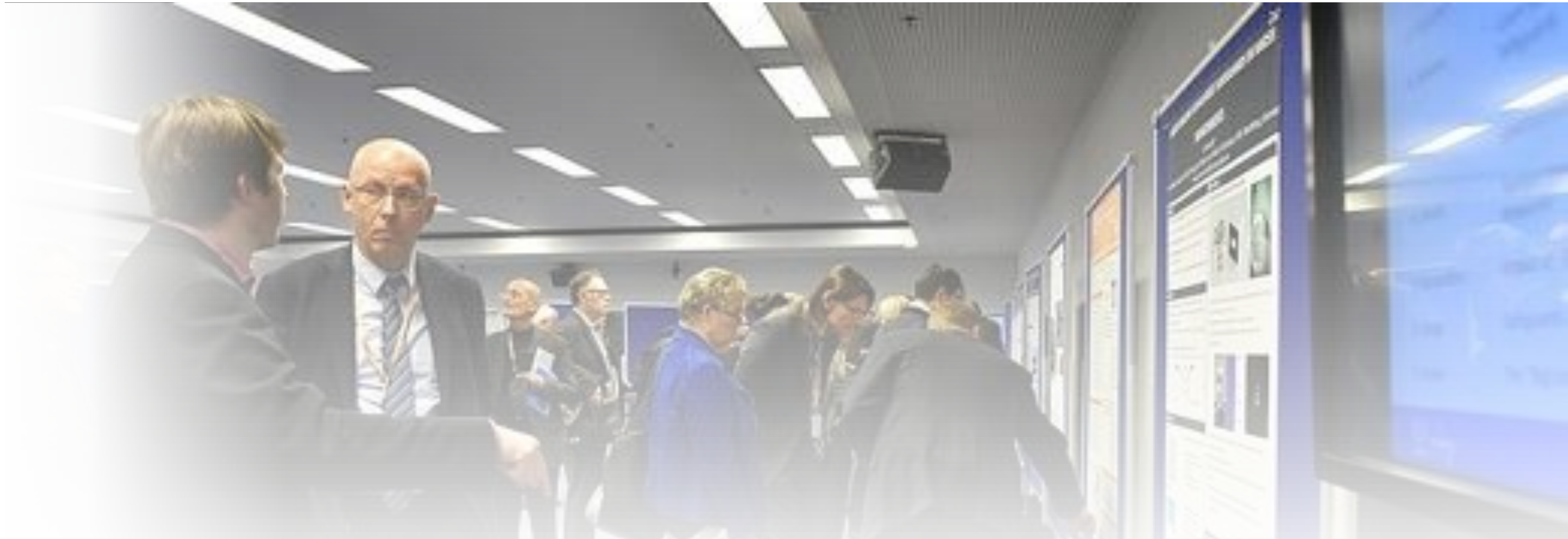
SUMR Meeting 7
WMI, Wednesday 20th August 2025, 15:00



How to prepare and present maths posters

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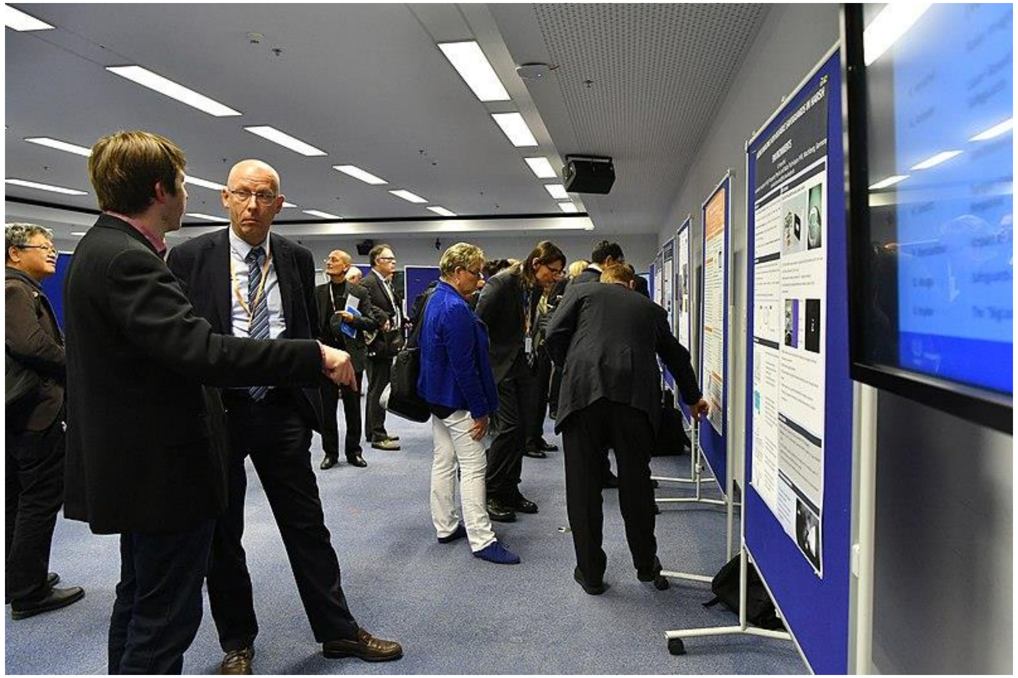
UNIVERSITY OF WARWICK

