Transferable skills training: how to make a poster

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2012-05-14
Disclaimer: these are just my views, and hopefully will make you think about ways to present your work.
Why give a poster?

- Posters are often regarded as second prize for presenting your work at a conference.
- Conference organizers need many attendees; people come normally to present their work. Don’t assume acceptance of your poster means it has undergone standard peer review process.
- Posters give more opportunity for interaction, and longer time to talk. (e.g. SFN talks are 10 minutes; posters are one hour).
- Good forum to show your ideas and meet people.
- Think of it as an advert. (Display one too if you are looking for a job, or if your group is hiring).
Examples: old style
Mechanisms underlying the formation of beta retinal ganglion cell mosaics

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Introduction

Retinal ganglion cells (RGCs) are labelled ON-because or OFF-center, depending on their receptive field (Fig. 1). Cell bodies of each type form a non-repeating pattern, termed "retinal mosaics." We do not yet know how the number of ON- and OFF-center cells is arranged during development.

- A population of five binomial-like beta cells may divide into two populations during development through binary interactions, possibly modulated by activity.

- The two types of beta cells may develop independently of each other.

Previous experimental approaches have been focused on testing for statistical independence between ON and OFF cells. There is no statistically evident that both types of neurons are located in the same location, even the constraint that no two neurons are adjacent indicates that independent types are possible.

Proportional independence approaches have been used for testing independence between ON- and OFF-center cells. These are not statistically exhaustively for both types of neurons are located in the same layer. This the constraint that no two neurons are separated by less than the soma diameter. If model predictions and maps without requiring binary interactions, this might suggest binary interaction do not occur during development.

Methods

- dmax model (Chitharanjan et al., 1997) adapted to binomial case (Fig. 3). Size of homogeneous interaction depends on a Model parameter to find best fit to real maps (Fig. 2) and will use: 1. L0 (μm) - mean (scaled) number of cells within distance of 1 μm 2. λ0 (μm) - mean distance of nearest neighbor 3. λ0 (μm) - mean distance of nearest neighbor.

- Model parameter varied to find best fit to real maps (Fig. 2) and will use: 1. L0 (μm) - mean (scaled) number of cells within distance r of cell 2. λ0 (μm) - mean distance of nearest neighbor 3. λ0 (μm) - mean distance of nearest neighbor.

Results

- Both models can be replicated by binomials (Fig. 4). dmax model (Fig. 6, 200) higher than equivalent DEP model. Function.

Conclusions

- Beta RGC maps can be simulated with limited interactions between the two neurons. Homogeneous interactions are limited to nearest neighbor coupling.

- Conventional example for a model: functions for each other (Ruddif et al., 2000).

- Beta model suggests fixed dependency between two neurons (Zhang & Troy, 2000). Can by product of model implementation.

- Functional implications of independence in maps?

Acknowledgements

Thanks to Nasa Winkler for providing map data.
Preparation before the day

1. Make sure you know the poster board size and orientation (portrait/landscape).

2. Aim to finish a few days before you depart for the meeting. Poster making takes time. For your first poster, I suggest allowing three days.

3. Do a dry-run with your supervisor (e.g. the “3–5 minute talk”) before printing final version.

4. Check what materials will be available for hanging poster (pins/velcro).

5. Beware of relying on using a laptop to show multimedia; power sockets and tables are rare.

6. At large meetings, check what other posters will be shown in the same session as yours, and arrange cover.

7. Find a poster tube and **label it!**
Planning the content

• A poster is not a journal article; focus on core figures and results.
• Use an A4 version of poster as a handout; use separate handouts for details of method.
• Posters full of text are ignored!
• Layout:
  - **Top-left** Problem and aims of the poster.
  - **Bottom-right** Summary of what you’ve shown.
  - **In-between** Method, results, FIGURES.
• Figures are the key: design them first (with good legends) and give minimal supporting text.
• Do not include abstract (submitted previously to the conference) or references. People will find them.
• Provide acknowledgements and contact info, but keep them small!
Effective figures: Edward Tufte

Keep the “Data to ink ratio” high. Remove chartjunk.
http://www.edwardtufte.com/tufte/

Sequence: http://www.tbray.org/ongoing/data-ink/di1
Improving figures: another example (O’Connor)

Source: Maeve O’Connor (1996). Writing successfully in science. Chapman & Hall. (Figure 4.1, 4.2)
Top ten worst graphs

See http://www.biostat.wisc.edu/~kbroman/topten_worstgraphs/
“What’s worse than one piechart?”
What happens on the day

- Hang your poster up early (you *might* get a good spot):
- Find out how long you are expected to be at your poster: don’t miss the allotted session.
- Offer to talk people through your work.
- Prepare a 3–5 min. summary of your poster. Don’t just read the poster.
- Hang envelope for handouts (+ to collect business cards).
Mechanics of poster making

- Mount several A4 sheets; easy to carry.
- Use A0/A1 poster. Nicer, but hard to carry, and requires specific printing.
- Print shops: PANDIS, Anatomy, Engineering. (DAMTP students can get P/O from John Turner, to avoid VAT.)
- Since Summer 2010 CMS has an A0 printer: http://www.damtp.cam.ac.uk/internal/computing/printing/poster.html
- Most print shops can handle rescaling, but ensure your aspect ratio is the same as the poster board.
- What software?
  1. Illustrator / Inkscape
  2. Powerpoint (?)
  3. \LaTeX ...
- Note: I am a fan of \LaTeX but posters require much re-arrangement of material, so you might find GUIs more suitable.
Using \LaTeX{} for making posters

http://www.damtp.cam.ac.uk/user/eglen/damtp/cuposter allows you to make poster in a simple 3 col format.

But I recommend you now try the Beamer poster style:

http://www-i6.informatik.rwth-aachen.de/~dreuw/latexbeamerposter.php
Summary

- Leave lots of time to prepare.
- Work on figures first.
- Prepare an effective 3–5 minute summary.
- Questions?
Further reading

- Edward Tufte. The visual display of quantitative information.
- Maeve O’Connor. Writing successfully in science.
- “Poster perfect”
  http://the-scientist.com/2011/09/01/poster-perfect/
- http://colinpurrington.com/tips/academic/posterdesign

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