

DESIGNING AN EFFECTIVE RESEARCH POSTER

OBJECTIVES OF A POSTER PRESENTATION

- To inform
 - To display information clearly and concisely
 - To be engaging and eye-catching
-

AUDIENCE

- Specialist
 - Students
 - General public
-

AUDIENCE

- How much existing knowledge does your audience have of your research project, methods and terminology?

LAYOUT - TEXT

- Clear, Large font
- Contrast font with background (black font vs white background, white font vs dark background e.g., dark blue)
- Do not use too much text
- Increased spacing

Small Text
Medium Text
Large Text

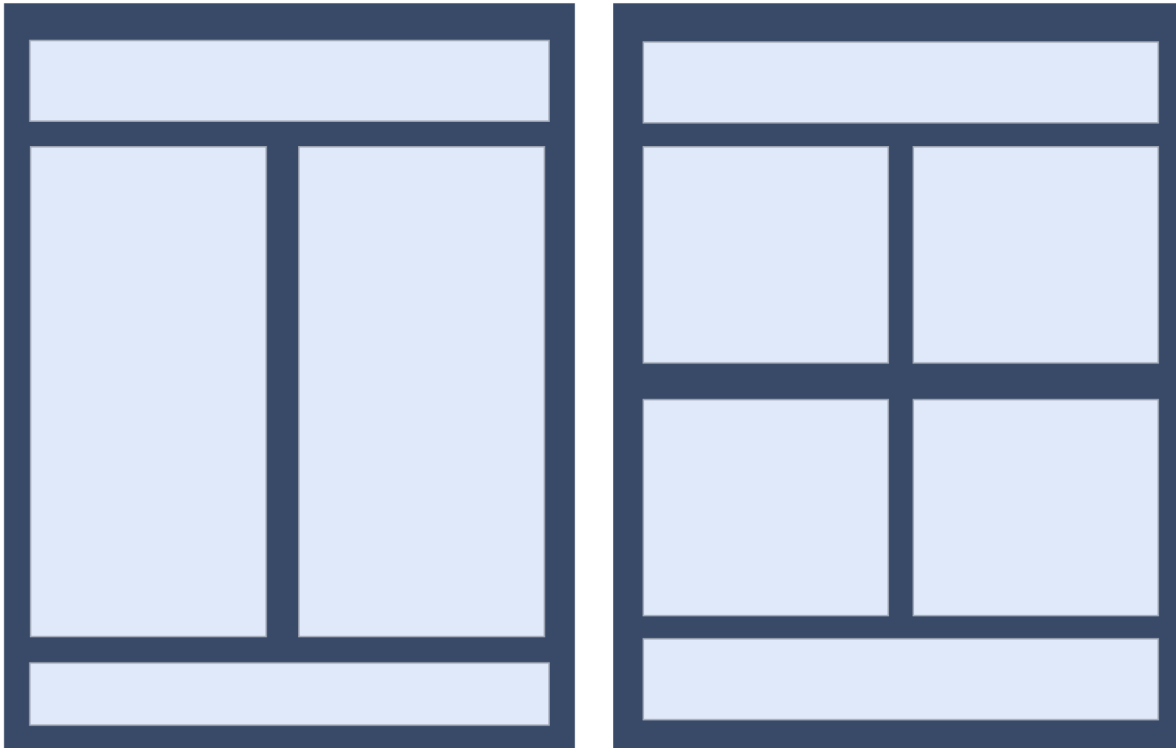
Small Text
Medium Text
Large Text

Small Text
Medium Text
Large Text

Small Text
Medium Text
Large Text

LAYOUT - BORDERS

- Do not be afraid of some empty spaces!



