26th World Mining Congress
BRISBANE AUSTRALIA
26–29 JUNE 2023

Research Paper Poster
Guidelines

Thank you again for submitting your research paper. We are now getting very close to the start of the Congress!

We hope that you will take some time to look through the material we have provided to help you design your research paper poster.

The posters are an important opportunity for you to showcase the high quality of your work – a well designed poster will help raise your profile!

Dr Hua Guo

Chair
26th World Mining
Congress

Part one

Problem

Standard Poster

Solution

Better Poster

Problem

Five Seconds

You have approximately **five seconds** to **attract the attention** of someone walking past your poster. **Good luck.... !**

Photo Credit: Gary Wagner

Standard Poster

'Wall of Text'

The standard approach is to set out an abbreviation of your research paper using the key chapters of your paper.

This is **boring**.

If you want to **stand out**, you need to think of your poster a bit like an **advertisement** or **billboard**.

Poster content:

Assessing the dynamics of attitudinal scales in ICE group systems.
Micah Mcneil, Rupert Meyer, Patricia Fields, Simran Hunt, Amna Craig, Sanna Ramos, Elize Metcalfe, Giuseppe Hale, Dharmadhrt Ramila, Lang Xieren

Abstract
Our research group is primarily interested in understanding team dynamics in isolated and confined extreme (ICE) environments. In this research stream, we have collected data from seven U.S.-based teams deployed to the ice in Antarctica. These teams live on the ice for up to two months doing scientific research and working as a team in harsh conditions. The conditions faced by the crew on missions to Mars due to the extreme environments with isolated tasks to accomplish.

Methods
These daily diaries consisted of both open- and closed-ended questions regarding team cohesion, conflict, and performance, among others. With teams consisting of 4-8 members spending up to 2 months on the ice, we have been able to collect 1472 diary entries. Two main sets of analyses have been applied to this data thus far. First, we have used Linguistic Inquiry and Word Count (LIWC) software to code open-ended diary responses for frequency of word use in over 80 language categories. We then explored how the LIWC data related to the self-report diary measures of team functioning.

Conclusions
Based on our analysis of the LIWC categories and their ability to predict our self-report measures, we believe this form of analysis shows promise in monitoring the functioning of ICE teams. We found that many LIWC categories predict how participants respond to standard close-ended measures of team functioning, some of which have been highlighted here. In addition, some LIWC categories provide incremental prediction across days for important team variables. Such as negative emotions predicting second-day task conflict above that provided by our other measures. And negative emotion

Discussion
We are continuing to collect data from these Antarctic teams every winter to expand our database. We are also working to expand these exploratory results to other research analogs in a more confirmatory manner. It is our hope that these efforts will lead us toward the development of more sophisticated methods of team monitoring in ICE environments, and a more complete understanding of ICE-team functioning.

Title
This is factually correct, but does not grab attention. It would be better if the title conveyed something about the impact of the findings – what's next? How will this benefit society?.

Information Hierarchy
There is no sense of what is important – all the information is presented with the same emphasis, so your eye is not drawn to anything in particular.

Visually Boring
The only 'graphic' elements are the Results and Conclusion tables and even these lack visual impact. Pictures could be used to help tell the story that lies behind this research

Solution
Advertising Approach

Advertisers know that in order to get their message across it needs to convey a **single idea** that will **capture interest fast**.

In this example, the heading and the balloon are inter-related: one strengthens the other. The overall idea is more than the sum of its parts.

As a scientist you can not expect to become a copywriter overnight, but you can **adopt a few key principles**…

Better Poster

Grab Attention!

A better poster approach grabs your attention by making use of the **single most important thing** that they want you to know.

You do this by using a **bold statement** or **core graphic** (preferably a combination of the two!).

So — what's the **single most important thing** in your research paper?

Title:
Subtitle

PRESENTER:
Leeroy Jenkins

BACKGROUND: Who cares? Explain why your study matters in the fastest, most brutal way possible (feel free to add graphics!).

METHODS
1. Collected [what] from [population].
2. Tested it with X process.
3. Illustrate your methods if you can.
4. Try a flowchart!