Why make a maths poster?

Short answer: to advertise what you've done and explain it clearly



Normally presented in a poster session at a conference:

- break in the talks schedule and everyone is in one place

- you usually stay with your poster whilst people look at sometimes hundreds of examples

- poster serves as both an advert to attract *and* a visual aid if you're asked questions or need to go into more detail

eye-catching ▪ meaningful ▪ clear ▪ detailed

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American Physical Society (APS) DFD-Interact session (2024)

Many conferences and meetings now feature flash-talk sessions (e.g. *DFD-Interact* at APS DFD)

- your poster is your one slide at the start of the session, used to introduce you to the room

- people then come to look at it for more details and an in-depth discussion

again, this needs to be…

eye-catching ▪ meaningful ▪ clear ▪ detailed

Who's your audience?

Conference posters: can afford to be more technical and detail-heavy but have a think about how general the audience is.

Policymakers: need to sell the importance of your research but details aren't going to be all that important.

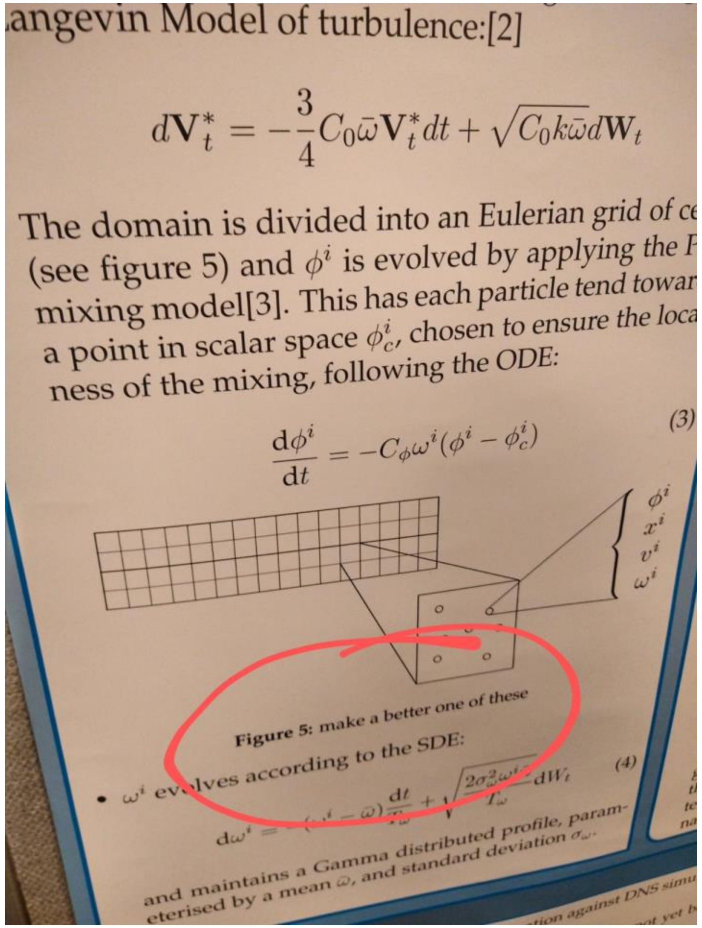
Student conferences: something of a mix between the two!

Mixed audiences: tell the story of *how* you got to where you did, not *what*

Who is the audience that needs to see your research?