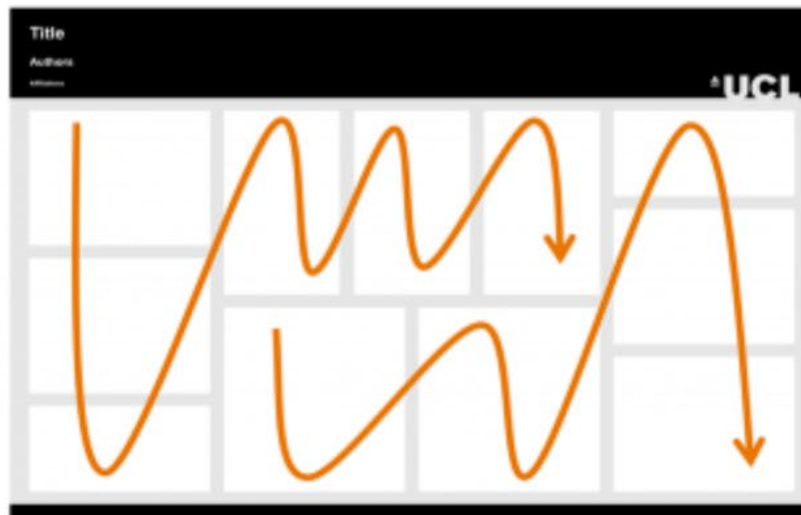
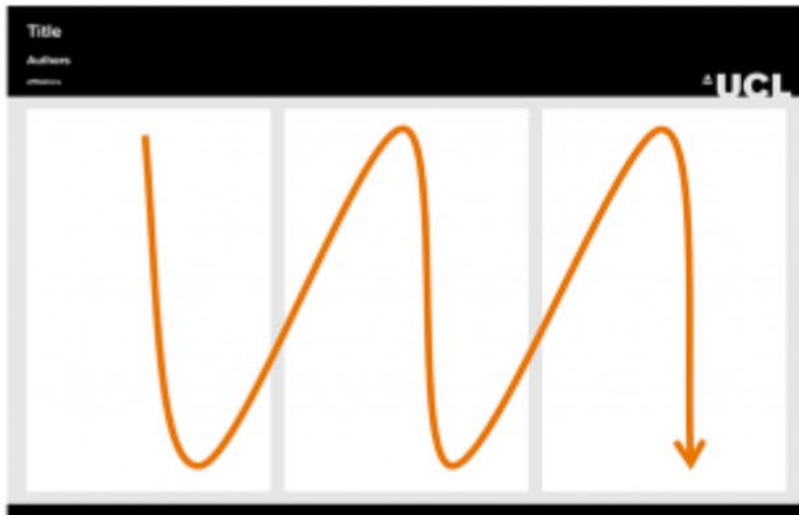
LAYOUT - BORDERS

- Do not be afraid of some empty spaces!



LAYOUT - FLOW

- Ensure there is a good flow to your design



LAYOUT - COMPONENTS

Your poster must include

- Title
- Author



LAYOUT - COMPONENTS

Identify your main message and divide the information into main sections.

- Introduction / purpose - what is your project about? Why is it important?
 - Methods / experimental design – what happened?
 - Results – a good place for graphics
 - Summary / Conclusions
 - Future directions – a brief description
-

LAYOUT - COMPONENTS

Think about how much text to use and where graphics can be used instead.

- Most posters contain too much text. Deciding what to leave out is one of the most difficult decisions. Keep everything relevant.
 - Think about the visual aesthetics of your poster but don't use images just to decorate.
 - Start by roughing out layout ideas on paper, it will save time in the long run.
-

LAYOUT - IMAGES

- Diagrams
 - Introduction (context)
 - Methods
 - Graphs and charts
 - Results
 - Check quality of images (high resolution) – may have to convert to a different type of file e.g., .jpeg, .png, .tif.
-

LAYOUT - AESTHETICS

- Be consistent, be bold, if in doubt use a template.
 - Use clear headings and subheadings in bold.
 - Columns assist reading order which is usually top to bottom and left to right.
 - Use images to break up text into smaller chunks, create a sense of balance and help the flow across the poster.
 - Using blank space can emphasise an image or text, avoids clutter and focuses on your message.
 - Leave a minimum 1.5 cm margin at the edge to help visibility and avoid the risk of content being trimmed off.
 - A grid structure will help to align elements which makes your poster easier to read.
 - The eye looks for edges so align photos, headings, text and axes.
-

LAYOUT - LEGIBILITY

- Aim for 300 – 600 words that are concise and to the point.
 - Use a maximum of two fonts
 - Minimise the use of italics, underlining and CAPITALS
 - Break up large areas of text.
 - Use bullet points.
 - Slightly increasing line spacing can help clarity.
 - Left justified text is easier to read than fully justified and avoids ugly gaps.
 - Set headings in bold using sentence case, avoid the use of shadows and embossing.
-

Your Title Should Fit On One Line, size 105

Name and Institution, size 63

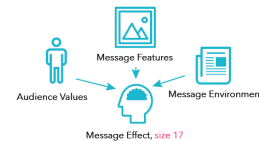
Contact Information



Introduction, size 68

Before designing your poster, consider your goal. Are you providing information, raising awareness of an issue, changing an opinion, or something else? What is the desired effect of your message? Use your goal to guide your decisions about what is the most important information and how to display it.

