of Focus articles

Focus articles at *Science Robotics* are short, timely pieces that spotlight new research findings published in *Science Robotics* or other journals, or policy issues of interest to the robotics community that are of immediate importance. Focus articles cannot exceed 1000 words total (not including abstract, references, and figure or table). They should have a short snappy or newsy title, a one-sentence abstract, no more than 10 references, and one figure or table (with caption).

*Focus articles include a one-sentence Abstract. The Abstract will be visible in citation indices and, thus, will lead many readers to your article.*

**Format:** Focus articles have an upper limit of 1000 words (main text only) and should cite at most 10 references. Because we want to make this page visually engaging as well as informative, we strongly suggest that each Focus include a figure. See the next page with instructions for electronic transmission of manuscripts and details on preferred file types and file naming.

**Writing Your Focus:** The ideal Focus begins with an introductory paragraph that concisely presents the issues in a way that captures the reader's interest. If applicable, the highlighted paper should be mentioned in this first paragraph. Your introduction should be general enough to orient the reader not familiar with the specifics of your field. Throughout the article, you should avoid the jargon and special terms of your field or system. If the language of specialists is necessary, define terms for the general reader.

The body of the text should, in the limited space available, develop your discussion in a lively manner. By "lively" we don't mean hype and oversimplification. Rather, the editors seek clear, declarative writing that avoids the passive tense, tangled constructions, and needless detail.

The final paragraph should draw the piece to a concise conclusion, without simply restating the text. It should be a conclusion and not a summary. Tell the reader about future prospects and implications. What are the unanswered questions? Where is the field going?

References, cited by consecutive numbers in the text, should be given in a full format. Avoid lengthy notes, details, or asides that interrupt the flow of the text.

**The Figure:** The figure should illustrate the essential message of the Focus. It can be a graph, chart, table, or photograph. The point is to catch the eye while informing the reader. You can submit finished artwork or suggest stock photography images for the figure. With the help of our art department, we will refine or modify the figure as needed. See accompanying instructions for submission of electronic art.

**The Editor's Role:** We expect that authors will do their best to meet our criteria for a good Focus, but you should be prepared for extensive editing, perhaps even rewriting, if the editors find it necessary. The editors will show you see the changes, and you may be asked to check revisions before the galley proof is generated.

### Headquarters

1200 New York Avenue, NW, Washington, DC 20005 USA Tel:+1 202 326 6490 Fax: +1 202 789 4669  
Published by the American Association for the Advancement of Science

### Author Checklist for *Science Robotics Focus*

Have you included an Abstract without cited references?	
Are all authors listed correctly along with their affiliations and the corresponding author indicated?	
Have you included at least one figure or table?	
Have you obtained any permissions for re-use of any of previously published figures that you wish to use?	
Have you included a caption for the figure or table?	
Does your article cite 10 or fewer references?	
Are the references complete? Each citation should include full article title, journal title, journal volume, year of publication, and first and last page. Please include all authors (no <i>et al.s</i> ).	

### General Instructions for the Preparation and Submission of Text and Figure

Please submit your text and figures through the *Science Journals Submission and Information Portal* at <https://cts.sciencemag.org>. Our submission site will automatically rename your files upon upload, so it is not necessary to follow a particular naming convention for your files.

#### Text

Text files must be in Microsoft Word .docx format. Include text, as well as any figure captions, references and all tables, in this single Microsoft Word .docx file. **Symbols, abbreviations, and acronyms** should be defined the first time they are used. **Units of measure** should be given in SI units. If measurements were made in English units, give metric equivalents.

#### Figure

For initial submission, the figure file should be incorporated into the main text .doc or .docx file if possible. If not, it can be uploaded separately. **Figures prepared in PowerPoint are not allowed.** The following formats are acceptable:

- Illustrator EPS (Encapsulated Postscript) or AI (Adobe Illustrator)
- Photoshop PSD (Photoshop - with active text layers, do not flatten and do not rasterize text layers) PDF, TIF, PicT, JPG, GIF
- Files prepared in Corel Draw or Macromedia Freehand, which must be saved as EPS files
- PowerPoint PPT files

#### Supplementary Materials

*Text and figures.* Although supplementary text and figures are discouraged for Focus, if necessary, include them (materials and methods, tables and figures plus captions) at the end of the main manuscript file, in a separate section titled Supplementary Materials.

*Video files.* Acceptable formats for videos or animations are Quicktime (h264 compression preferred), MPEG, and Flash. Keep videos short and the display window small to minimize the file size of the video. Supply caption information with the videos. Edit longer sequences into several small pieces with captions specific to each video sequence.

#### Headquarters

1200 New York Avenue, NW, Washington, DC 20005 USA Tel:+1 202 326 6490 Fax: +1 202 789 4669  
Published by the American Association for the Advancement of Science

*Audio files.* Acceptable formats for audio files are .wav, .aiff and .au. Supply caption information with the audio files. Upload these file types as Auxiliary Supplementary Materials on our submission site. Please contact the editors at [sciroboteditors@aaas.org](mailto:sciroboteditors@aaas.org) regarding submission of such file types.

*Other files types.* All other file types can be uploaded as Auxiliary Supplementary Materials on our submission site. Our system can handle files up to 25 MB.

If your files are extremely large or if you have other questions, please email the *Science Robotics* editors at [sciroboteditors@aaas.org](mailto:sciroboteditors@aaas.org).