A myth

"being selected to give a poster at a conference is much worse than giving a talk"



play this stereotype to your advantage…

people in a poster session are sometimes crying out to find something good!

a good poster can go a really long way to engaging new people, sharing your work, and really delving into the details

A myth

“being selected to give a poster at a conference is much worse than giving a talk”

- you see potentially hundreds of people instead of sometimes just a few
  I’ve given talks to <5 people in a particularly boring session but the whole conference is there for a poster (and there’s often a promise of free food and drink…)

- you can afford to tailor what you say to the person you’re talking to
  this can be a great way to find people who you can build on your research with

- you can go into more detail

- you get a two-way conversation and can easily pick up new ideas

- preparing a poster is **the best** way to prepare a paper

What makes a good poster?

The advert

- Needs to stand out from a field of potentially hundreds
- Important to communicate:
  - what you’ve done
  - how you’ve done it
  - that the results are good

The project summary

- Give detail to a level short of that in the final paper, but some more specifics can be shown than in a talk
- Walks through the key points of *how* you’ve done your work
- Familiar structure: intro, methods, results, conclusions

The slide deck

- Graphical pointers and equations that illustrate your prepared spiel
- More freedom to illustrate things with diagrams than in a paper
- Qualitative overview of results, but maybe not as technical

What makes a bad poster?

The advert

- Very easy to oversell the novelty or importance of work
- Can look a bit vapid and lacking substance
- Don't just want to point people to a paper; they'll never read it
- Need to be able to précis the key details

The project summary

- Boring
- Can often result in really dense work
- Anyone who does want to build on your research will read the paper anyway

The slide deck

- Useless if you're not there
- Needs some context to join the results together
- Easy to get thrown if your conversation ends up going in a different direction to plan

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Summarise your current research problem and what you’ve done this summer in 10 seconds (approx. 30 words)

- catchy title that’s specific but not too technical
- easy to find summary of your results, laid out so that it’s the focal point
- make it straightforward to find more information (QR code to paper?)

What’s the title of your poster?

The project summary

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- Walks through the key points of how you've done your work
- Familiar structure: intro, methods, results, conclusions

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Break down what you've worked on this summer into at most 5 headings

- helpful to compartmentalise your research into subheadings
- don't be afraid of *some* equations and technical details
- a clear narrative flow is really important