Your message's effect is influenced by your audience, the environment in which it is delivered, and its design features. For example, are you presenting to experts or a mixed audience? You will need to tailor your content to suit your particular audience's values and needs. Also consider the environment: Will your poster be one in ten or one in fifty? How much do you need to stand out? Will you stand by your poster to explain it in person, or will it stand alone?

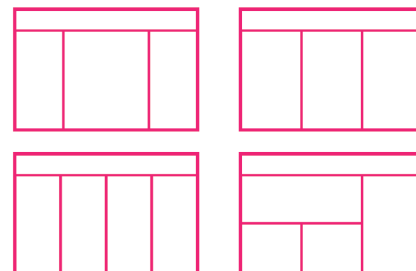


Layout

There are many different options for poster layout. Select one that allows the most important information to stand out.

Avoid the temptation to cram so much content into a space that the text has to be shrunk, or that you lose the opportunity for your viewer's eyes to relax with some negative/blank space. Consider using bullet points instead of paragraphs, or diagrams instead of wordy explanations.

Layout ideas:



Design Principles

Contrast, size 36

Use contrast in style to communicate an organized hierarchy of information and to guide your viewer's eye, size 32

- Consider using a contrasting font for your header.
- You can also use size, italics, bolding, and color coding to increase contrast between pieces of text.
- Avoid black type on darkly-colored backgrounds, or white type on light-colored backgrounds.

Repetition

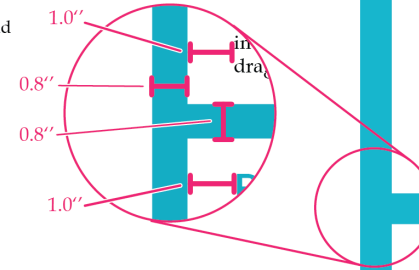
Repeat visual elements such as color, shapes, textures, borders, and fonts to unify the poster.

- Make sure all headers are the same font size.
- Make sure spacing between elements is consistent.

Alignment

Check for horizontal and vertical alignment.

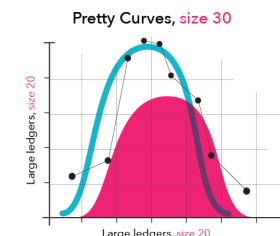
By zooming in 100% or more, you can more easily check margins as well as inter-marginal space. White padding around text makes it easier to read.



Proximity

Placing elements close together creates a relationship between them. Try to create visual units using close proximity. For example, the image above goes with 'Alignment' not 'Proximity' because it is slightly closer to the alignment text.

Enclosures also help create relationships. If you have a lot of information consider adding white boxes or outlines to delineate information. Proximity is especially important for graphs. Make sure you give graphs and charts enough space above and below them.



Software Options



Adobe InDesign

If you have time, learn it. InDesign is the best for layout, text, and image handling.



Adobe Illustrator

A good alternative to InDesign. Illustrator has great alignment tools and working with layers makes designing posters much easier.



PowerPoint / Google Slides / Keynote

You can do a lot with slideshow programs! But, some have limited alignment tools.

Images

Use images 300dpi or larger. If using another person's image, make sure to cite the source.

To proportionately scale an image, press and hold shift while dragging a corner.



Resources

DesignLab Resources Webpage

<https://designlab.wisc.edu/resources>

Designing Conference Posters: Blog post by Colin Purrington

<http://colinpurrington.com/posts/poster-design>

This is size 16. Its okay for citing your sources but don't use this size font for anything else!

Acknowledgments

If you need any help with your poster—from the first concept to final revisions—connect with the DesignLab!



IN PIECES:

FOOD IS MORE FILLING WHEN PRE-CUT INTO PIECES

Aner Tal & Brian Wansink

CORNELL UNIVERSITY

ABSTRACT

To investigate if cutting a food into pieces has an effect on satiety, students were given a bagel that was either (1) whole, (2) cut into 4 pieces which were kept together, or (3) cut into 4 pieces which were spread out. A general linear model revealed that overall satiety was the highest when food was cut into pieces, but only when the pieces were kept together.