RESULTS
• Graph/table with **essential results only.**
• All the other correlations in the ammo bar.

Main finding goes here, translated into **plain English**. **Emphasize** the important words.

Visualize your findings with an image, graphic, or a key figure.

Take a picture to download the full paper

AMMO BAR

Delete this and replace it with your...
• Extra Graphs
• Extra Correlation tables
• Extra Figures
• Extra nuance that you're worried about leaving out.
• **Keep it messy!** This section is just for you.

Leeroy Jenkins, author2, author3, author4, author5, author6, author7, author42

Watch the 'Better Poster' Video

Watch this video which explains why a highly focused, vibrant and colourful poster attracts more attention compared with the standard approach.
Click here to watch the video →
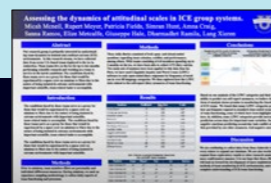
STANDARD POSTER   BETTER POSTER

Part Two

The Design Process – Seven Steps

Choose 3–5 Things

Be selective – really selective!

Begin your poster design with a **short** list of the **3–5** most **important things** you want people to know about your paper.

Next, decide on what the **single** most important thing is in your paper – what's the **Key Finding**? You need to focus on this. How are you going to make that thing **stand out**?

Key Finding

Attract Attention

Work your single most important thing into a **strong statement** – this will be the way you attract attention to your poster and is the **catalyst for them asking questions**.

For example – what's the **impact** of your research going to be **on society**? Does your paper contain **ground breaking findings** that require **further research**?
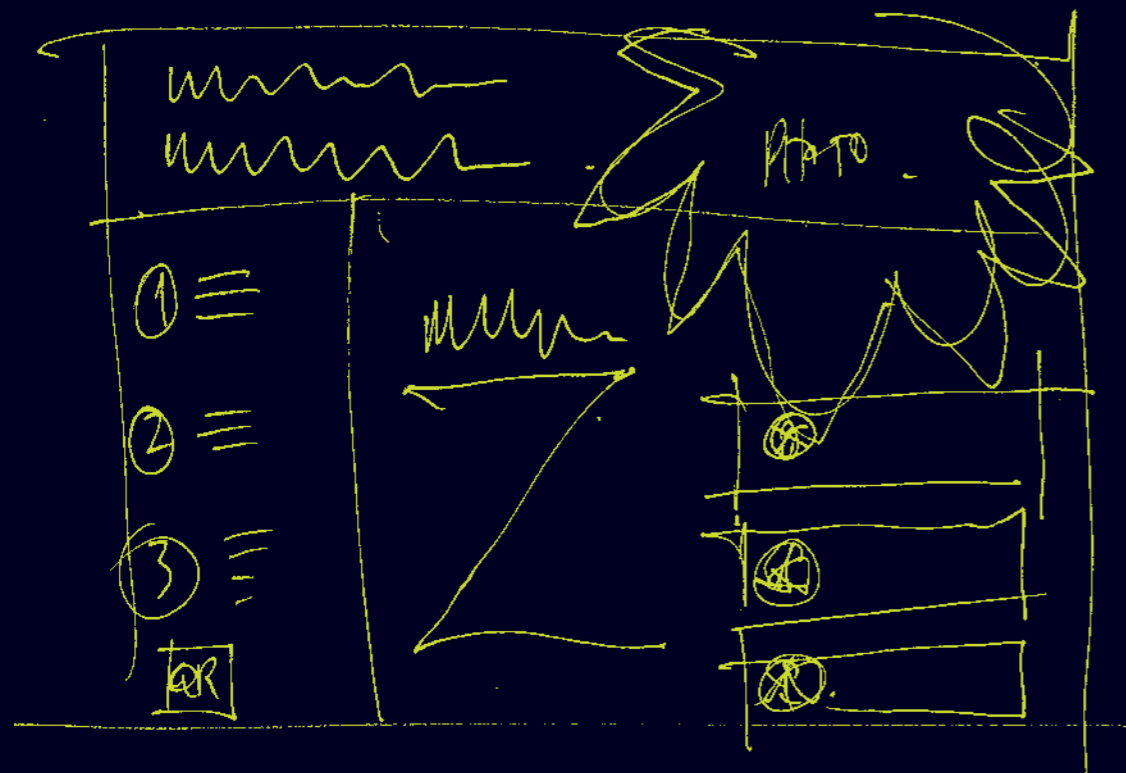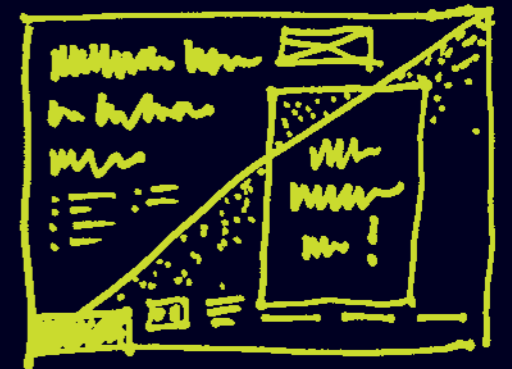
Remember that not everyone passing your poster will understand the **terminology** you use day to day. So **avoid jargon** and use **plain English**.