Now summarise your work in < 5 bullet points

The slide deck

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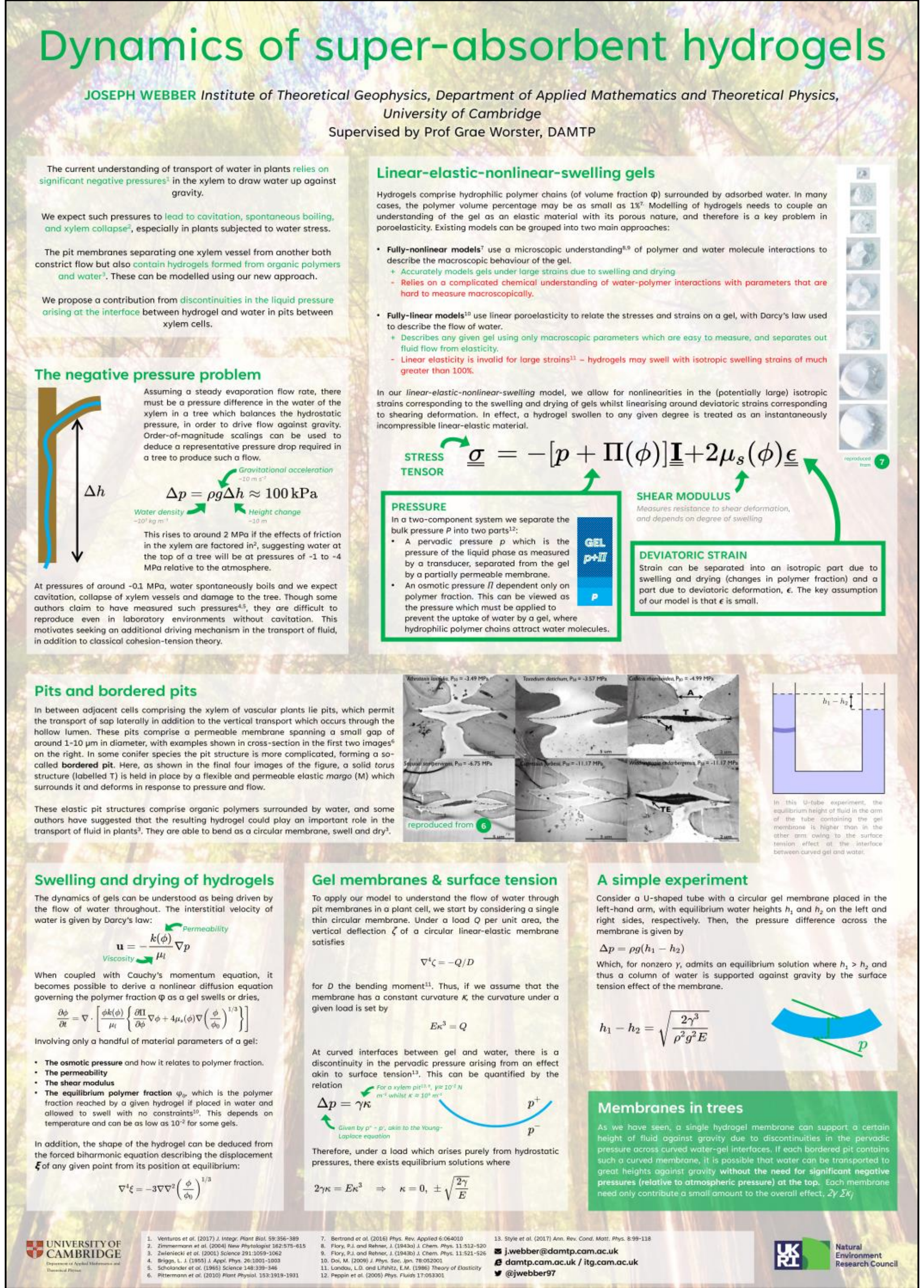
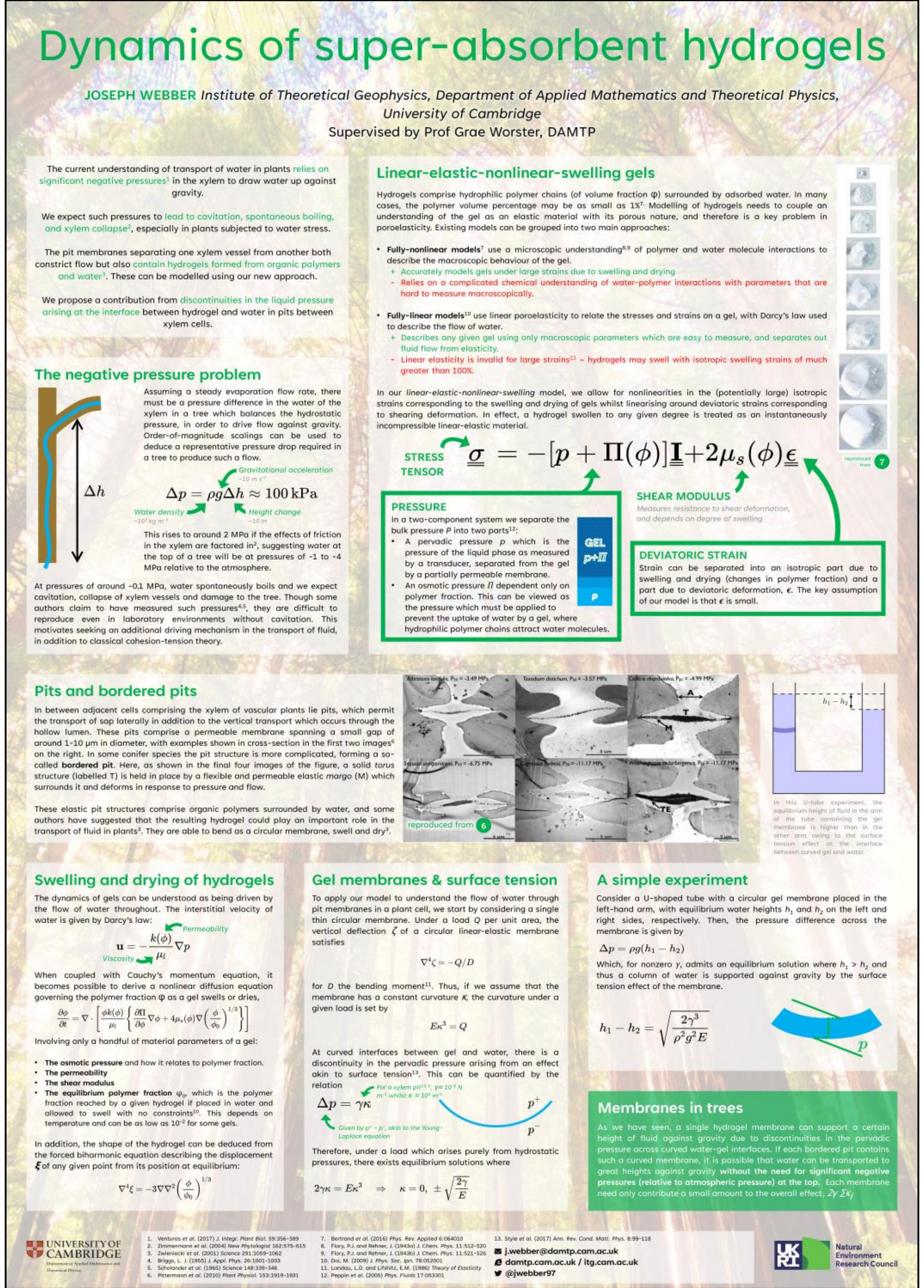
Sketch, or decide on, a graphical representation for each of the bullet points

