Poster Perfect

Tips and Tricks to CREATE Successful Scientific Posters

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Poster Perfect:

Tips and Tricks to CREATE Successful Scientific Posters

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More information
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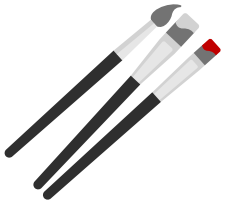

- How to create a successful scientific poster?
- How do I avoid common pitfalls?
- Get insights and ask questions in a Q&A!

Marthe Tulpin
(Ghent Health Psychology Lab, Ghent, and End-of-Life Care Research Group, Vrije Universiteit Brussel (VUB) & Ghent University, Belgium)

CREATE is a subdivision of the European Health Psychology Society, promoting education and collaboration for early career researchers in the field.

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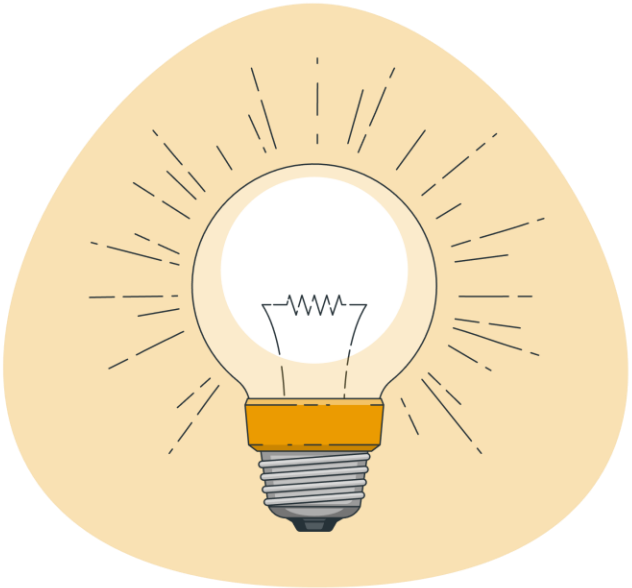
Learnings



1. Skills to create **compelling and visually appealing** scientific posters
2. Effective strategies for **communicating complex research findings** through visuals and concise text
3. Practical tips for **organizing information** and maintaining engagement on a poster

Webinar Structure

1. Content and how to structure it
2. Key visual principles
3. Handy tools
4. What does a poster presentation look like?

1 Content and how to structure it

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Be sure about your message!

3 Important Questions

What is it you would like to communicate?

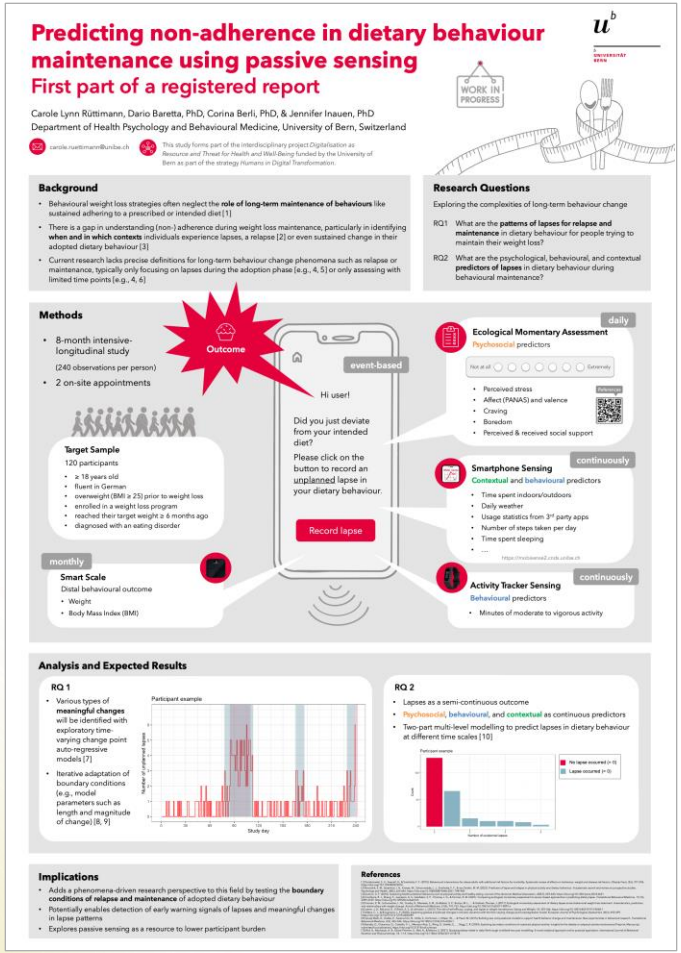
- Study protocol
- Pilot study
- Results presentation
- Systematic review
- …

Who is your audience?

- Research or practice?
- Discipline(s)
- …

→ Knowledge and language

EHPS 2024



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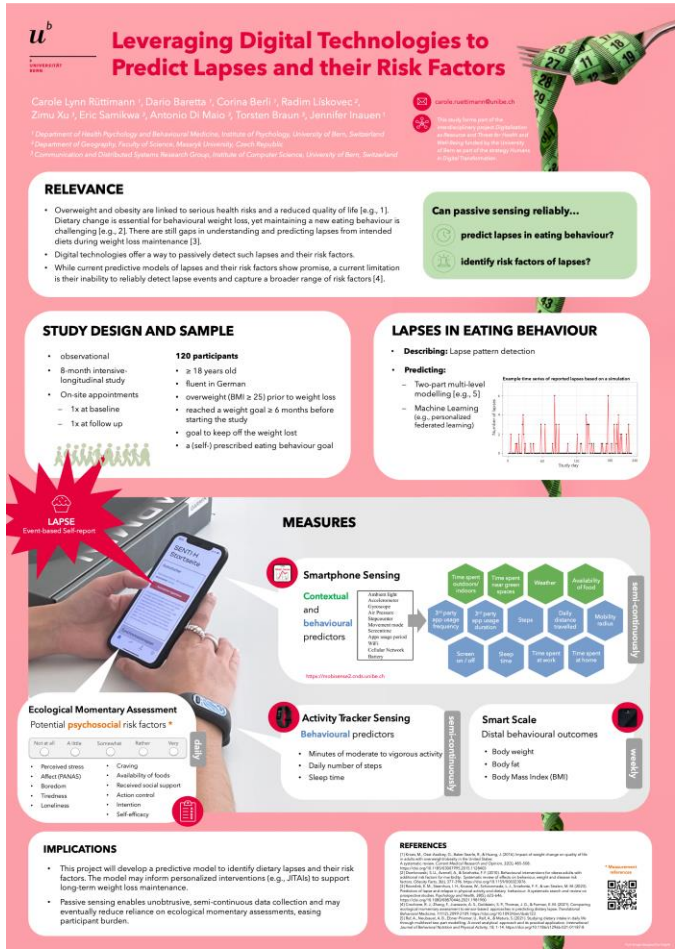