For example, the paper title might be "**Negative factors inhibits attention and performance**" but your poster might read "**Bad moods distract people at work and lower their performance**".
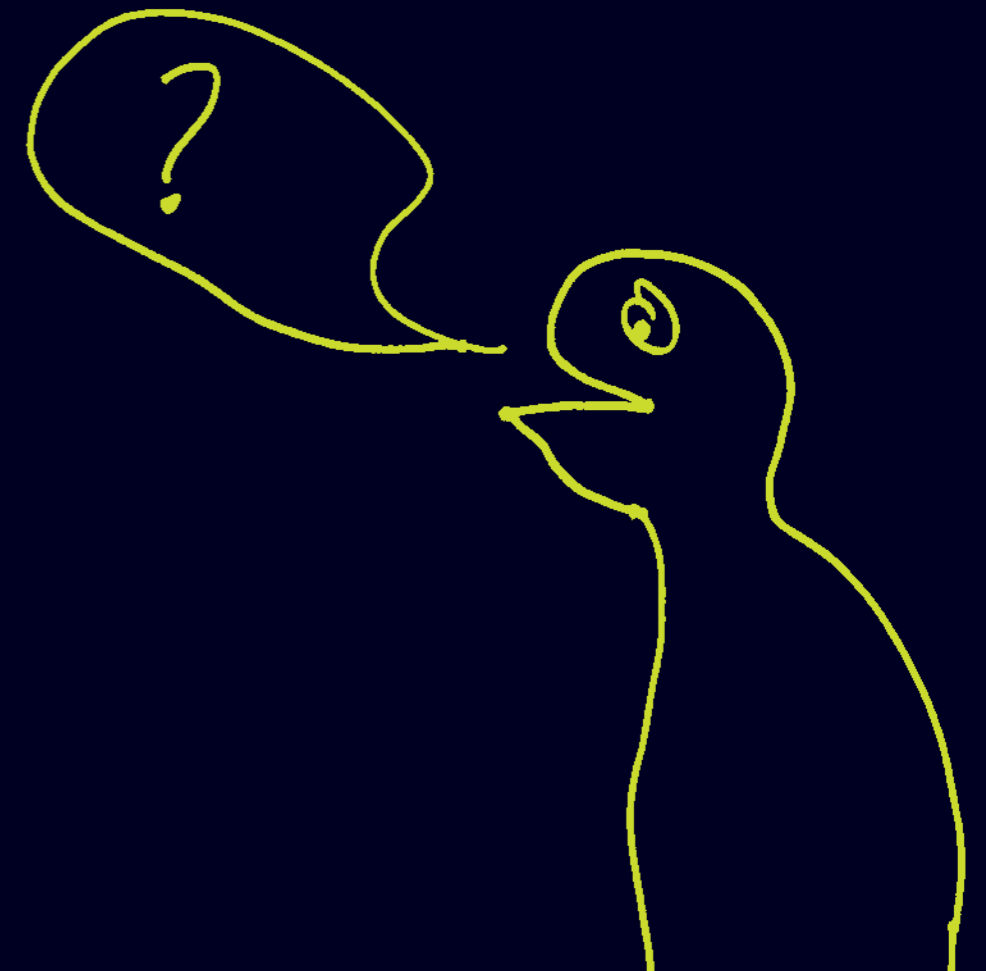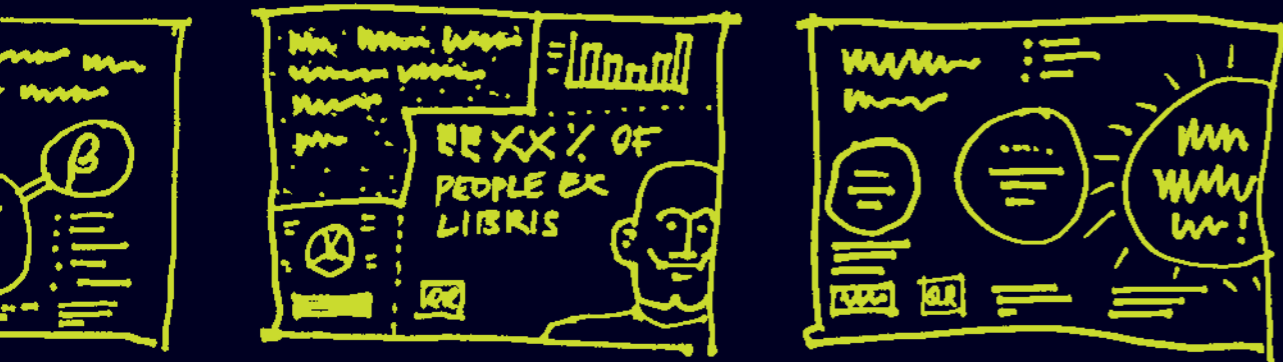
Content Plan