- pictures are really important – what do you need to properly explain your work?
- write out briefly what you're going to say if someone comes up to you to ask about your poster
- oft-quoted rule of thumb: ~40% of a poster should be images (do we agree?)

anyone prone to migraines should look away now…



https://jwebber.github.io/assets/files/cada_poster_posters_talk.pdf



- Clear colour, eye-catching(?) background
- List of further information/references

- Judicious use of equations
- Summary points on top left-hand corner

- Pictures used to illustrate points

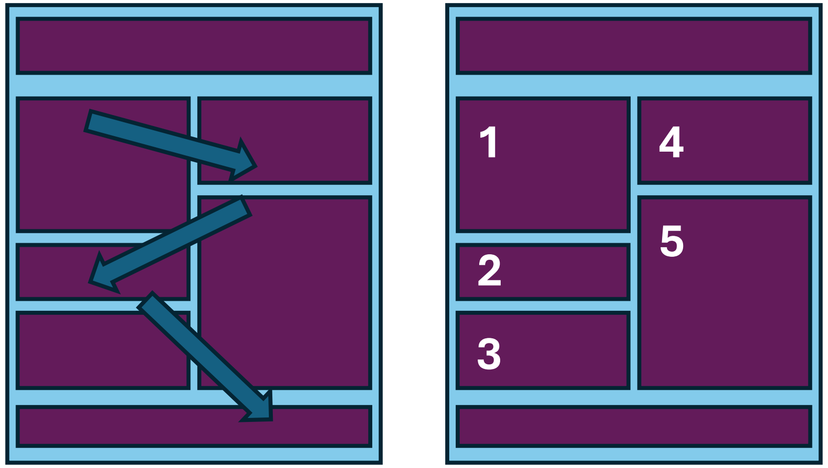
- Generic, vague, title

- No clear story
- Too much content
- Text style is too much like prose from a paper

- Where would you start talking about this?

