Projects

Poster session

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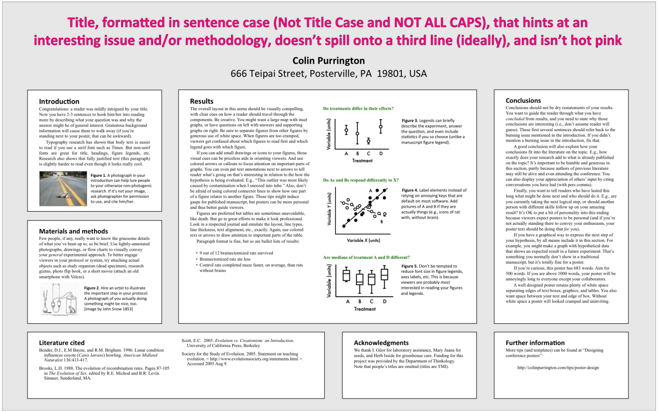

Title, formatted in sentence case (Not Title Case and NOT ALL CAPS), that hints at an interesting issue and/or methodology, doesn't spill onto a third line (ideally), and isn't hot pink

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Introduction

Congratulations: a reader was mildly intrigued by your title. Now you have 2-3 sentences to hook him/her into reading more by describing what your question was and why the answer might be of general interest. Gratuitous background information will cause them to walk away (if you're standing next to your poster, that can be awkward).

Typography research has shown that body text is easier to read if you use a serif font such as Times. But non-serif fonts are great for title, headings, figure legends, etc. Research also shows that fully justified text (this paragraph) is slightly harder to read even though it looks really cool.

Figure 1. A photograph in your introduction can help lure people to your otherwise non-photogenic research. If it's not your image, ask photographer for permission to use, and cite him/her.

Materials and methods

Few people, if any, really want to know the gruesome details of what you've been up to, so be brief. Use lightly-annotated photographs, drawings, or flow charts to visually convey your *general* experimental approach. To better engage viewers in your protocol or system, try attaching actual objects such as study organism (dead specimen), research gizmo, photo flip book, or a short movie (attach an old smartphone with Velcro).

Figure 2. Hire an artist to illustrate the important step in your protocol. A photograph of you actually doing something might be nice, too. [image by John Snow 1853]

Results

The overall layout in this arena should be visually compelling, with clear cues on how a reader should travel through the components. Be creative. You might want a large map with inset graphs, or have questions on left with answers and supporting graphs on right. Be sure to separate figures from other figures by generous use of white space. When figures are too cramped, viewers get confused about which figures to read first and which legend goes with which figure.

If you can add small drawings or icons to your figures, those visual cues can be priceless aids in orienting viewers. And use colored arrows or callouts to focus attention on important parts of graphs. You can even put text annotations next to arrows to tell reader what's going on that's interesting in relation to the how the hypothesis is being evaluated. E.g., "This outlier was most likely caused by contamination when I sneezed into tube." Also, don't be afraid of using colored connector lines to show how one part of a figure relates to another figure. These tips might induce gasps for published manuscript, but posters can be more personal and thus better guide viewers.

Figures are preferred but tables are sometimes unavoidable, like death. But go to great efforts to make it look professional. Look in a respected journal and emulate the layout, line types, line thickness, text alignment, etc., exactly. Again, use colored text or arrows to draw attention to important parts of the table.

Paragraph format is fine, but so are bullet lists of results:

- 9 out of 12 brainectomized rats survived
- Brainectomized rats ate less
- Control rats completed maze faster, on average, than rats without brains

Do treatments differ in their effects?

Variable (units)
A B C D
Treatment

Figure 3. Legends can briefly describe the experiment, answer the question, and even include statistics if you so choose (unlike a manuscript figure legend).

Do As and Bs respond differently to X?

Variable Y (units)
A
B
Variable X (units)

Figure 4. Label elements instead of relying on annoying keys that are default on most software. Add pictures of A and B if they are actually things (e.g., icons of rat with, without brain).

Are medians of treatment A and D different?

Variable (units)
A B C D
Treatment

Figure 5. Don't be tempted to reduce font size in figure legends, axes labels, etc. This is because viewers are probably *most* interested in reading your figures and legends.

Conclusions

Conclusions should not be dry restatements of your results. You want to guide the reader through what you have *concluded* from results, and you need to state why those conclusions are interesting (i.e., don't assume reader will guess). These first several sentences should refer back to the burning issue mentioned in the introduction. If you didn't mention a burning issue in the introduction, fix that.