Think like a designer

You are busy and need to get this done **fast**. The quickest way to plan your poster is to **sketch a few options**.

This will help you **visualise the layout** of what you are creating without investing lots of time in the details. Remember that there is a limited amount of **content** that you can fit in.

Structure

Segment your Layout

Key Finding Statement + image – 10 words or less
This contains the single most important idea you want to convey.

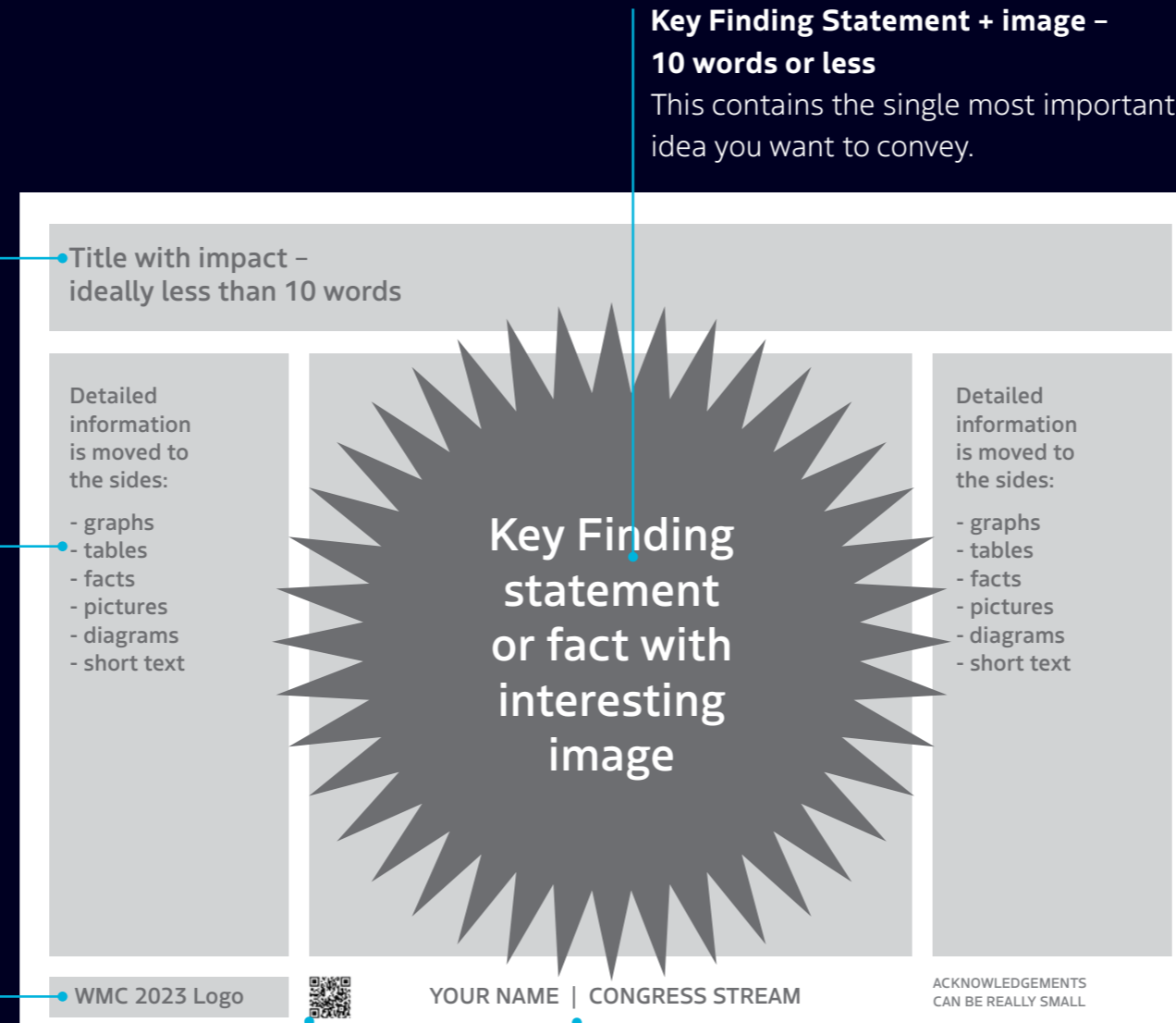## Create a **hierarchy of information** – put a structure in place

Title of Paper
This is important, but it's not the single most important thing you want people to know, so don't let the title dominate the design.