- Contrast is low between elements
- Text is too small

Some notes on layout



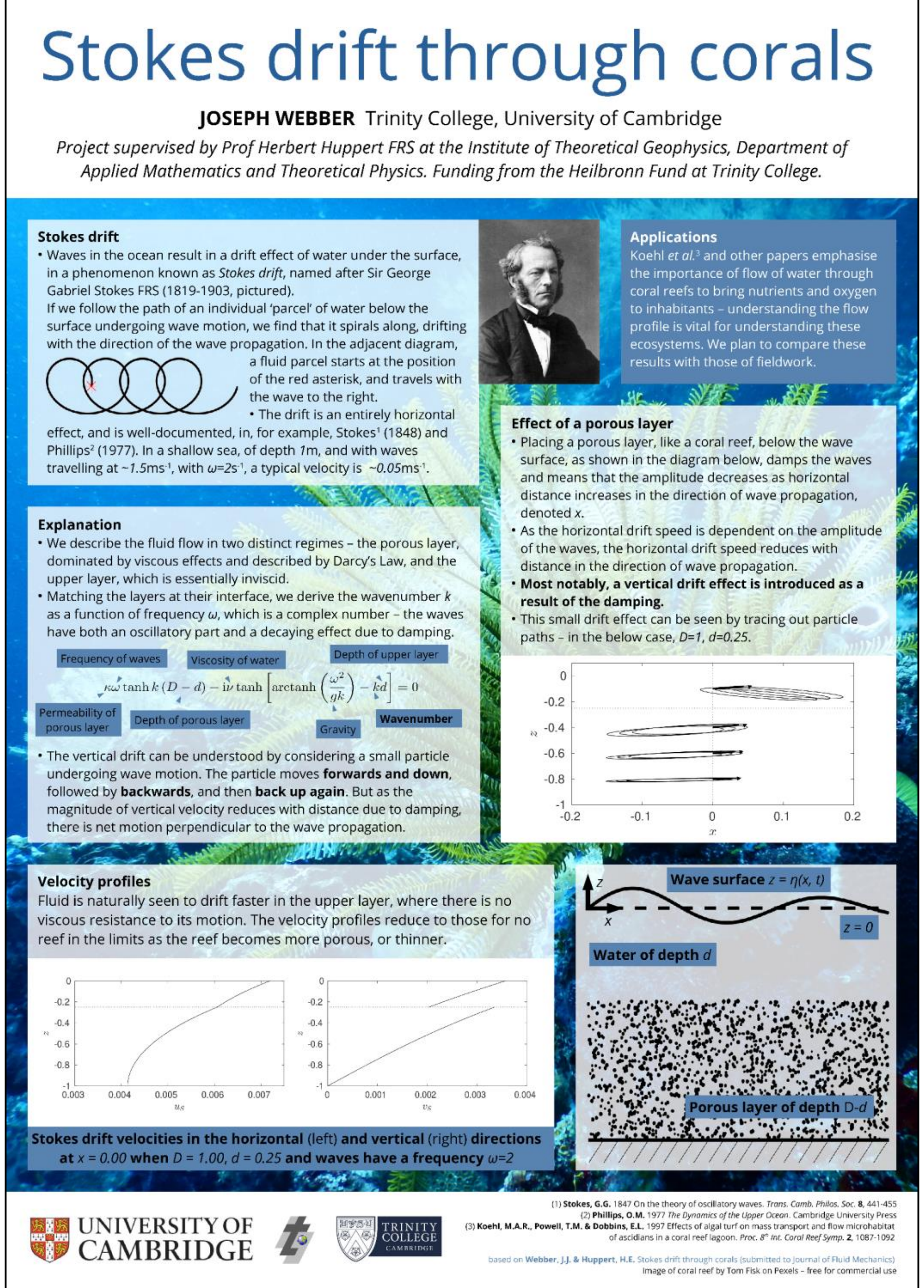
- it makes sense to break a poster up into chunks
- think about 'Z patterns' or other, logical, routes
- take a few moments to think about how you're going to structure those chunks; you want a story to be told
- landscape or portrait? Often chosen by the session.

As a rule of thumb, the title and key subject matter should be readable from 3m away. Everything should be visible from 1.5m away.

14pt : minimum size to be clear at 1.5m

25pt : minimum size to be clear at 3m

titles are usually >72pt



https://jwebber.github.io/assets/files/stem_for_britain_poster_talk.pdf

Presenting your poster

- stand to the side of the poster so people can see it

- get the balance right between connecting with people browsing posters and not overwhelming
  your presence there is, often, a reason why someone actually *won't* look deeply

- make sure you know what you're going to say before the session starts

- always finish by making it clear where they can get more information

- <u>number 1 rule</u>: make sure you're enthusiastic when talking about the poster