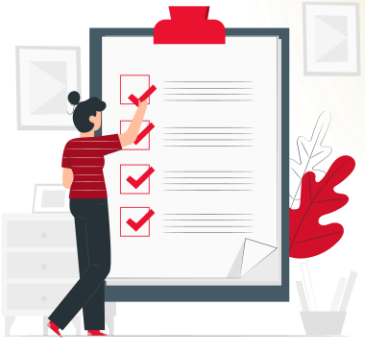
Be sure about your message!

3 Important Questions

What is it you would like to communicate?	Who is your audience?	What should they remember?
• Study protocol • Pilot study • Results presentation • Systematic review • …	• Research or practice? • Discipline(s) • … → Knowledge and language	• Main finding • New concept • Open research question • …

Key Components

Content Checklist



- Title
- Authors and affiliations, institution logo
- Background on the general topic
- Project aims
- Methods
- Results
- Conclusion or take-home message
- References
- Contact details
- Funder (if applicable)

Content Structuring

Original ways to structure your poster

- Problem - Solution - Benefit
- What? - Why? - How? - So what?
- Background, aim, methods based on the ‘AND - BUT - THEREFORE’ structure
- …

Content Structuring

And

Cancer is defined by uncontrolled cell growth **AND** affects millions of people worldwide.

But

BUT traditional therapies are not always effective and can cause severe side effects.

Therefore

THEREFORE, there is a need to develop personalised therapies with fewer side effects.

2 Key visual principals

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Rules of the game

4 Tips

Less is more, **do not** make it crowded!

Draw the **attention** to the most important parts.

Make it easy to navigate through…

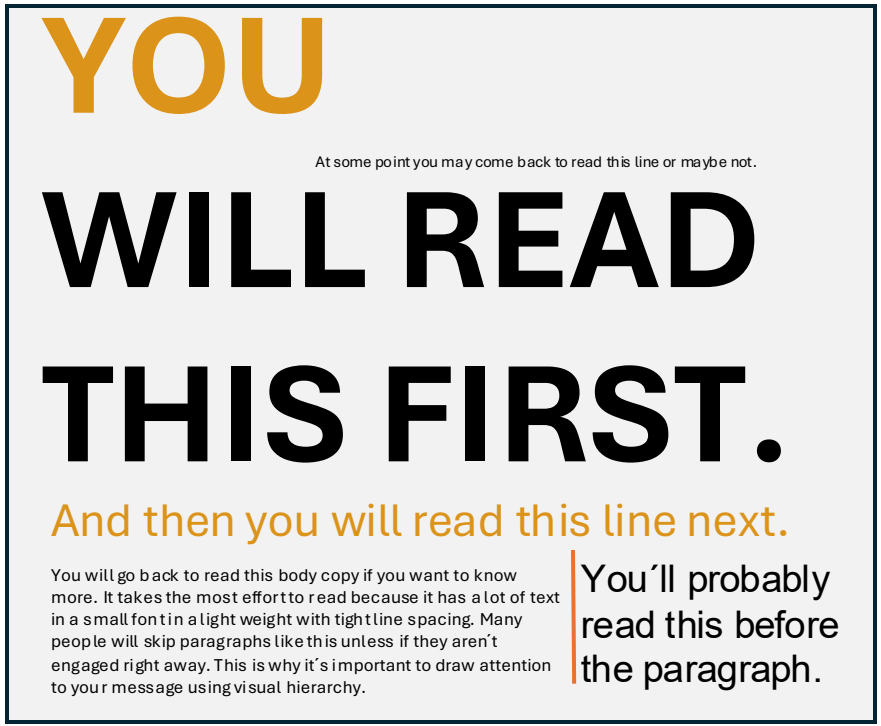
Make it appealing, not boring.

HIERARCHY – BALANCE – READABILITY

HIERARCHY

Hierarchy

Use size variation to emphasize important elements



Hierarchy

Make use of panels

Panels create hierarchy and visual grouping

Panels help organize related content and establish a clear structure within your design. They create visual boundaries that help viewers understand which elements are important and which elements belong together.