Progressively build your layout
Graphic designers often begin building their design by putting a structure or grid in place.

They work on the page at the size it needs to be when printed. The 'fixed' elements that they are sure about are put in place first... so for you, this would be: the attention grabbing statement + image; the title of you paper; QR Code; your name; and the acknowledgments.

Detailed Information
This can be moved to the sides of the poster. The size of the text can be smaller – someone will only be reading this if you've grabbed their attention already through your statement.
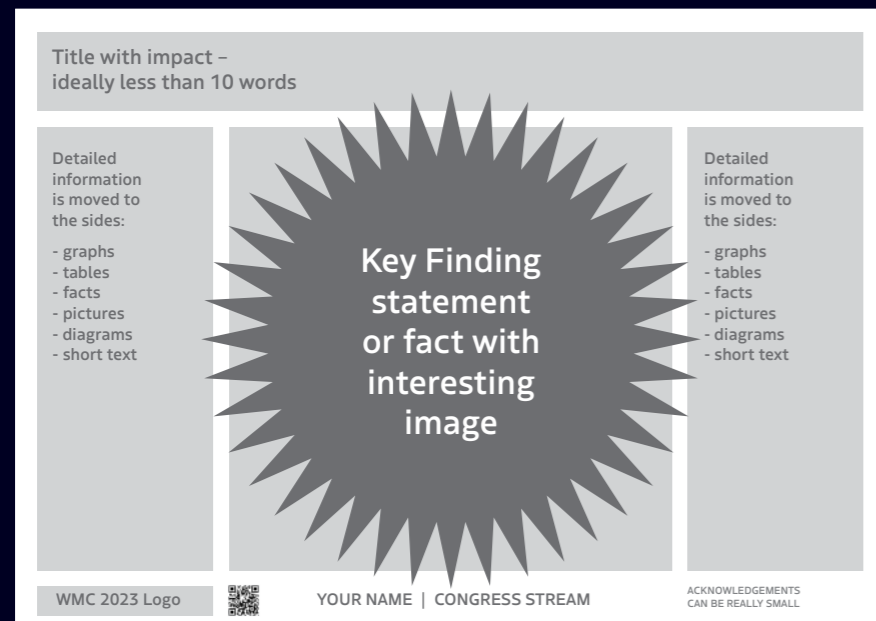
Having put the above elements in place you'll see how much space is left for the detailed information.