METHODS

- 43 college students
- Asked to finish a mini bagel with cream cheese
- Assigned to 1 of 3 conditions:



- Measured hunger, fullness, and satiety levels on 9-point likert scales

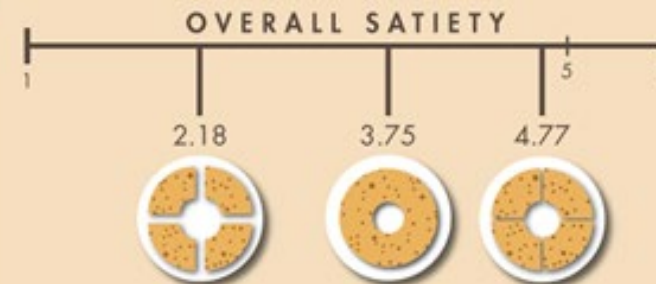
CONCLUSIONS

- Participants reported greater satiety when eating a food that was cut into several pieces, but **only when those pieces remained close together.**
- We suspect that cutting a food into several pieces increases satiety because it **increases the number of units** being eaten, hence increasing the psychological sense of satiety.
- However, if the food is **spread out**, its **volume might appear lower**, therefore countering the positive effects of eating pieces.

OBJECTIVES

- Is food more filling when people receive it pre-cut into several pieces?
- Is it the space the pieces fill on the plate or the number of pieces that increase satiety?

RESULTS



Cornell University
Food and Brand Lab

Funding provided by Food and Brand Lab

For more information,
contact Aner Tal at at425@cornell.edu





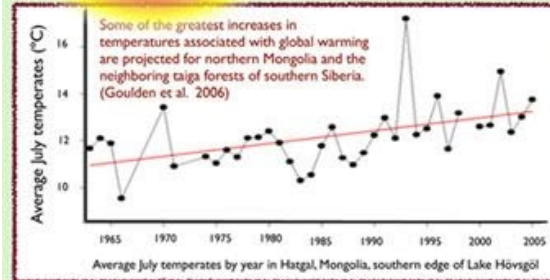
Soil Microbial Diversity

in a Mongolian Climate Change Experiment

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How will microbial communities be affected by, and in turn, affect climate change?

Introduction - 2009 Baseline:

Hypothesis: Microbial diversity highly correlated with moisture regime

- A: Between habitats
 - Arid steppe - lowest diversity
 - Moist forest - intermediate diversity
 - Wet riparian - highest diversity
- B: Within steppe habitat
 - more arid upper slope - lowest diversity
 - less arid lower slope - higher diversity

Results:

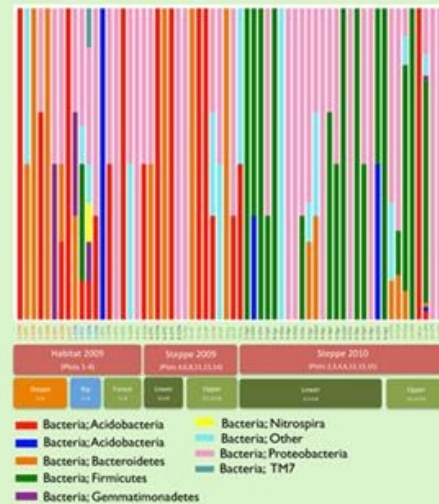
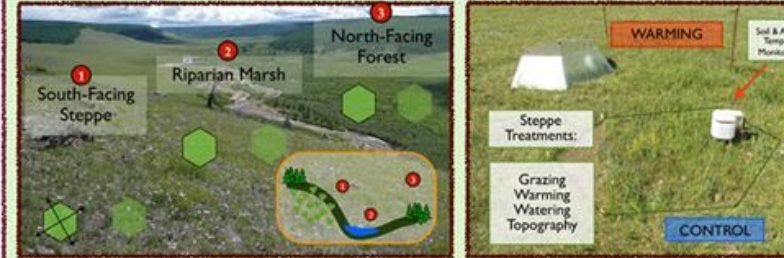


Figure 1. Taxonomic composition at the phyla level (in percentage) of bacterial communities in soil samples from various experimental treatments.