Hierarchy

Make use of headers

1
Primary headers
Main titles that identify major sections

2
Secondary headers
Subheadhings that organize content within sections

3
Tertiary headers
Minor headings for detailed organization

Hierarchy

Make use of typography

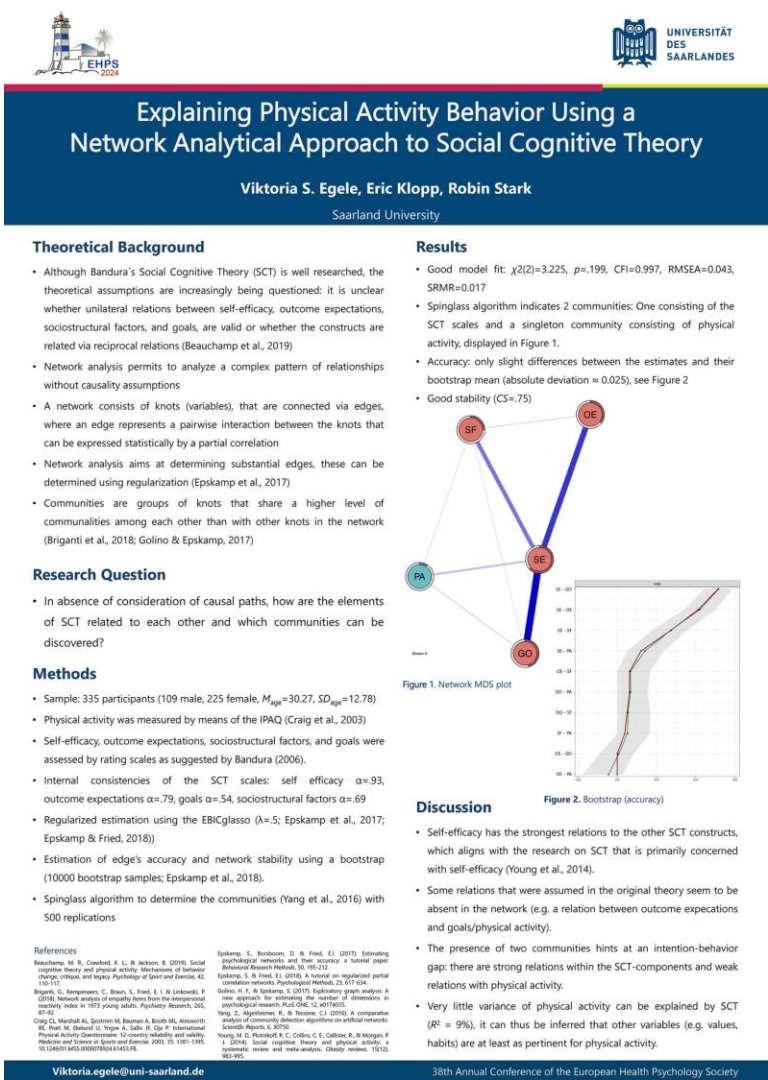
Bold text
Creates emphasis and draws immediate attention to important information. Use for headlines and **key points** that need to stand out.

Italic text
Provides subtle distinction and can indicate secondary information or *special terminology*. Use sparingly for emphasis within body text.

ALL CAPS
Creates strong visual impact and can be used for short, important headlines. Avoid using for long text as it reduces readability.

Hierarchy in action: An example

- **Varying sizes** to direct attention
- **Panel elements** to group related content
- **Typography** choices that distinguish information types
- Clear **headers** that organize content sections



Explaining Physical Activity Behavior Using a Network Analytical Approach to Social Cognitive Theory

Viktoria S. Egele, Eric Klopp, Robin Stark

Saarland University

Theoretical Background

- Although Bandura's Social Cognitive Theory (SCT) is well researched, the theoretical assumptions are increasingly being questioned: it is unclear whether unilateral relations between self-efficacy, outcome expectations, sociostructural factors, and goals, are valid or whether the constructs are related via reciprocal relations (Beauchamp et al., 2019)
- Network analysis permits to analyze a complex pattern of relationships without causality assumptions
- A network consists of knots (variables), that are connected via edges, where an edge represents a pairwise interaction between the knots that can be expressed statistically by a partial correlation
- Network analysis aims at determining substantial edges, these can be determined using regularization (Epskamp et al., 2017)
- Communities are groups of knots that share a higher level of communalities among each other than with other knots in the network (Briganti et al., 2018; Golino & Epskamp, 2017)

Research Question

- In absence of consideration of causal paths, how are the elements of SCT related to each other and which communities can be discovered?

Methods

- Sample: 335 participants (109 male, 225 female, M_{age}=30.27, SD_{age}=12.78)
- Physical activity was measured by means of the IPAQ (Craig et al., 2003)
- Self-efficacy, outcome expectations, sociostructural factors, and goals were assessed by rating scales as suggested by Bandura (2006).
- Internal consistencies of the SCT scales: self efficacy α=.93, outcome expectations α=.79, goals α=.54, sociostructural factors α=.69
- Regularized estimation using the EBICglasso (λ=.5; Epskamp et al., 2017; Epskamp & Fried, 2018))
- Estimation of edge's accuracy and network stability using a bootstrap (10000 bootstrap samples; Epskamp et al., 2018).
- Spinglass algorithm to determine the communities (Yang et al., 2016) with 500 replications

Results

- Good model fit: $\chi 2(2)=3.225$, $p=.199$, CFI=0.997, RMSEA=0.043, SRMR=0.017
- Spinglass algorithm indicates 2 communities: One consisting of the SCT scales and a singleton community consisting of physical activity, displayed in Figure 1.
- Accuracy: only slight differences between the estimates and their bootstrap mean (absolute deviation ≈ 0.025), see Figure 2
- Good stability (*CS*=.75)

Figure 1. Network MDS plot

Figure 2. Bootstrap (accuracy)

Discussion

- Self-efficacy has the strongest relations to the other SCT constructs, which aligns with the research on SCT that is primarily concerned with self-efficacy (Young et al., 2014).
- Some relations that were assumed in the original theory seem to be absent in the network (e.g. a relation between outcome expecations and goals/physical activity).
- The presence of two communities hints at an intention-behavior gap: there are strong relations within the SCT-components and weak relations with physical activity.
- Very little variance of physical activity can be explained by SCT (R^2 = 9%), it can thus be inferred that other variables (e.g. values, habits) are at least as pertinent for physical activity.

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Golino, H. F., & Epskamp, S. (2017). Exploratory graph analysis: A new approach for estimating the number of dimensions in psychological research. PLoS ONE, 12, e0174035.

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Young, M. D., Plotnikoff, R. C., Collins, C. E., Callister, R., & Morgan, P. J. (2014). Social cognitive theory and physical activity: a systematic review and meta-analysis. *Obesity reviews*, 15(12), 983-995.