Designers often work initially in black & white / greys , like the example on the left – this is because it's the overall structure which is most important to get right first before considering the details and applying graphics and colours.

WMC 2023 Logo
This element needs to be kept in this position. Please don't resize it, move it or obscure it!

QR Code
Create a QR code that links to a digital copy of your name and contact details and / or your full paper online.

Your Name & Congress Stream
Keep these at the base of the poster & fairly small

Title with impact – ideally less than 10 words

Detailed information is moved to the sides:
- graphs
- tables
- facts
- pictures
- diagrams
- short text

Key Finding statement or fact with interesting image

Detailed information is moved to the sides:
- graphs
- tables
- facts
- pictures
- diagrams
- short text

WMC 2023 Logo   YOUR NAME | CONGRESS STREAM   ACKNOWLEDGEMENTS CAN BE REALLY SMALL

Layout

Segment your Layout

Create a **hierarchy of information** – put a structure in place

Symmetrical layouts give the impression of stability
A symmetrical poster like the one above will probably be the most straight forward for you to implement, however don't be constrained to the templates we have provided...

Asymmetrical layouts create a sense of dynamism
In the above example the columns become increasingly wider which emphasises the attention grabbing statement.
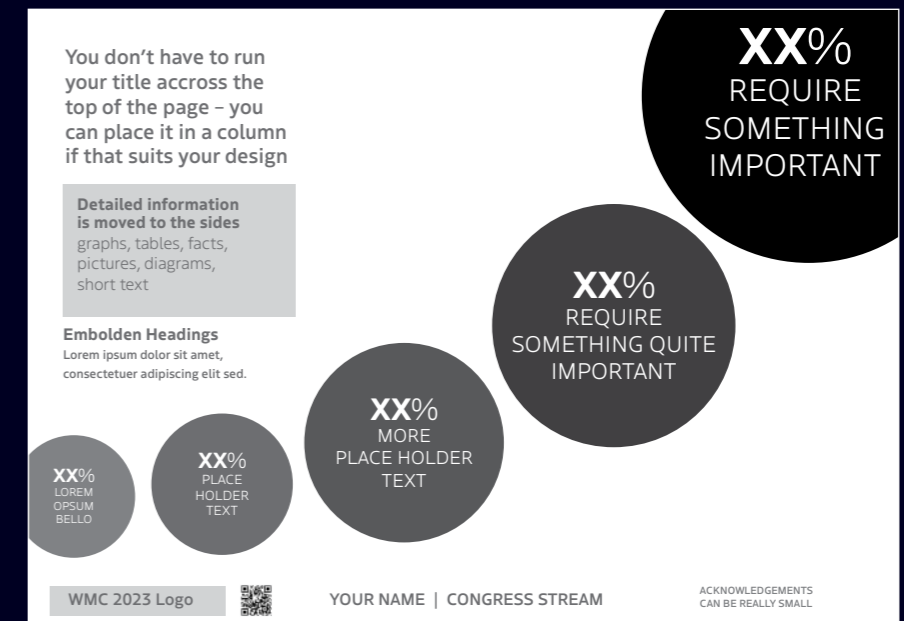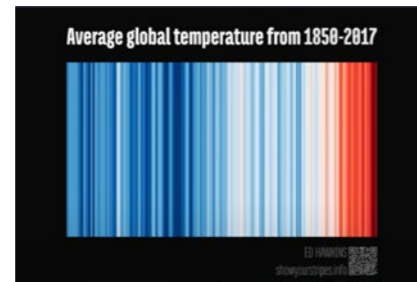
Use negative space!
You don't have to fill the entire surface of your poster. In the above example the negative space (the white background) has been purposefully left clear. This emphasises the series of figures, drawing the viewers eye towards the key finding.
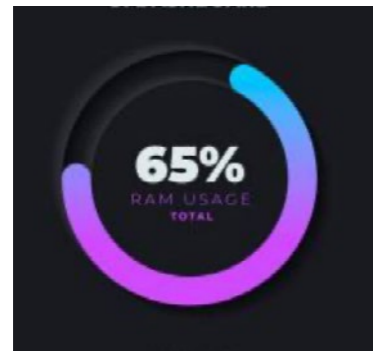
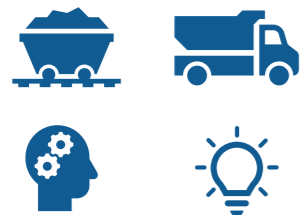Are there steps that your research process has followed?

