KU LEUVEN

ICTS

(Better) Academic/Scientific/Research Posters

An anthology

2020

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This guide provides some guidelines to create a decent scientific poster. By nature a scientific poster is allowed to be somewhat boring, but it needs to have the correct information and represent it in a easy-to-follow manner. This is the main objective of this guide.

Some tips are added to take your poster a step further and transform the decent (boring) poster into an outstanding one.

1 Look before you leap

A good poster can't make up for bad research, but a bad poster can make good research hard to recognize! (Washington NASA Space Grant).

Sounds familiar?, check this post.

1.1 Definition

What is an academic poster?

- A networking tool: participation in a scientific event.
    - *Poster sessions are **informal, drop-in sessions** that allow presenters to share their (campus) experiences with colleagues on a **one-to-one** basis. Poster presenters should be prepared to provide a **brief verbal explanation** of their experiences or applications that may be illustrated through a set of **visuals** attached to a large bulletin board or via laptops/screens, etc.* (www.educause.edu).
    - Start off a discussion.
        - Feedback on your work.
        - Suggestions for improvements, extensions, etc.
    - Open collaboration with other researchers.
- A communication tool:
    - *Academic posters are a summary of what you did, how you did it, and what you learned*. (www.waspacegrant.org)
    - A **visual** abstract of your research.
    - A poster is a **snapshot** of your research. It is neither as detailed as an article nor as brief as an abstract.
    - A poster must lure the audience from a **distance**.

Take care of the abstract of your poster; visitors will use the abstract book to plan their tour

Bottom line: advertise yourself and your research.

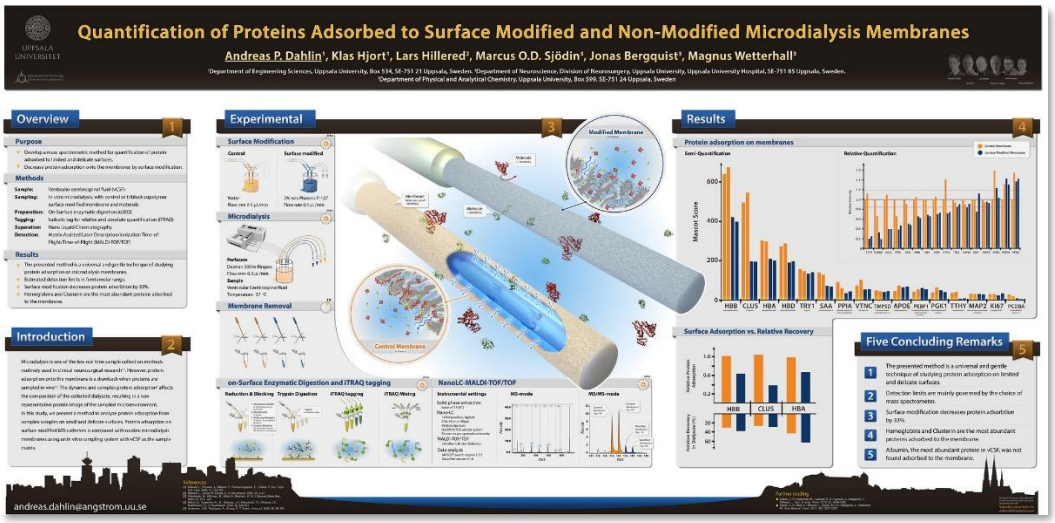

Figure 1 Typical Scientific Poster

1.2 Stepping stones

The different steps in building a poster:

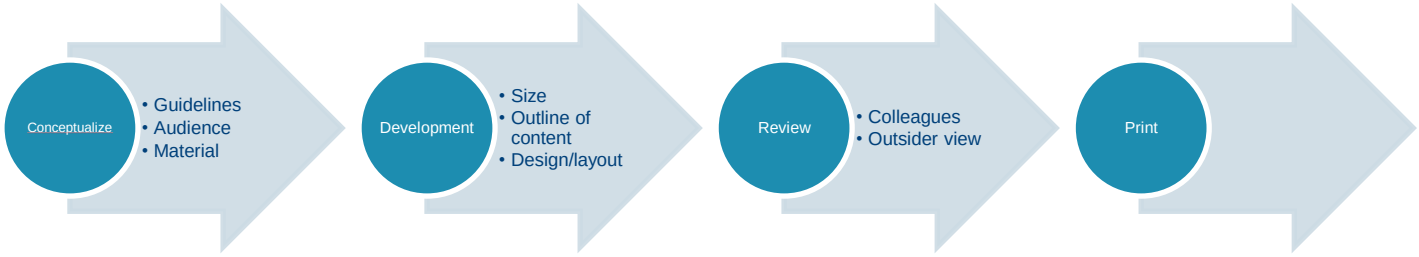

Figure 2 Scientific poster building stepping stones

Start on time! Provide at least 4 weeks.

Getting started is always difficult. A few tips from the baryon guide and the animateyourscience post can help you to get some focus.

1.2.1 Conceptualize

Collect all the necessary information: **Why** are you presenting? **What** will you present? **Who** will be the audience? **Where, When** and **How**?

1.2.1.1 Where, When and How: Read the instructions

The logistics is the easy part: read the instructions; this usually means to check the instructions. The poster that you have to create can be part of an assignment, a poster to present at a science fair, etc. Just make sure that you follow the guidelines.

- Traditional paper poster, ePoster, Virtual Poster Presentation, etc.
- Specific requirements for posters
    - Dimensions, font, handouts, color, logo, photos, etc.
- Where is it happening?
    - Location, schedule, etc.

Tip: Try to collect as much information about the meeting venue.

1.2.1.2 Who is your audience?

Think audience! It is your research, but you have to pass it on to your audience.

Who is the intended message for?

- Colleague / competitor from the same field.
- Audience from the same field, but using other techniques.
- Audience from other disciplines, but using the same techniques.
- General audience.

1.2.1.3 Why are your presenting?

Inform about the context and the relevance of your research. Be confident about your work.

1.2.1.4 What: What message would you give?

This is the difficult part: what do you want the audience to remember? Summarize your research in a few words and illustrations.

Usually it will be 1 to 3 key messages (around the conclusions of your research). Build your poster around these points.

- Have information that is
    - worth reading (impact).
    - appealing, that generates interest.
- Make a storyboard
    - What is the message that I want the audience to remember? What should readers know once they have finished reading the poster?
    - What is the logical order to bring the message? Work backwards to determine what information is needed to get to that point.

Tip: Collect all the necessary information in 1 folder, this helps for reproducibility and have a securely saved backup

- Images, schematics, charts.
- Data for tables.
- Text blocks

1.2.2 Development

1.2.2.1 A poster has physical boundaries.

- Your message has to fit on the poster
- Limited surface of the poster.
- Has to be seen from a distance.

Tip: Check with the Print Office if you have special requirements.

- (very) large dimensions.
- Color management.

1.2.2.2 Outline of the content

Use post-it's when sketching

- Start with a sketch of your poster.
- Place all the parts that you think you need on the sketch
- Get the best flow between the different parts

Tip: Less is More

1.2.2.3 Layout/design

The layout/design step must help the audience to easily get the message.

This is another hard part, where you need to find a good presentation format of the content.

1.2.2.4 Draw attention

You need to attract attention.

- The audience is in charge, the audience determines how much time is spent on your poster.
- The audience is walking, moving around.
- The audience is already saturated with information.

Make sure that the audience is coming to your poster. What makes your poster exuberant, effective, irresistible, overwhelming, memorable?

Get inspiration out of advertising

- Catchy and/or interesting title.
- Eye-catching graphics, charts.
- Attractive design
  - Unusual layout.
  - Characteristic color scheme.