Getting started

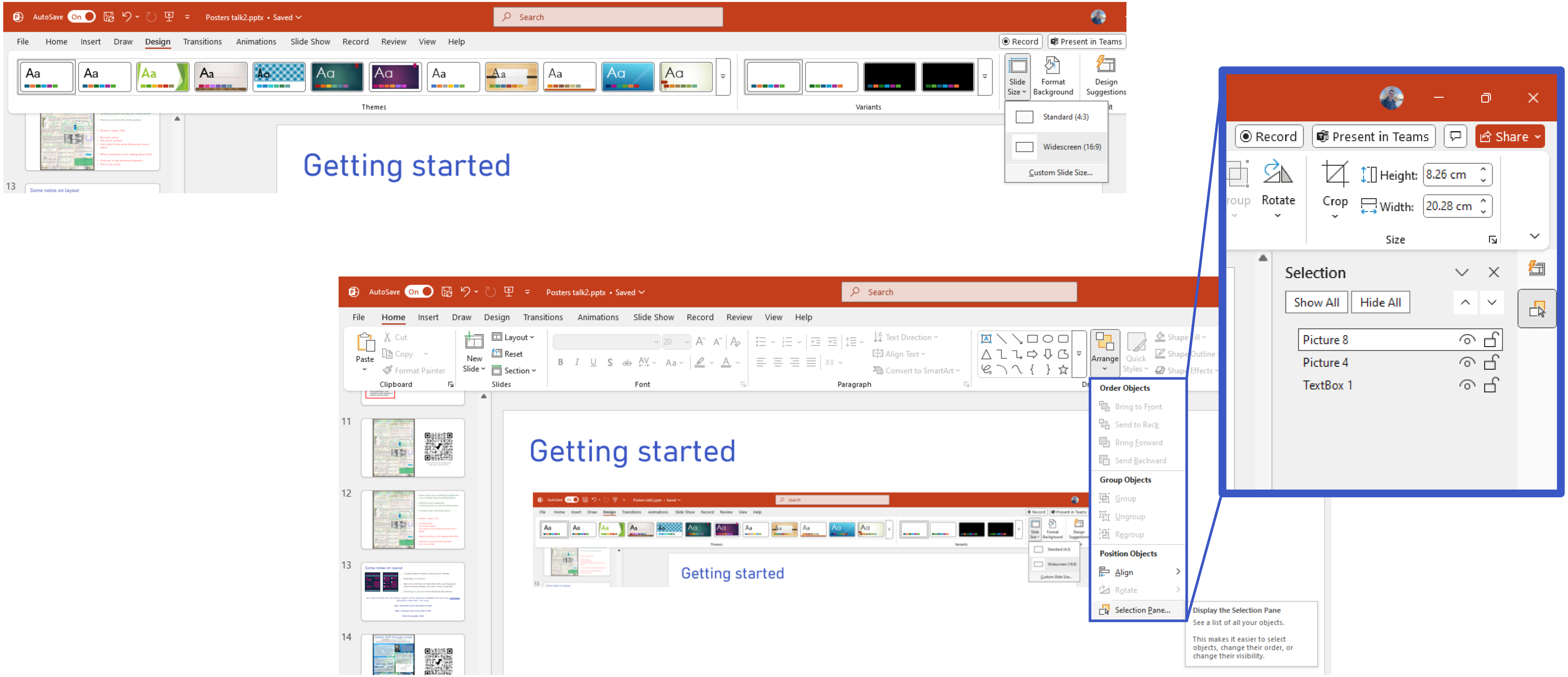
Check the guidelines from the poster session: you might be completely constrained on size, layout, content, structure. They might even have a template!

- if you're *very* confident using LaTeX, there exist some poster templates based on the beamer package that can look good
  - without a lot of work, they're hideous
  - I wouldn't bother

- using PowerPoint is nearly always a safe bet – you know how to use it already, it's flexible, and it has a lot of useful features

Allan Gaw / University of Edinburgh

Getting started



Fonts and colours

- body text should be sans serif for readability (a necessary but not sufficient criterion for the font to be acceptable on a poster)

- think about colour contrast with the background – it's really important, more than anything else, that text is clear: err on the side of caution

- fonts need to be bigger than you think – it'll look silly on screen and as it begins to print, but hold your nerve and trust yourself

perceptually-uniform colour maps available at colorcet.com (in many formats)