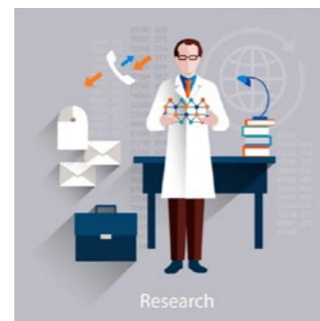This graph immediately illustrates global heating in a succinct way

Key statistics and data can be turned into infographics

Do you have CAD drawings that formed part of your research?

Icons help draw the eye: www.nounproject.com

www.vectorstock.com has very cheap illustrations

Choose Infographics

Eye candy with a message

Pictures say a **thousand words**. People are attracted to images because the brain processes the information faster, so **use images**!

What **image** or **statement** are you going to use that will **attract attention** in less than **three seconds**?

Legibility

Your KILLER arresting statement that will attract them to you!

This text should be legible from a distance of 8 meters, or 26 feet

Test your text

- Print a bit of text.
- Stick it on a wall.
- Stand back 2+ meters (2 meters = 6.5 feet)
- Can you read it?

25mm
1 inch

x-height

This example – Roboto Bold
The legibility of type is usually described by it's 'x-height', IE the height of a lowercase letter 'x'.

This is because point sizes for type vary slightly from one font to another – hence measurements of legibility are given as measurements of 'x-heights'.

In the above example the x-height is one inch delivering legibility up to eight meters, or 26 feet.

Type Sizes
Check for legibility

x-height

x-height	Max Viewing Distance	
6mm	**2**m	**6.5** feet
12mm	**4**m	**13** feet
20mm	**6**m	**19.7** feet
25mm	**8**m	**26** feet
40mm	**12**m	**39** feet

The above is based on a person viewing the text when static,
or walking very slowly + viewing the text straight on & not at an angle.
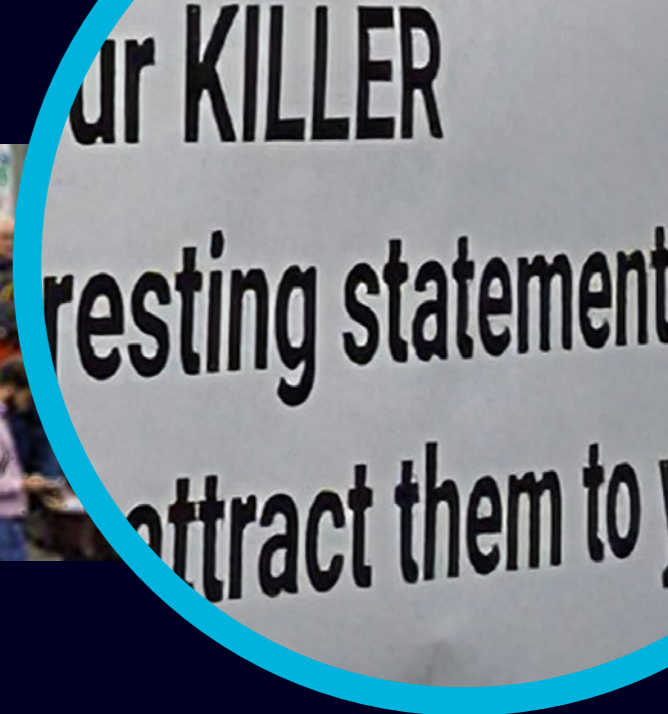
Bear in mind that text legibility can be affected by a number of things – e.g. the font that you use, the contrast of the type against its background.