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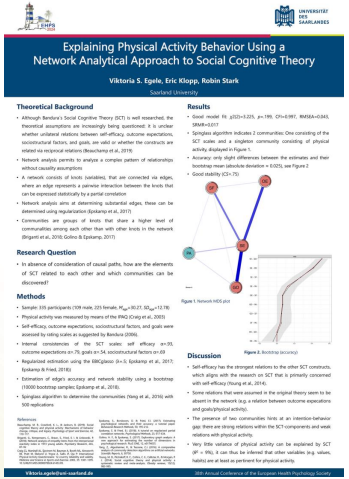
BALANCE

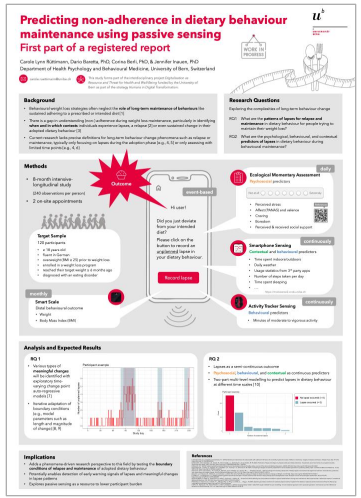
Balance

Examples

Balance

Creating visual harmony





Symmetrical balance

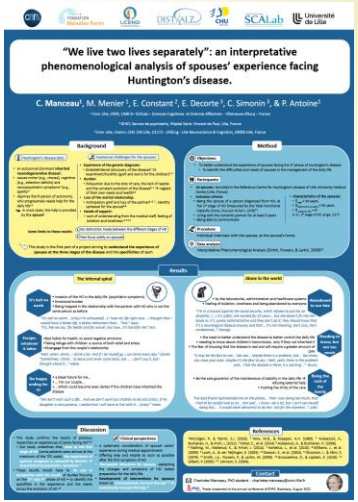
- Elements are evenly distributed on either side of a central axis, creating a formal, stable appearance.

Asymmetrical balance

- Unequal elements create equilibrium through careful placement, often resulting in more dynamic designs.

Radial balance

- Elements radiate from a central point, creating circular harmony and drawing focus to the center.



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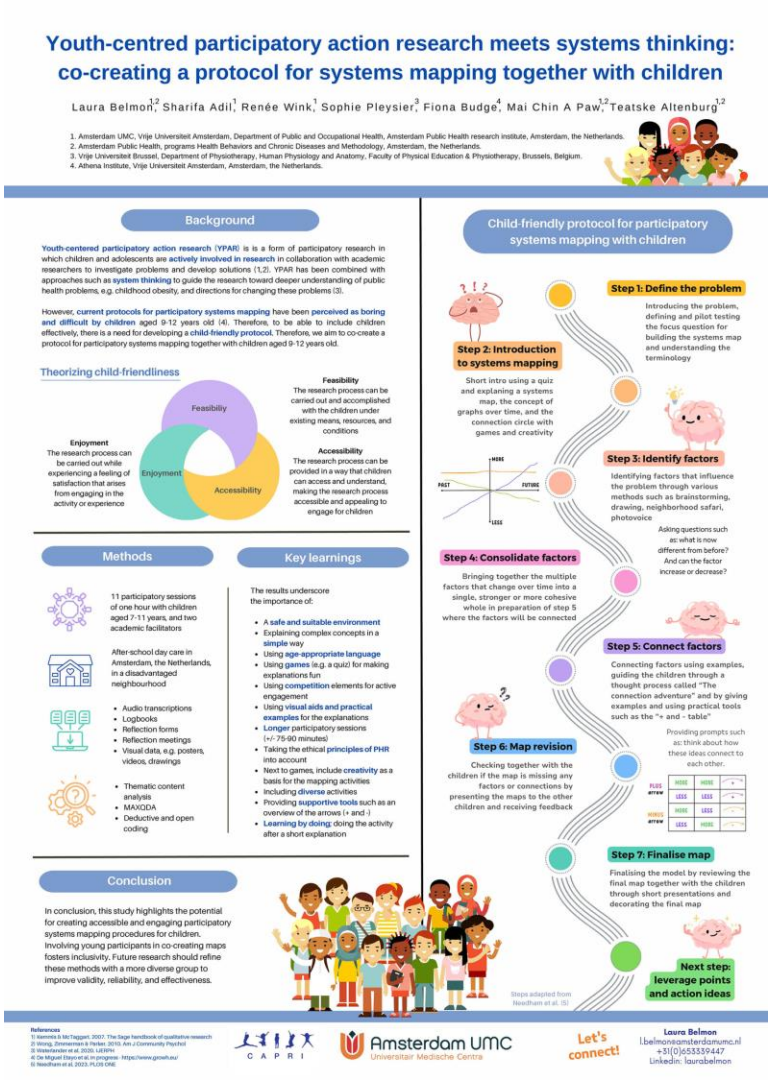
Balance

Best Practices for Visual Elements

- Incorporate **meaningful visuals**
- Ensure visual content **directly relates** to your textual information
- Consider the **placement and size** of visuals
- When properly integrated, visuals become powerful communication tools that work in harmony with your hierarchical structure and balanced composition



Balance

Benefits of white space

- Creates **breathing room** for design elements
- Improves **comprehension** and information processing
- Establishes **relationships** between elements
- Directs **attention** to what matters most

Let your design elements breathe!

Balance

Benefits of white space

Heading

Sub-Headline

Nunc faucibus a pellentesque sit amet porttitor eget. Ligula ullamcorper malesuada proin libero nunc consequat. Feugiat nisl pretium fusce id velit ut tortor pretium viverra. Diam quis enim lobortis scelerisque fermentum dui. Diam donec adipiscing tristique risus nec feugiat. Ornare aenean euismod elementum nisi quis eleifend quam adipiscing. Quis commodo odio aenean sed.

