

Logo

Telling a story with your science

Image

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You may have been given the advice that you should tell a story with the data you present. But is this approach really effective? And if so, why? Below, we describe the rationale behind the use of storytelling to convey scientific information, and suggest one method for how to achieve this.

Reasons to use a storytelling approach to convey scientific findings and ideas

Telling a story allows you, as the writer, to connect with your reader and help them more easily comprehend and remember the information you wish to convey. This is because storytelling can have the following effects:

- **Help the reader to focus:** A narrative structure can increase audience comprehension, interest, and engagement¹, thereby allowing the reader maintain their focus on your message.
- **Improve retention of information:** Framing information in a story creates a logical connection between events or facts, making them easier to remember^{2,3}.
- **Elicit emotion:** Compelling narratives cause oxytocin release, which can affect our attitudes, beliefs, behaviors,⁴ and memories⁵.
- **Synchronize the brain activity between the writer and the reader:** The brain waves of a storyteller and listener are spatially and temporally coupled⁶, allowing them to get on the same wavelength (both metaphorically and literally).

An approach to telling a story with your data

One effective method is the ABT (**A**nd, **B**ut, **T**herefore) Framework, which is attributed to the scientist-turned-filmmaker, [Randy Olson](#). This framework builds in a clear beginning, middle, and end to the story as follows:

1. **AND** provides context and creates connections between different pieces of background information.
2. **BUT** allows you to present a problem or question, which is an essential feature of any good story and keeps readers engaged and focused.
3. **THEREFORE** resolves the problem or question, thus tying the narrative arc together.

For example:

1. Vaccines based on killed or weakened viruses have been used for a long time **AND** were safe **AND** effective.
2. **BUT** the production of these vaccines required large-scale cell culture and was slow.
3. **THEREFORE**, the discovery of mRNA vaccines that could be rapidly developed was a major scientific breakthrough for the treatment of infectious diseases.

Additional considerations as you write your story

- Know your audience: how you present the “But” (gap or question) or

Upcoming Opportunities

Have a question about writing grants or research articles? [Contact us](#) and we will attempt to answer it in a future newsletter.

Broader Impacts/Research Impacts Seminars

February 9, 23 and March 8, 22, and 20

9:00-11:00 AM

The Training Team from the National Science Foundation (NSF)-supported [Advancing Research Impact in Society \(ARIS\)](#) organization will conduct five interactive virtual workshops on Broader Impacts, one of two criteria considered in NSF proposals. Broader impacts relate to how the proposed research will “benefit society or advance desired societal outcomes” and is increasingly used as the differentiator between which excellent proposals to fund or not.

[Additional information](#)

[Register here](#) for one or all sessions

University of Iowa Research Foundation Technology Commercialization Series

February 8 | 3:00–4:30 pm | [Disclosure and Intellectual Property \(IP\)](#)

March 7 | 3:00–4:30 pm | [Licensing and Commercialization](#)

These classes are designed to give faculty, staff, and students an introduction to the commercialization process from invention disclosure through post-licensing. Participants will gain a better understanding on how to approach innovation, and how UIRF gets their ideas to the market; by licensing to an existing company or a start-up. Each class is independent of the others and participants do not need to be currently working with UIRF to join. Classes are discussion-based and participants are encouraged to bring questions.

[Additional Information](#)

Webinar on the Simplified Review Framework for Research Project Grants at NIH

“Therefore” (conclusion) will depend on whether you are writing for subject-matter experts or a broad readership.

- Start with material that is relatable to your audience to establish a connection more quickly.
- Identify the problem and work backward to determine the background information the reader will need to understand it.
- Avoid too many “Buts” (gaps or questions) or your reader won’t know what your focus is.
- Be specific about your meaning because this will strengthen your arguments.

Happy storytelling, and happy holidays!
Jen Barr and the SERCC Team

References and Resources

1. Dahlstrom MF. [Using narratives and storytelling to communicate science with nonexpert audiences](#). *Proc. Natl. Acad. Sci.* 2014 111;supp 4: 13614-13620.
2. Graesser AC, Woll SB, Kowalski DJ, Smith DA. [Memory for typical and atypical actions in scripted activities](#). *Journal of Experimental Psychology: Human Learning and Memory*. 1980 6(5), 503-515.
3. Metsamuuronen J, Rasanen P. [Cognitive-linguistic and constructivist mnemonic triggers in teaching based on Jerome Bruner’s thinking](#). *Front. Psychol.* 2018 9:2543.
4. Zak PJ. [Why inspiring stories make us react: the neuroscience of narrative](#). *Cerebrum*. 2015 Feb 2;2015:2.
5. Guzmán Y, Tronson N, Jovasevic V, Sato K, Guedea AL, Mizukami H, Nishimori K, Radulovic J. [Fear-enhancing effects of septal oxytocin receptors](#). *Nat Neurosci.* 2013 16(9):1185–1187.
6. Stephens GJ, Silbert LJ, Hasson U. [Speaker-listener neural coupling underlies successful communication](#). *Proc. Natl. Acad. Sci.* 2010 107(32):14425-14430.
7. [TedMed talk](#) by Randy Olson.

NIH is implementing a simplified review framework for the majority of research project grants with receipt dates of January 25, 2025 and beyond. This webinar provides a high-level overview and answers questions regarding the changes in the new framework.

[Access the recording](#)

[Visit the website](#)

Maximizing Pivot to Find Funding and Collaborators

January 19, 2024 |9:00-10:00 AM | Zoom

February 19, 2024 |2:00-3:00 PM | Zoom

Do you want to maximize your time spent searching for funding opportunities or potential project collaborators? Join us on an upcoming date below to learn how Pivot can save you time and effort in identifying the right funding opportunities for your research lines as well as identifying collaborators with the relevant expertise.

[Additional information](#)

[Register here](#) for the January 19 session.

[Register here](#) for the February 19 session.

Proposal Resource Library

Established by the [UI Research Development Office \(RDO\)](#), the resource library contains examples of successful proposals for various funding agencies including federal agencies and private foundations. In addition, the resource library contains examples of various components required for proposals including budget justifications, resource sharing plans, and data management plans. [Access the library](#) (HawkID required)

Hardin Library Open Workshops

Hardin Library offers a variety of workshops to assist with your scholarly endeavours. Workshop topics include Data Management Essentials, EndNote Basic, Finding the Right Journal for Your Manuscript, PubMed, and many others. All classes are free of charge but pre-registration is recommended. Group or one-on-one sessions can be scheduled for any classes.

[Additional information](#)

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