In legibility studies it has been consistently found that positive type against a light background is more legible than white type on a black background.

Remember the problem!
Don't draw too much comfort from our nice neat legibility table on the left. Remember that your audience will be encountering your poster in that crowded display space. They are walking, their brain is full and they will see your poster from an angle!

Type Principles

Select appropriate fonts

The font(s) you choose affect the feeling created. Some fonts are more curvaceous and feel more friendly – others have fewer curves in their letterform and will feel more serious.

Serif

Legible – established – timeless
Most literature books are set in serif type because it's extremely legible when there is a large amount of text to read. You probably won't use serif text in your posters for body text – however, don't rule it out for a major heading, or a large statement.

Serif

Modern – clean – not too friendly
Most of the type you have on your poster will probably be sans serif type. It's clean and works well for short paragraphs of text.

Google Fonts
Google fonts are free & you can download them to your computer here....
When you complete your poster, save it as a PDF – this will embed non standard fonts.

Slab Serif

Robust – steady
This text is not so legible at smaller sizes. You might use a slab serif font for subheadings, or for a major statement.

Don't use too many fonts! A basic typographic principle is that you should only use the number of styles that you absolutely need

Colour

Colour clash
some colours create a colour clash & you are probably best to avoid such combinations unless they help communicate a point
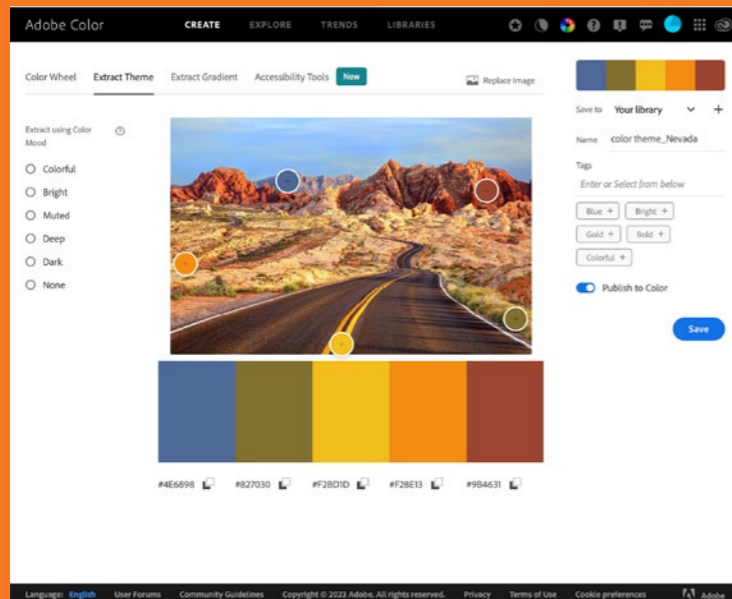
Adobe Color
One method of creating a colour palette is to choose colours from a photograph.

Adobe Color is a free on-line resource. One can upload a photograph and a palette range will be automatically chosen for you. One can move the selections in order to shift the colours.

You can also see colour combinations that are trending. You can also put in a key word & a colour palette will be selected for you.

Choose a workable palette

Ignore all the colours you've seen in this presentation so far. They are purposefully WMC 2023 colours because this is a WMC 2023 document.

You should **choose colours** that are **relevant to your research paper**. If your paper has a connection to the environment, then you may decide to be influenced by the landscape in which the study took place.

You may not have a great deal of time to develop a colour palette & if this is the case, then its best to **keep the palette fairly small – choose three or four colours and stick to them.**

Part Three

Poster Size

File Format

Poster Size

A0 Landscape

**Width: 1189mm
(46.8 inches)**

A0

**Height 841mm
(33.1 inches)**

The poster size must be 'A0' landscape and we have shown the dimensions here.

The PowerPoint Presentation document that we have provided is set up to these dimensions.

File Format

PDF

Once you have completed your poster, you need to save it as a PDF.

If you have used lots of pixel based images, then your PDF file size may be quite large (20mb +). If this is the case we recommend sending the document with a. online file sharing provider like WeTransfer.