Don't

Heading

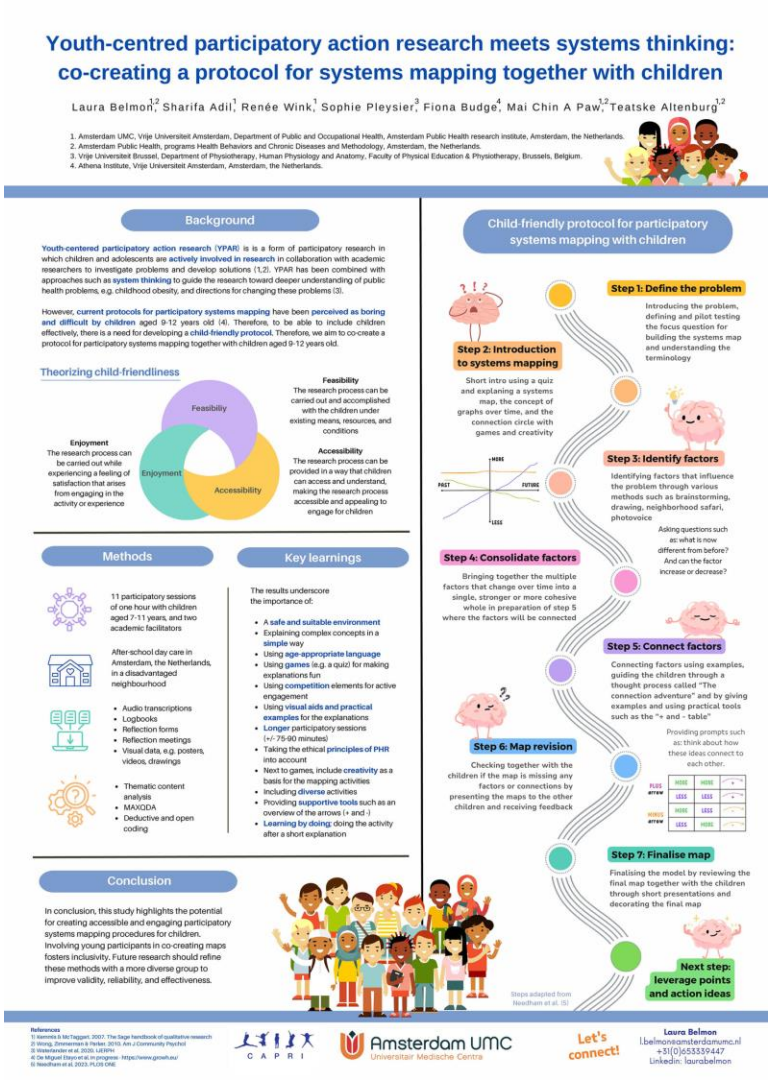
Sub-Headline

Nunc faucibus a pellentesque sit amet porttitor eget. Ligula ullamcorper malesuada proin libero nunc consequat.

Feugiat nisl pretium fusce id velit ut tortor pretium viverra. Diam quis enim lobortis scelerisque fermentum dui.

Diam donec adipiscing tristique risus nec feugiat. Ornare aenean euismod elementum nisi quis eleifend quam adipiscing. Quis commodo odio aenean sed.

Do



READABILITY

Readability

Text size
Ensure text is large enough to read from a distance.
Headlines: 24-36pt, Body text: minimum 18pt

Font choice
Select legible fonts and limit to 2-3 typefaces per design.
Sans-serif fonts often work best.

Contrast
Maintain high contrast between text and background.
Dark text on light backgrounds or vice versa works best.

Readability

Color scheme

Helpful tools

- Color combination guide: https://webflow.com/blog/best-color-combinations
- Color palette generator: https://coolors.co/
- Color accessibility: https://www.color-blindness.com/coblis-color-blindness-simulator/

2 Key visual principles

HIERARCHY – BALANCE – READABILITY

3 Handy tools

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Selected Websites and Software

Illustrations & Icons

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- unDraw: undraw.co
- DrawKit: drawkit.com
- OpenDoodles: opendoodles.com
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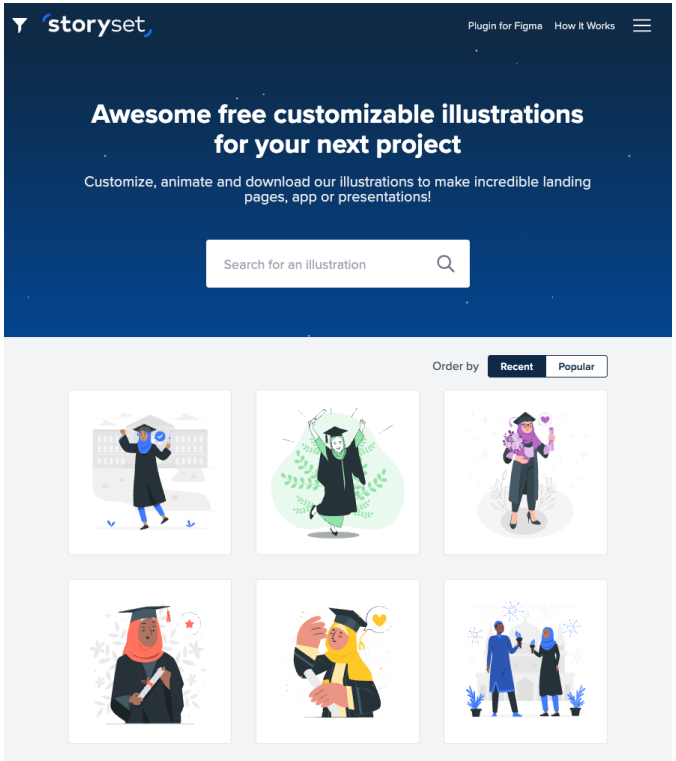

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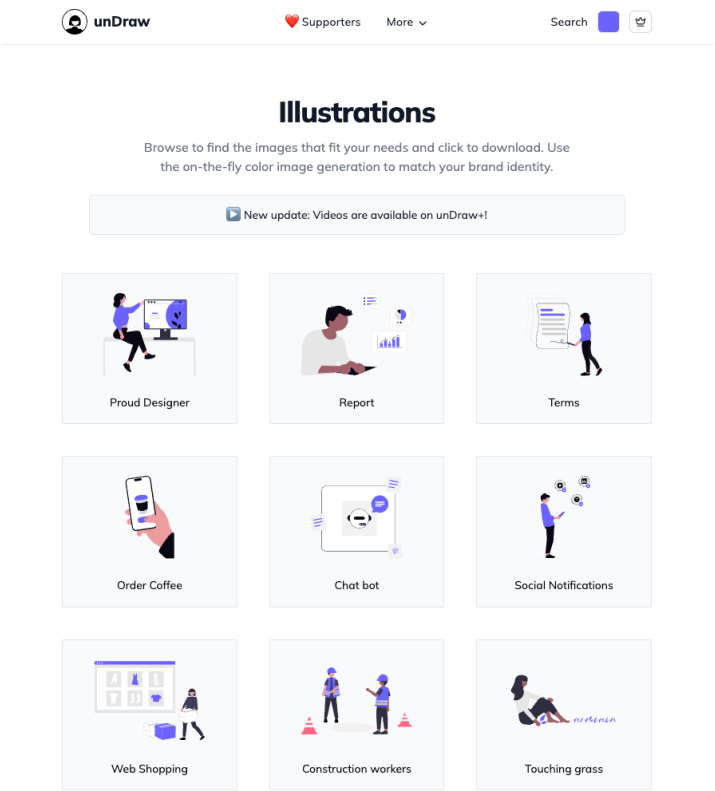