Field Experiments:

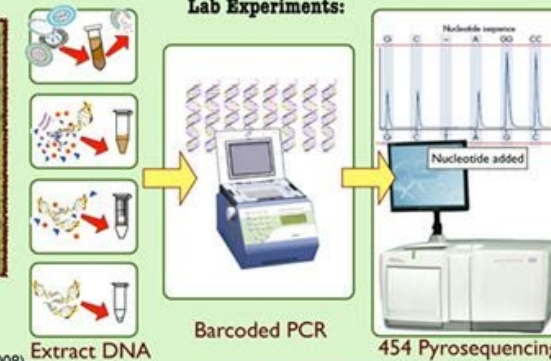


Experimental Design:

- Valley 1:
 - Warming across 3 habitats (replicated 4x)
- Valley 2:
 - Steppe only
 - Upper Slope: Warming & Watering (7x)
 - Lower Slope: Warming & Grazing (8x)
- Soil Cores
 - 2cm x 10cm
 - Stored in MoBio LifeGuard (Carlsbad, CA, USA)

Molecular Work:

- PCR:
 - 16S barcoded primers (McKenna et al. 2008)
- Pyrosequencing:
 - Roche 454 Genome Sequencer Junior System
 - Stored in MoBio LifeGuard (Carlsbad, CA, USA)
- Bioinformatics software:
 - QIIME (Caporaso et al. 2010)
 - Mothur (Schloss et al. 2009)



Discussion:

- Taxonomic composition across habitats and years (Fig. 1):**
 - The community composition varied significantly between years within the steppe habitat ($F=3.15, p<0.01$)
 - Neither habitat nor topography had an effect on composition at the phyla level
 - Studies over a longer time period and finer taxonomic resolution needed
- Taxonomic composition across habitats (Fig. 2 a,c):**
 - Habitat type significantly affected bacterial phyla ($F=7.13, df=2, 20, p<0.01$).
 - The forest had significantly lower diversity than either the riparian or steppe habitats.
- Taxonomic composition within steppe habitat (Fig. 2b,d):**
 - There were significantly more species on the upper slope than on the lower slope in the steppe ($F=9.35, df=1, 14, p<0.01$)
- Hypotheses not supported by data!**
 - Moisture not the major variable affecting microbial diversity at phyla level

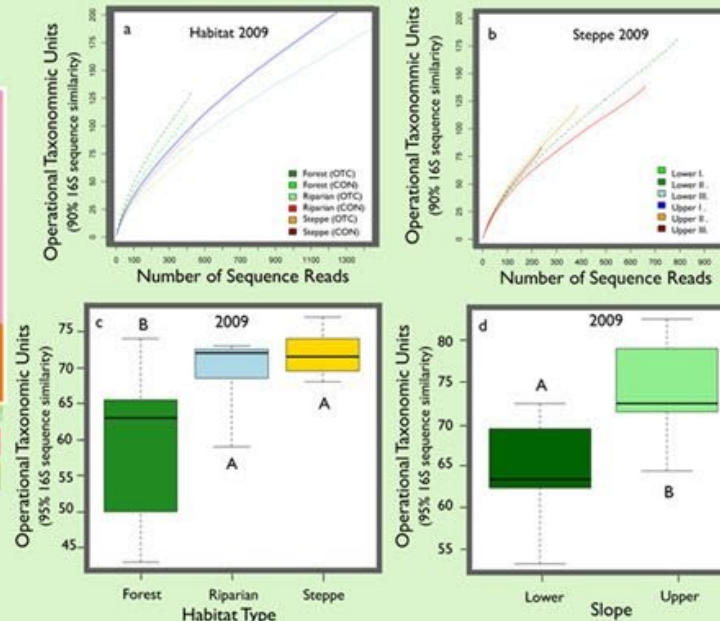


Figure 2a-d. Rarefaction curves between a) habitats within b) steppe; box plots of phyla represented between c) habitats within d) steppe along topography gradient (100m elevation difference). OTC: Open-Topped Chamber (for warming) CON: control



Future Directions:

- Compare samples from 2009-2013
- Denoise sequence reads
- Compare at species level
- RNA expression studies
- Enzymes assays

Acknowledgements:

Casper, Petraitis, Bushman, Adams & Gallagher Labs
NSF PIRE Mongolia Project
NSF EAPSI Program

References: Caporaso, J.G., et al. 2010: *Nature Methods*; Goulden, C.E., et al. (Eds.), 2006: *The Geology, Biodiversity and Ecology of Lake Hövsgöl (Mongolia)*. IPCC., Climate Change 2007: *Synthesis Report*; McKenna, P., et al., 2008: *PLoS Pathogens*; Schloss, P.D., et al., 2009: *Appl Environ Microbiol*.