### Citation style

**References and notes** are numbered in the order in which they are cited, first through the text, then through the table or figure caption. List a reference only one time. We do not allow references to unpublished data; necessary data should be included in the manuscript, its Supplementary Material, or an approved archival database. The abbreviations for journal names are taken from the *Bibliographic Guide for Editors and Authors (BGEA)* or *Serial Sources for the BIOSIS Data Base (BIOSIS)*, a more recent publication. When in doubt, provide the journal's complete name. Spell out cities that are listed after a journal name: *Acta Zool. (Stockholm)*. Do not use op. cit., ibid., 3-m dashes, en dashes, or et al. (in place of the complete list of authors' names). Publisher's names are given in shortened form. "Press" and the like are usually dropped, except Academic Press ["Academic" is an adjective], University Park Press, CRC Press, MIT Press, and Cambridge Univ. Press [for university presses, to distinguish them from the university itself]. No publisher's location is needed. Inclusive pages numbers or chapter number must be given when specific articles are referred to within an edited volume. Please use full citations in the following format:

#### Journals

D. Trivedi, C. D. Rahn, W. M. Kier, I. D. Walker, Soft robotics: Biological inspiration, state of the art, and future research. *Appl. Bionics Biomech.* **5**, 99–117 (2008).

C. D. Onal, D. Rus, Autonomous undulatory serpentine locomotion utilizing body dynamics of a fluidic soft robot. *Bioinspir. Biomim.* **8**, 026003 (2013).

K. Suzumori, S. Iikura, H. Tanaka, Applying a flexible microactuator to robotic mechanisms. *Control Syst. IEEE* **12**, 21–27 (1992).

R. J. Wood, S. Avadhanula, R. Sahai, E. Steltz, R. S. Fearing, Microrobot design using fiber reinforced composites. *J. Mech. Des.* **130**, 052304 (2008).

K. Takashima, J. Rossiter, T. Mukai, McKibben artificial muscle using shape-memory polymer. *Sens. Actuators A Phys.* **164**, 116–124 (2010).

J.-B. Ihn, F.-K. Chang, Detection and monitoring of hidden fatigue crack growth using a built-in piezoelectric sensor/actuator network: I. Diagnostics. *Smart Mater. Struct.* **13**, 609–620 (2004).

P. Polygerinos, Z. Wang, K. C. Galloway, R. J. Wood, C. J. Walsh, *Robot. Auton. Syst.*; available at [www.sciencedirect.com/science/article/pii/S0921889014001729](http://www.sciencedirect.com/science/article/pii/S0921889014001729). (paper published online before print)

#### Technical reports

C. J. Maddison, A. Huang, I. Sutskever, D. Silver, Move evaluation in Go using deep convolutional neural networks. <http://arxiv.org/abs/1412.6564> (2014).

#### Headquarters

1200 New York Avenue, NW, Washington, DC 20005 USA Tel:+1 202 326 6490 Fax: +1 202 789 4669  
Published by the American Association for the Advancement of Science

D. E. Shaw, *Technical Report CUCS-29-82* (Columbia University, New York, 1982).

White House Council of Economic Advisers, *Big Data and Differential Pricing* (White House, Washington, DC, 2015). [unpublished or access by title]

*Assessment of the Carcinogenicity and Mutagenicity of Chemicals* (WHO Technical Report Series No. 556, World Health Organization, Geneva, Switzerland, 1974).

FTC Staff Report, *Mobile Privacy Disclosures: Building Trust Through Transparency* (FTC, Washington, DC, 2013); <http://1.usa.gov/1eNz8zr>.

### Proceedings

W. McMahan, V. Chitrakaran, M. Csencsits, D. Dawson, I. D. Walker, B. A. Jones, M. Pritts, D. Dienno, M. Grissom, C. D. Rahn, Field trials and testing of the OctArm continuum manipulator, in *Proceedings of the 2006 IEEE International Conference on Robotics and Automation*, 15 to 18 May 2006, Orlando, FL, pp. 2336–2341.

F. Lieder, M. Hsu, T. L. Griffiths, The high availability of extreme events serves resource-rational decision-making, in *Proceedings of the 36th Annual Conference of the Cognitive Science Society* (2014), pp. 2567–2572.

G. M. J.-B. Chaslot, S. Bakkes, I. Szita, P. Spronck, Monte-Carlo tree search: A new framework for game AI, in *Proceedings of the Artificial Intelligence and Interactive Digital Entertainment Conference* (AAAI, 2008), pp. 216–217. [sponsoring organization should be mentioned if it is not part of the proceeding title]

R. M. Walser, Electromagnetic metamaterials. *Proc. SPIE* **4467**, 1–15 (2001).

### Paper presented at a meeting (not published)

M. A. McEvoy, N. Correll, Shape change through programmable stiffness, International Symposium on Experimental Robotics (ISER), Marrakech, Morocco, 2014. [sponsoring organization should be mentioned if it is not part of the meeting name]

D. Hughes, N. Correll, A soft, amorphous skin that can sense and localize texture, IEEE International Conference on Robotics and Automation (ICRA), Hong Kong, 2014. 10.1109/ICRA.2014.6907101

### Theses

B. Smith, thesis, Georgetown University, Washington, DC (1973).

### Books

A. M. Lister, *Fundamentals of Operating Systems* (Springer-Verlag, ed. 3, 1984). [third edition]

R. Davis, J. King, in *Machine Intelligence*, E. Acock and R. Michie, Eds. (Wiley, 1976), vol. 8, chap. 3.

D. Koller, N. Friedman, *Probabilistic Graphical Models: Principles and Techniques* (MIT Press, 2009).

C. Melchiorri, M. Kaneko, Robot hands, in *Springer Handbook of Robotics* (Springer-Verlag, 2008), pp. 345–360.

*Principles and Procedures for Evaluating the Toxicity of Household Substances* (National Academy of Sciences, Washington, DC, 1977). [organization as author and publisher]

### Headquarters

1200 New York Avenue, NW, Washington, DC 20005 USA Tel:+1 202 326 6490 Fax: +1 202 789 4669  
Published by the American Association for the Advancement of Science