

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

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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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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.

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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`.

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

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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.

1. Belkin M, Niyogi P (2002) Using manifold structure for partially labeled classification. *Advances in Neural Information Processing Systems*, pp 929–936.
2. Bérard P, Besson G, Gallot S (1994) Embedding riemannian manifolds by their heat kernel. *Geometric & Functional Analysis GAFA* 4(4):373–398.
3. Coifman RR, et al. (2005) Geometric diffusions as a tool for harmonic analysis and structure definition of data: Diffusion maps. *Proceedings of the National Academy of Sciences of the United States of America* 102(21):7426–7431.