1.2.2.5 To template or not to template?

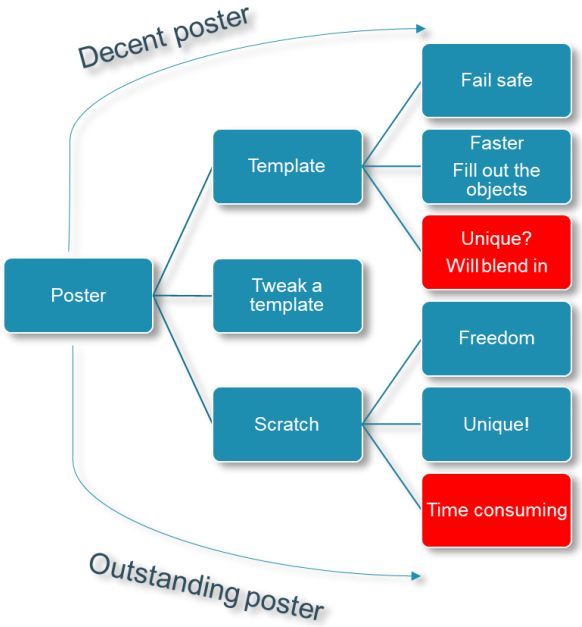

Figure 3 Pathways to a decent / outstanding poster

Plenty of templates are available on the internet. Using a template will help you to get a decent poster, it is a failsafe option. Starting from scratch and designing your own format will (possibility) get you to an outstanding poster, a poster that will be noticed. But it might take longer depending on your graphical skills.

There is an in-between option possible: start out from a template and tweak it a little to give it some unique flair.

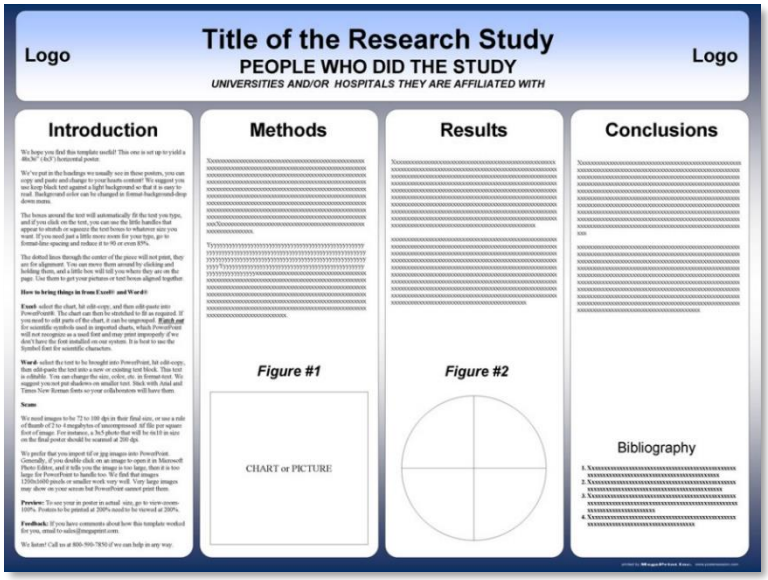

Figure 4 (typical) Scientific poster template

Tip: The majority of the scientific posters follow a standard format, if you want to standout, try to create an unusual layout

1.2.2.6 Poster 2.0

Mike Morrison (@mikemorrison Michigan State University) recently proposed an alternative poster design

- a large, central, simple takeaway message that summarizes the point of the poster in accessible language;
- a *standalone* bar on the left with a very basic introduction, methods, and discussion;
- an *ammo* bar on the right with anything that the presenter might want to have handy when talking about their poster.

Figure 5 Poster 2.0 template

1.2.2.7 Poster 1.5

A reaction on the extreme poster 2.0 approach is provided by the Poster 1.5 approach.

