

# Template for preparing your research report submission to PNAS using RMarkdown

Alice Anonymous<sup>a,1,2</sup> and Bob Security<sup>a,b</sup>

<sup>a</sup>Some Institute of Technology, Department, Street, City, State, Zip; <sup>b</sup>Another University Department, Street, City, State, Zip

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**Please provide an abstract of no more than 250 words in a single paragraph. Abstracts should explain to the general reader the major contributions of the article. References in the abstract must be cited in full within the abstract itself and cited in the text.**

one | two | optional | optional | optional

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Note: please start your introduction without including the word “Introduction” as a section heading (except for math articles in the Physical Sciences section); this heading is implied in the first paragraphs.

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Figures and Tables should be labelled and referenced in the standard way using the `\label{}` and `\ref{}` commands.

Figure

*fig: frog*

shows an example of how to insert a column-wide figure. To insert a figure wider than one column, please use the `\begin{figure*}...\end{figure*}` environment. Figures wider than one column should be sized to 11.4 cm or 17.8 cm wide.

## Significance Statement

Authors must submit a 120-word maximum statement about the significance of their research paper written at a level understandable to an undergraduate educated scientist outside their field of speciality. The primary goal of the Significance Statement is to explain the relevance of the work in broad context to a broad readership. The Significance Statement appears in the paper itself and is required for all research papers.

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**Fig. 1.** Placeholder image of a frog with a long example caption to show justification setting.

**Single column equations.** Authors may use 1- or 2-column equations in their article, according to their preference.

To allow an equation to span both columns, options are to use the `\begin{figure*}...\end{figure*}` environment mentioned above for figures, or to use the `\begin{widetext}...\end{widetext}` environment as shown in equation

*eqn : example*

below.

Please note that this option may run into problems with floats and footnotes, as mentioned in the [cuted package documentation](#). In the case of problems with footnotes, it may be possible to correct the situation using commands `\footnotemark` and `\footnotetext`.

$$\begin{aligned}(x+y)^3 &= (x+y)(x+y)^2 \\ &= (x+y)(x^2+2xy+y^2) \\ &= x^3+3x^2y+3xy^2+x^3.\end{aligned}$$

**Supporting Information (SI).** The main text of the paper must stand on its own without the SI. Refer to SI in the manuscript at an appropriate point in the text. Number supporting figures and tables starting with S1, S2, etc. Authors are limited to no more than 10 SI files, not including movie files. Authors who place detailed materials and methods in SI must provide sufficient detail in the main text methods to enable a reader to follow the logic of the procedures and results and also must reference the online methods. If a paper is fundamentally a study of a new method or technique, then the methods must be described completely in the main text. Because PNAS edits SI and composes it into a single PDF, authors must provide the following file formats only.

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**ACKNOWLEDGMENTS.** Please include your acknowledgments here, set in a single paragraph. Please do not include any acknowledgments in the Supporting Information, or anywhere else in the manuscript.

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