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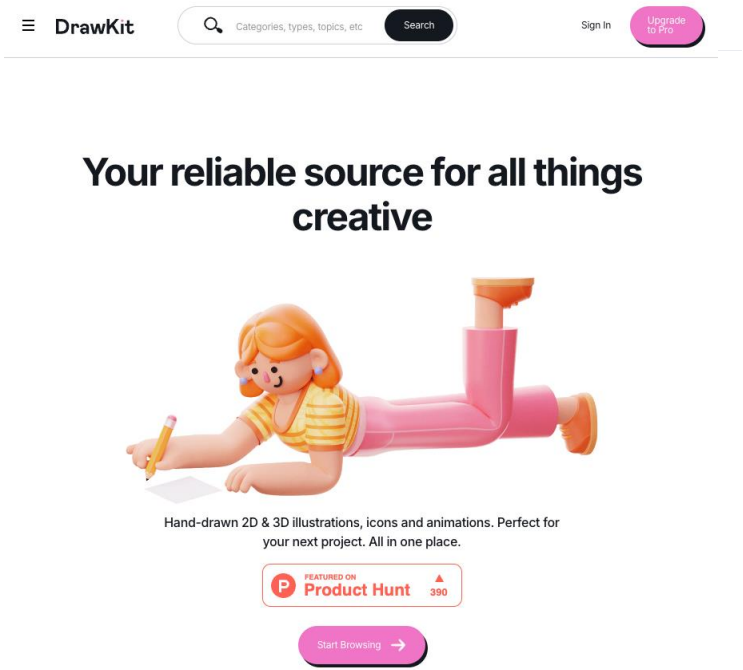

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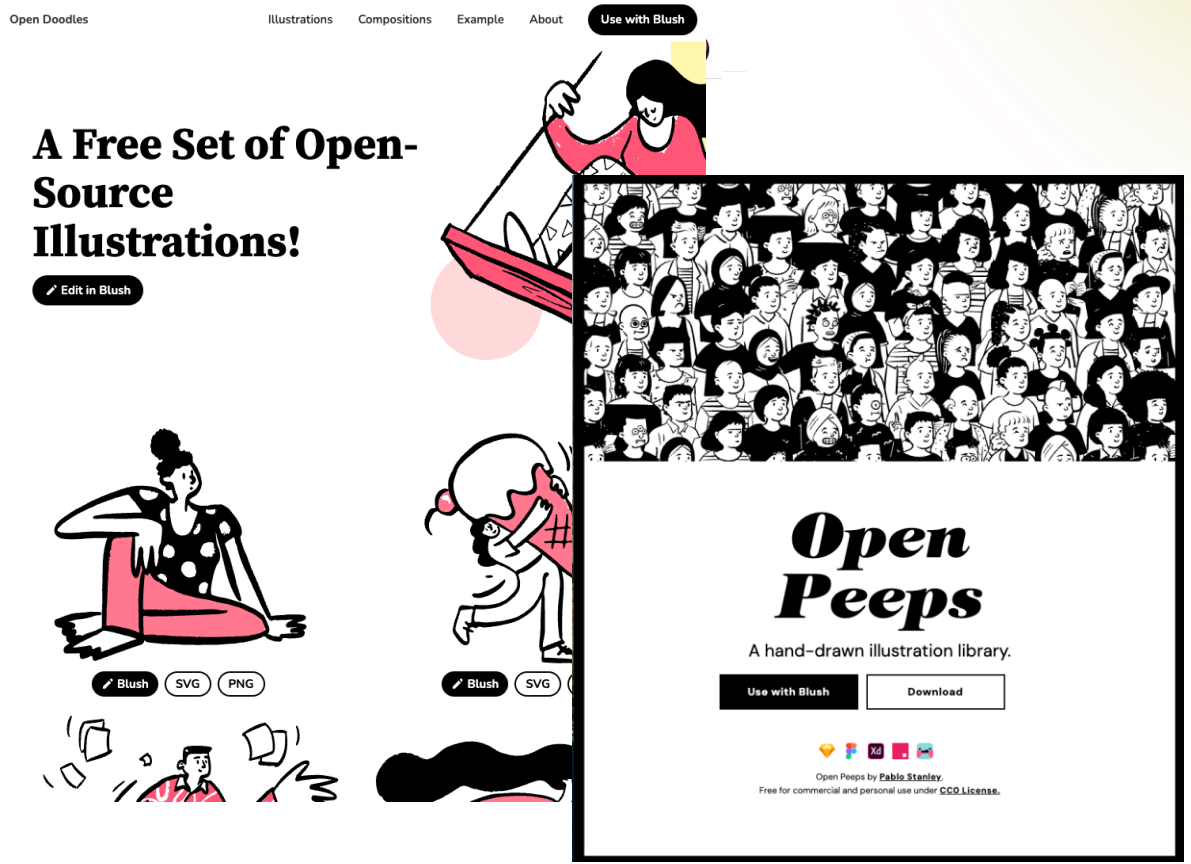