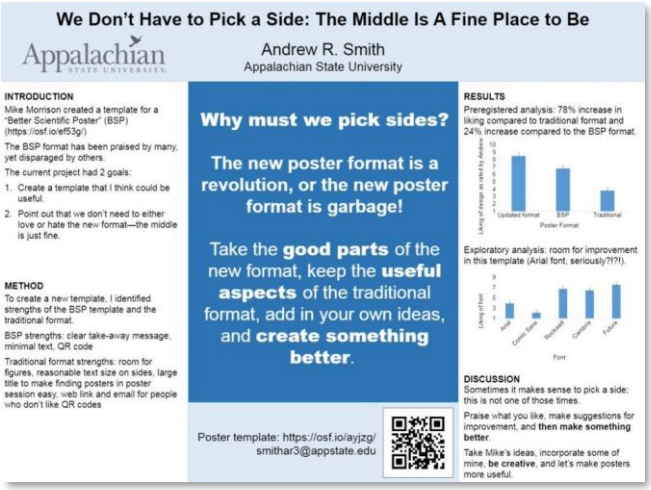

Figure 6 Poster 1.5 template

1.2.2.8 Get some inspiration

No idea? Look for a template or get inspiration from online examples.

- Looking for inspiration?
    - Check examples on the web (Google images)
    - Look for good and bad examples. What are the good / bad elements?
    - Freepik illustrations (https://www.freepik.com/vectors/illustrations)
    - Check ePoster websites
        - https://www.eposters.net/
        - https://epostersonline.com/
- Start with a template (*Google: scientific poster template*)
    - Pimp the template
- Poster 1.5
    - https://derekcrowe.net/butterposter
    - https://www.posterpresentations.com/free-poster-templates.html
- Poster 2.0
    - https://youtu.be/1RwJbhkCA58

Build an idea book with the graphical elements that appeal to you.

- KU Leuven template
    - https://www.kuleuven.be/communicatie/marketing/templates/kuleuven_postersjabloon.html
    - https://www.kuleuven.be/communicatie/marketing/intranet/logosensedes

1.2.2.9 Pitfalls

Bad posters are easy to make:

- Too much text (common problem).
- Usually last minute work and results
- Posters are being recycled
- Not everyone is a designer
    - Too flashy
    - Too complicated

Handouts can be used to give (extra) background information

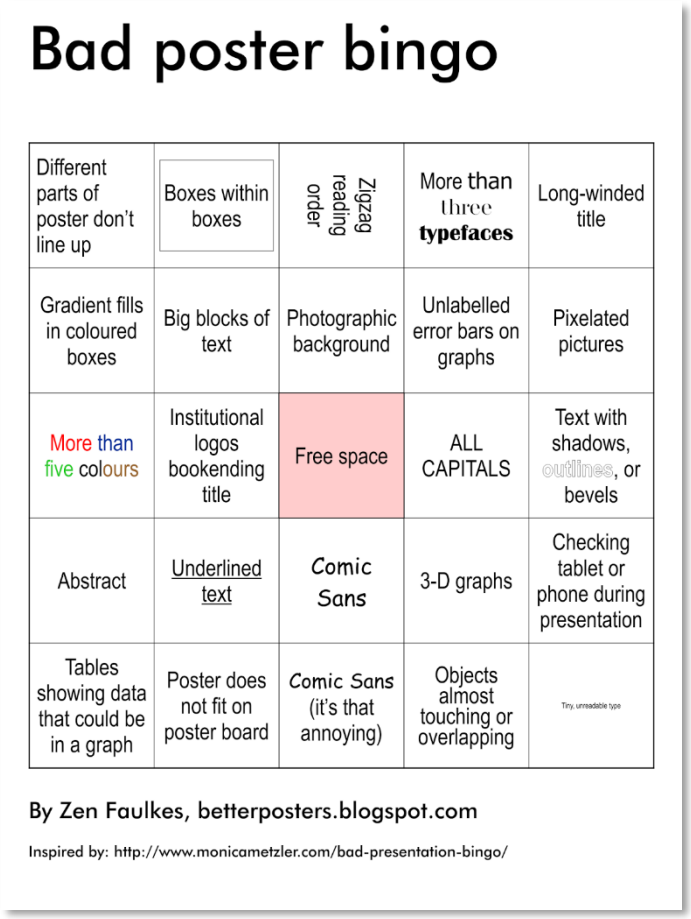

Figure 7 Bad Poster Bingo

1.2.3 Review the poster

Pay attention to:

- Content
- Structure
- Visual impact
- Clarity

Verify, check, control!