A good conclusion will also explain how your conclusions fit into the literature on the topic. E.g., how exactly does your research add to what is already published on the topic? It's important to be humble and generous in this section, partly because authors of previous literature may still be alive and even attending the conference. You can also display your appreciation of others' input by citing conversations you have had (with pers comms).

Finally, you want to tell readers who have lasted this long what might be done next and who should do it. E.g., are you currently taking the next logical step, or should another person with different skills follow up on your amazing result? It's OK to put a bit of personality into this ending because viewers expect posters to be personal (and if you're not actually standing there to convey your enthusiasm, your poster text should be doing that *for* you).

If you have a graphical way to express the next step of your hypothesis, by all means include it in this section. For example, you might make a graph with hypothetical data that shows an expected result in a future experiment. That's something you normally don't show in a traditional manuscript, but it's totally fine for a poster.

If you're curious, this poster has 683 words. Aim for 500 words. If you are above 1000 words, your poster will be annoyingly long to everyone except your collaborators.

A well designed poster retains plenty of white space separating edges of text boxes, graphics, and tables. You also want space between your text and edge of box. Without white space a poster will looked cramped and uninviting.

Literature cited

Bender, D.J., E.M Bayne, and R.M. Brigham. 1996. Lunar condition influences coyote (*Canis latrans*) howling. *American Midland Naturalist* 136:413-417.

Brooks, L.D. 1988. The evolution of recombination rates. Pages 87-105 in *The Evolution of Sex,* edited by R.E. Michod and B.R. Levin. Sinauer, Sunderland, MA.

Scott, E.C. 2005. *Evolution vs. Creationism: an Introduction.* University of California Press, Berkeley.

Society for the Study of Evolution. 2005. Statement on teaching evolution. < http://www.evolutionsociety.org/statements.html >. Accessed 2005 Aug 9.

Acknowledgments

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Further information

More tips (and templates) can be found at "Designing conference posters":

http://colinpurrington.com/tips/poster-design

Example Conversations

– What is this work about?

– About the hyperreals, that are an extension of the real numbers to accomodate infinities and infinitesimals.

– What do you mean? Infinity is not a number!! And infinitesimals do not exist!!

– Well, this depends on your "definitions". In fact you can set up some axioms so that infinities and infinitesimals exist, and make calculus more intuitive.

– Wait, this makes no sense... Write to me in a piece of paper one of your infinitesimal numbers...

– We usually call it ε.

– No, no, no, no... I want you to write me the digits, the number...

– Digits are a representation of a concept. This representation is not useful for infinitesimals, you will have to live with calling it ε.

– Then you acknoledge that you cannot write down an infinitesimal... This is because they do not exist!!!

– I have written it: ε. By the way, you also cannot write $\sqrt{2}$, and this is why you use a symbol "$\sqrt{2}$" to denote this number.

– But this is completely different: I can approximate $\sqrt{2}$ very well by 1.4142....

– Ok, in this case ε, the infinitesimal, is also very well approximated by 0. In fact my approximation is infinitely better than yours!!

...

Rules (no mercy!):

- Check by the end of this week that you have a poster number assigned in the web page of the course.
- "Posters" should all be emailed to me **before 14.12.2017**.
- Poster session date: **14.12.2017 FROM 15:00 TO 17:00**.
- All members of the group must be present in the poster session.
- We will number the posters and take turns: even/odd.
- You will also check/evaluate your classmates posters.

An example of what not to do:

Consider the polynomial

$$x^4 - 10x^2 + 1$$

which can also be written as

$$(x^2 - 5)^2 - 24.$$

We wish to describe the Galois group of this polynomial, again over the field of rational numbers. The polynomial has four roots:

$$\begin{aligned} A =& \sqrt{2} + \sqrt{3} \\ B =& \sqrt{2} - \sqrt{3} \\ C =& -\sqrt{2} + \sqrt{3} \\ D =& -\sqrt{2} - \sqrt{3} \end{aligned}$$

There are 24 possible ways to permute these four roots, but not all of these permutations are members of the Galois group. The members of the Galois group must preserve any algebraic equation with rational coefficients involving A, B, C and D. This implies that the permutation is well defined by the image of A and that the Galois group has 4 elements. Therefore the Galois group is isomorphic to the Klein four-group.

This is no place for copying without understanding