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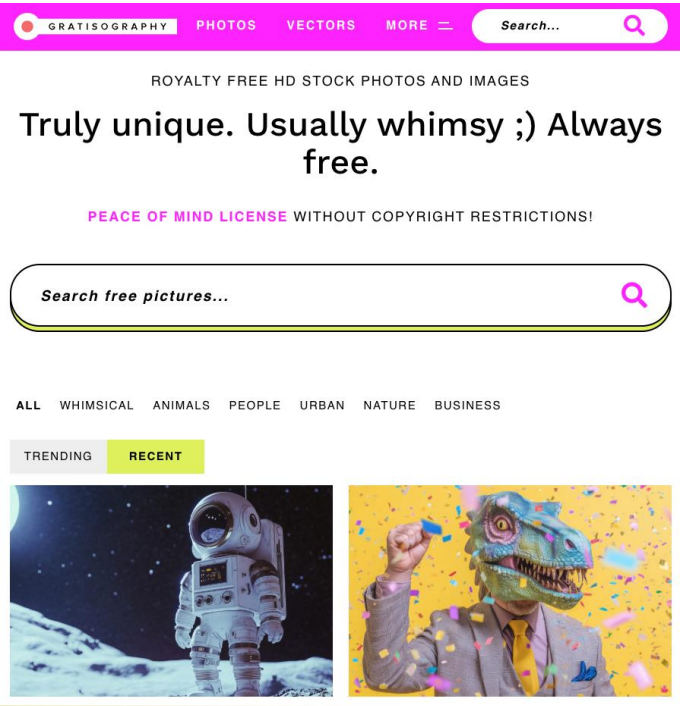

Pictures

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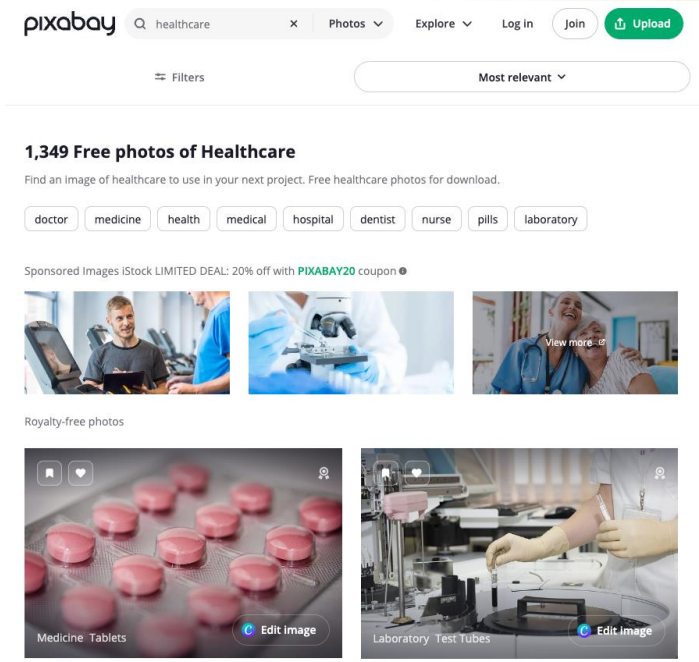

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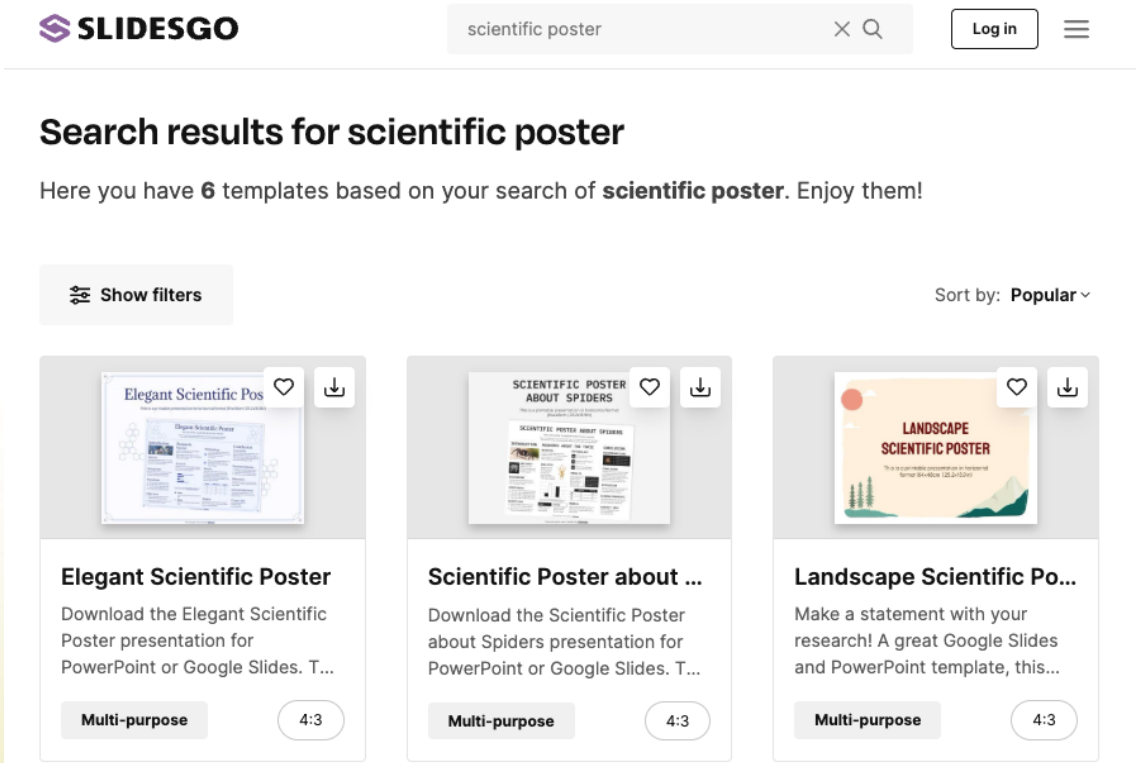

Presentations

- Microsoft Power Point
- LibreOffice: www.libreoffice.org
- SlidesGo: slidesgo.com
- Canva: www.canva.com