- Is everything correct?
  - Units in figures, conclusions, etc.
  - All figures labeled?
  - Etc.
- Typos.
- Uniform use of color.
- Uniform charts, figures, etc.

Tip: Poster Judging Rubrics can be very useful to check your poster.

2 Anatomy

20% Text,
40% Graphics,
40% White space

What should be in it?

- Title, author(s) and affiliation.
- Background, objectives.
- Materials, methods, procedures.
- Results.
- Conclusion, discussion.
- References, acknowledgements.

2.1 Title

Cfr thesis title.

- Catchy.
- To-the-point.
- Concise.
- Visible from 5m.

Reality? The audience will browse posters looking for A) keywords in the title, B) names they recognize in the author list, and C) what institution the poster's from. What you actually did is unfortunately secondary

2.2 Author(s) + affiliation

Write first names in full.

- Initials and titles are not needed.
- Add a photo of the person who is presenting the poster, or highlight name.
- Check with advisor on the author list.
- Don’t forget the affiliation.

2.3 Background, objectives

Max 200 words.

The poster is the elaborated version of the abstract that was sent in.

- Purpose of the research.
- Experimental approach.
- Clearly mention the hypotheses.
- You can already state the conclusions

The abstract is already in the proceedings, do not repeat it.

2.4 Method

Max 200 words.

Try to use as much visual elements as possible:

- Schematics.
- Images.

Text

- Use bullets, short sentences.
- Where possible, avoid jargon, abbreviations
- Avoid footnotes.

2.5 Data/results

- KISS (keep it short and simple)
  - Get rid of all non-essential information.
- Use graphic element to grab the attention.
- Rule:
  - 20% text.
  - 40% graphics.
  - 40% white space.
- Tables:
  - Limited number of data.
  - Label the columns.
- Charts:
  - Large number of data.
  - Do not forget to label the plots, axes, put a title, etc.
  - Make the graphics large, must be visible from 2m!

2.6 Conclusion

Emphasize the important/strong points

- New insights/interpretations
- Use bullets to distinguish the different elements

2.7 References

- Only the important – no literature study.
- Can be expanded during conversation.

2.8 Acknowledgements

- Funding
- Who was helping you out with your research

3 Production

3.1 Powerpoint tips

A very good guide is provided by Oxford University, get this guide and use it as reference material.

- Page setup
  - Start immediately by setting the correct final dimensions of the poster (84cm * 118cm)
  - Limit on dimensions in PowerPoint
    - Max 142 cm
  - Have a look at 100% (detailed view for the graphics)
  - Use ruler and guides
  - Use the Zoom function
  - Think big: must by readable from 2m; title must be readable from 5m.
- Text
  - Align (text and text blocks)
    provides a sense of order
  - Align left, do not use justify
  - Layout
    - 7-8 words per line
    - Limit the size of a text line, make it easy for the reader
- Font
  - Easy-to-read font
  - Large enough
  - Limit the number to a minimum (3)
- Layout
  - From left to right, from top to bottom.
  - Visualize the flow.
- Align + balance
  - Left align, do not justify.
  - Align text blocks, graphics: use the align tool
  - Keep the column width the same
- Charts
  - Background is not helpful.
  - Put info next to the plot, no need for a legend.
  - Are gridlines necessary?
  - Label Y-axis horizontally.
  - Is it visible from 2m?
  - Limit the use of 3D-charts.

- Images/figures
    - Use high quality pictures (300 - 600ppi), be careful that the file size is still acceptable (<100 MB – problems when printing)
        - Avoid illustrations taken from web
            - Low resolution
        - Copyright (flickr.com - Only search within **Creative Commons**-licensed content)
    - Label all figures
    - Trim figures, keep only the important part.
    - Avoid clip-art.
    - When needed, use appropriate software to touch up your images (Photoshop, gimp, pixlr.com...)
    - Lock aspect ratio – no distortions.
    - Check poster at 100%
- Color
    - Go for light colors. No dark backgrounds (only for titles).
    - Avoid pure decoration, color has to be functional.
    - Limit the number of different colors (3).
    - Avoid gradients and transparency.
    - Color blindness. http://www.vischeck.com/vischeck/vischeckImage.php

3.2 Print

icts.kuleuven.be/sc/plotter

- Do not wait until the last minute!!! Provide 2 days; *Murphy is waiting around the corner.*
- Use PDF as file type (PowerPoint can export as PDF)
- Make sure the dimensions are correct.
- Check the poster before sending (typo, is everything in it? etc.)
- Avoid dark backgrounds and gradients
    - Banding
    - Too much ink curls the paper
- Glossy paper is photo quality paper
    - professional
    - best ink absorption
    - reflections
- Resistance
    - Ink is not water resistant
    - UV-resistance, posters will get pale.
- Color?!

- Colors on print <> colors on screen.

4 Sources

Status: 2020

Websites to check!

- Zen Faulkes blog
  betterposters.blogspot.com
- Colin Purrington
  colinpurrington.com/tips/academic/posterdesign
- Poster 2.0
  https://youtu.be/1RwJbhkCA58
- Justin Matthews
  http://justinlmatthews.com/posterhelp/posterguide/

Articles

- Nature
  Conference presentations: Lead the poster parade
- Erren TC, Bourne PE (2007) Ten Simple Rules for a Good Poster Presentation.
  https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.0030102
- Rougier N, Droettboom M.,Bourne PE, Ten Simple Rules for Better Figures,
  https://journals.plos.org/ploscompbiol/article?id=10.1371/journal.pcbi.1003833

Professional poster printing (tips + templates)

- www.posterpresentations.com
- blog.postersession.com
- www.makesigns.com
- phdposters.com

Poster journal

- www.eposters.net
- epostersonline.com

Images

- Flickr (www.flickr.com): In advanced search, search on content with CC licenses. (www.flickr.com/search/advanced)

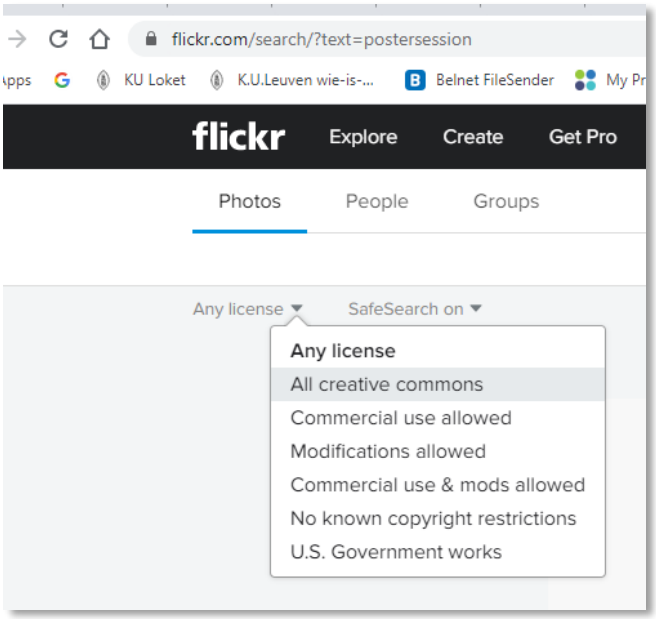

Figure 8 Flickr Advanced Search

- Google images: In advanced search (www.google.com/advanced_image_search?hl=eng) search on content with CC licenses.
- Morgue File - www.morguefile.com
- Wikimedia Commons - commons.wikimedia.org
- Library of Congress Prints & Photographs online - www.loc.gov/pictures

Design tips

- https://www.canva.com/learn/design-elements-principles/
- https://www.interaction-design.org/literature/article/the-building-blocks-of-visual-design
- Williams, Robin. The Non-Designer's Design Book: Design and Typographic Principles for the Visual Novice. 2nd edition. Berkeley, California: Peachpit Press, 2004.

Infographics

- https://coolinfographics.com/blog/tag/science
- https://informationisbeautiful.net/
- https://www.freepik.com/free-photos-vectors/infographic

Working with illustrations

- https://it.hms.harvard.edu/our-services/research-computing/research-imaging-solutions/ris-seminar-handouts

Which chart?