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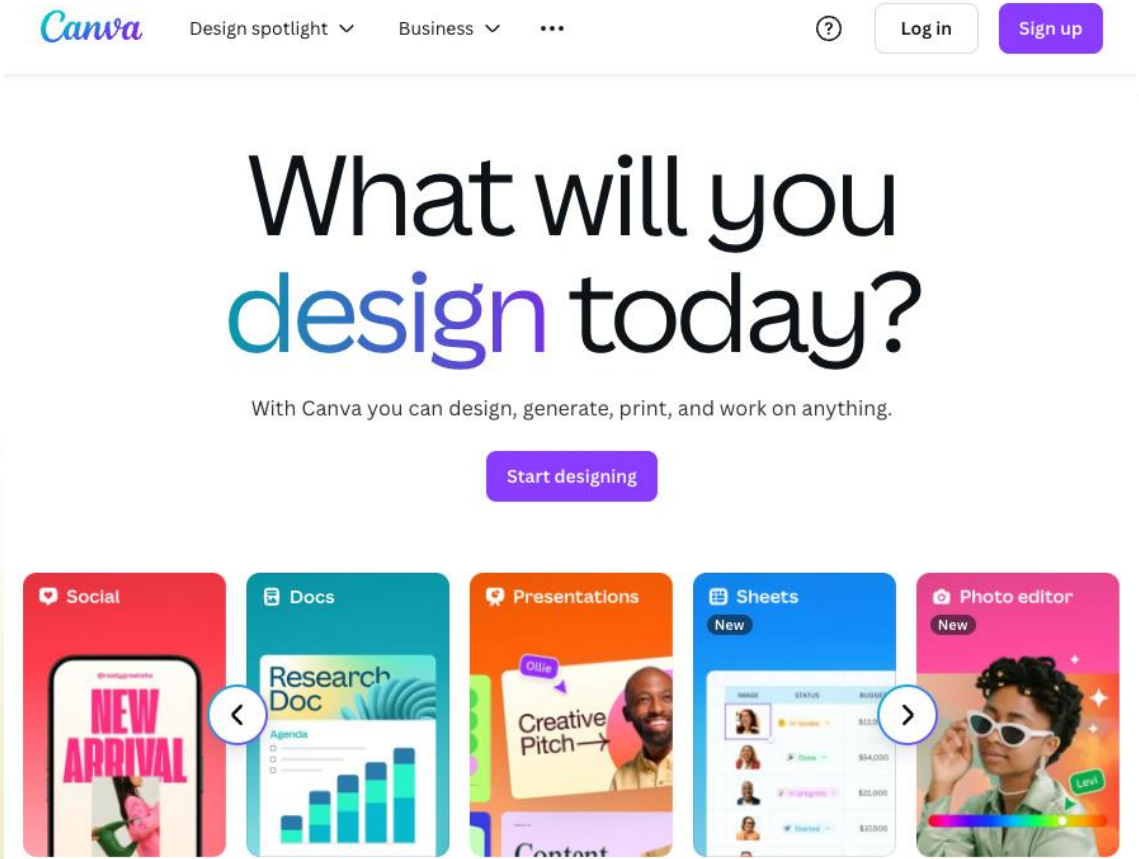

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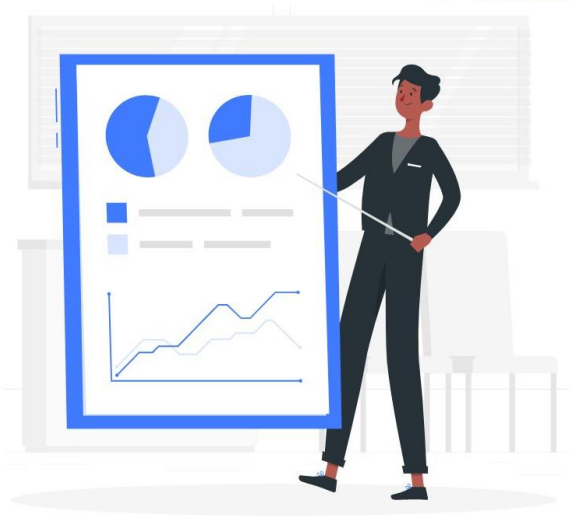
4 What does a poster presentation look like?

Poster presentation

Things to consider

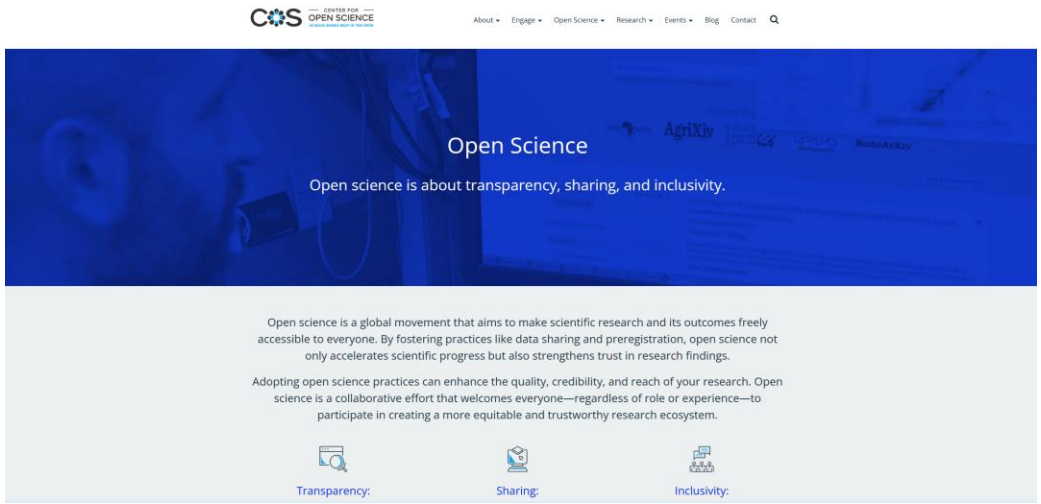
- Printing your poster
- Presenting your poster
  - Pitch/read
  - Answer questions
  - Focus on the main message!



After the conference

Things to consider

- Share your poster (e.g.: the Open Science Framework)



Recap

1. Content and how to structure it
2. Key visual principles
3. Handy tools
4. What does a poster presentation look like?

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Take Home Message

1. Focus on the main content.
2. Check Hierarchy, Balance, and Readability to create a visually appealing poster.
3. Explore some new tools.
4. Have fun preparing and presenting your poster!

THANK YOU!

Q&A

Poster Perfect:

Tips and Tricks to CREATE Successful Scientific Posters

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Marthe Tulpin
(Ghent Health Psychology Lab, Ghent, and End-of-Life Care Research Group, Vrije Universiteit Brussel (VUB) & Ghent University, Belgium)

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