- https://infogram.com/page/choose-the-right-chart-data-visualization
- https://guides.lib.berkeley.edu/data-visualization/type
- https://www.edrawsoft.com/chart/choose-right-chart.html

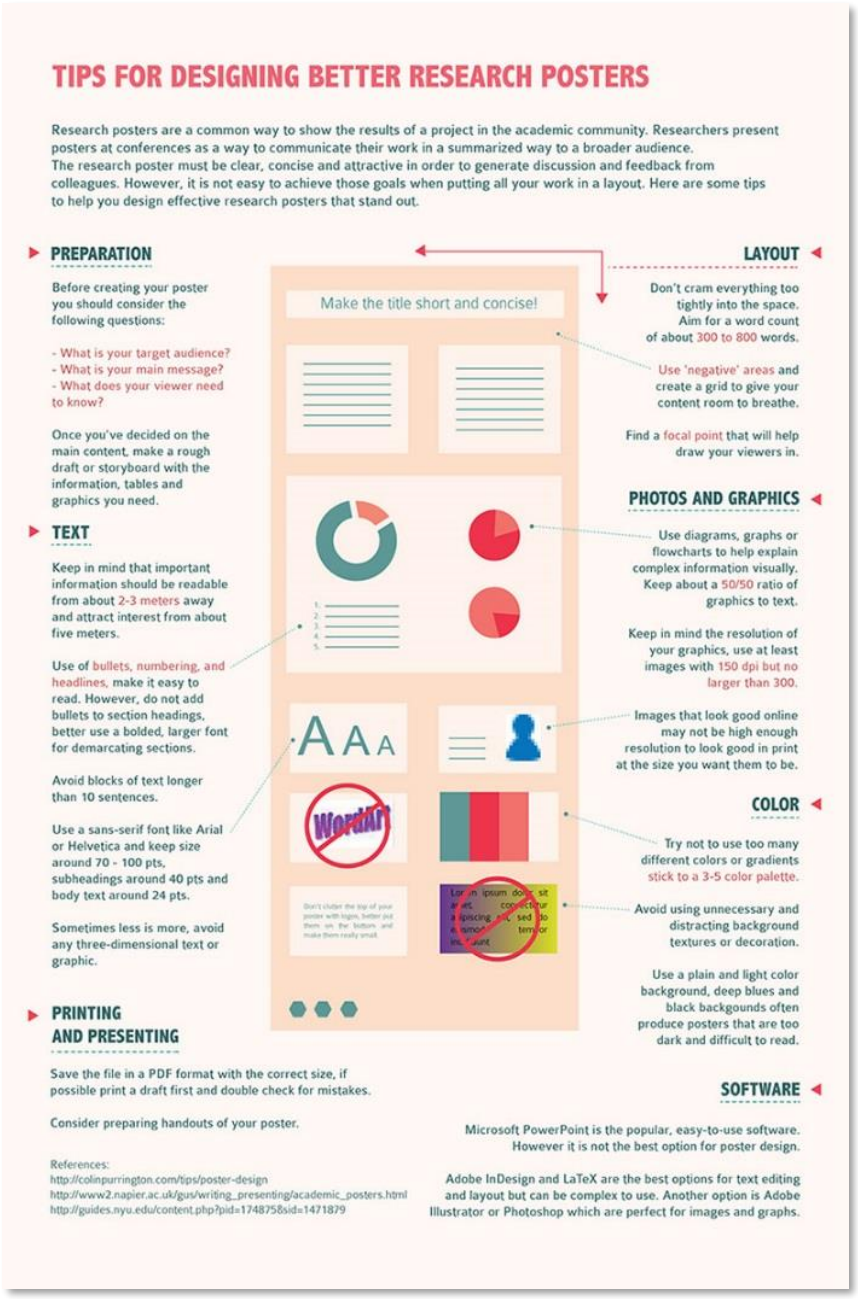

Figure 9 Elsevier Research Poster Guidelines

Poster on Designing
a Poster for Conferen

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3000 Heverlee, BELGIË
https://admin.kuleuven.be/icts