colourcontrast.cc

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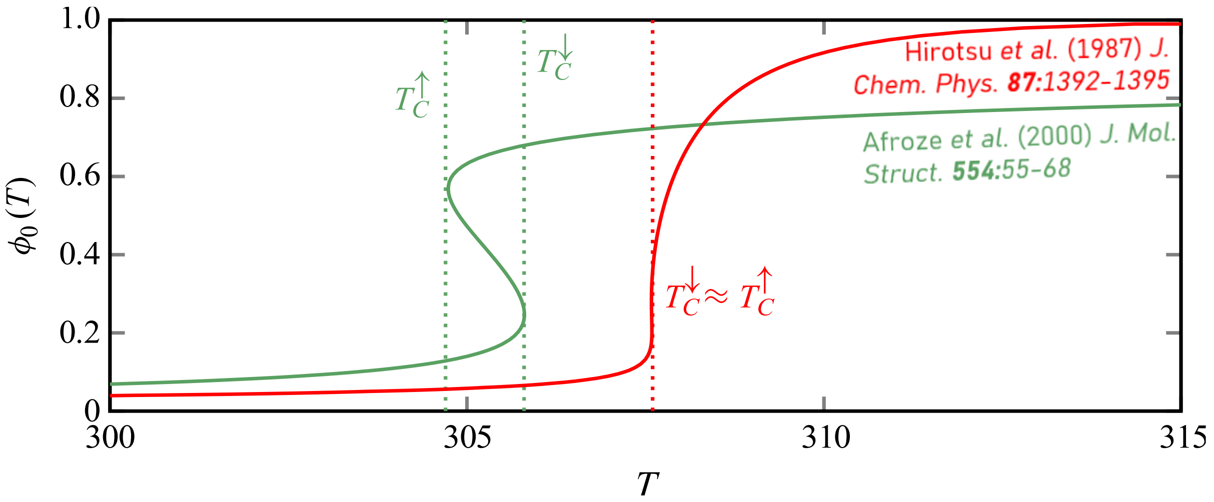
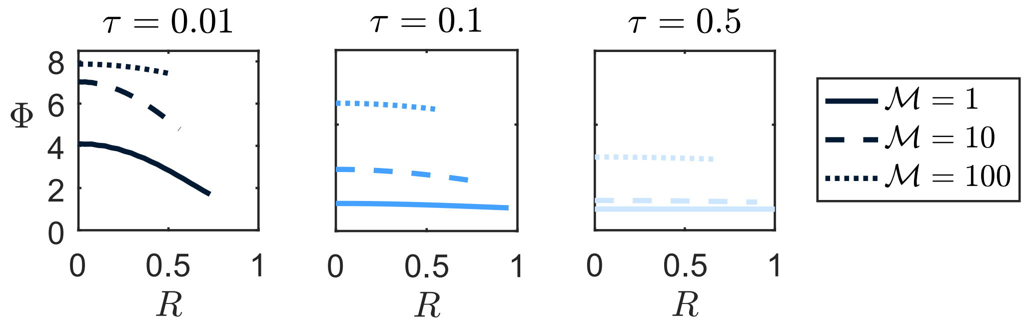
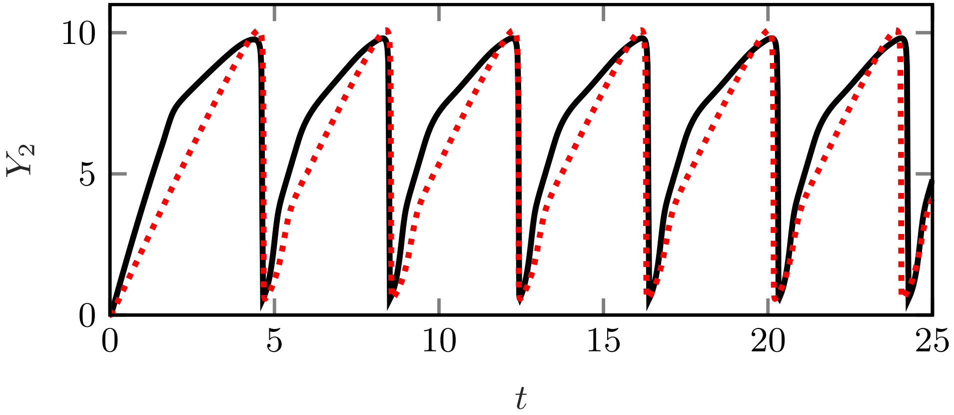
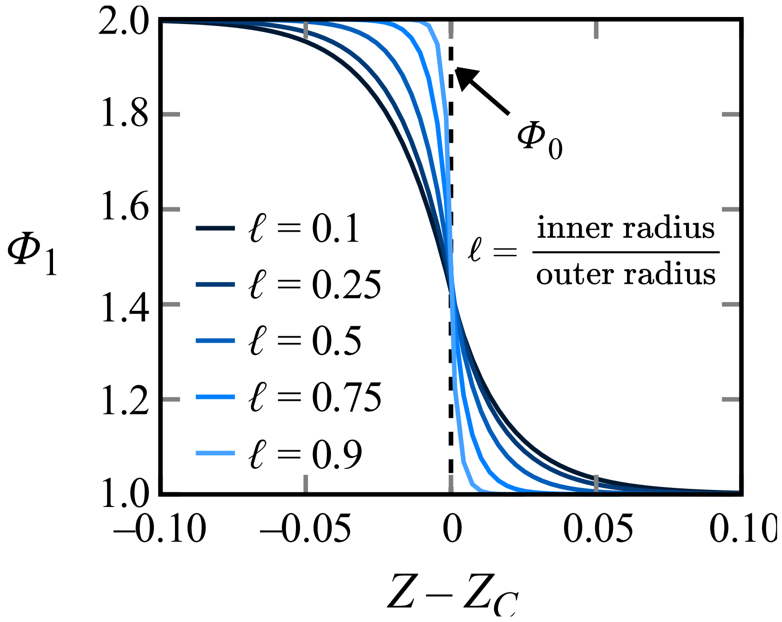
Figures

figures should be different from those that you'd use in a paper



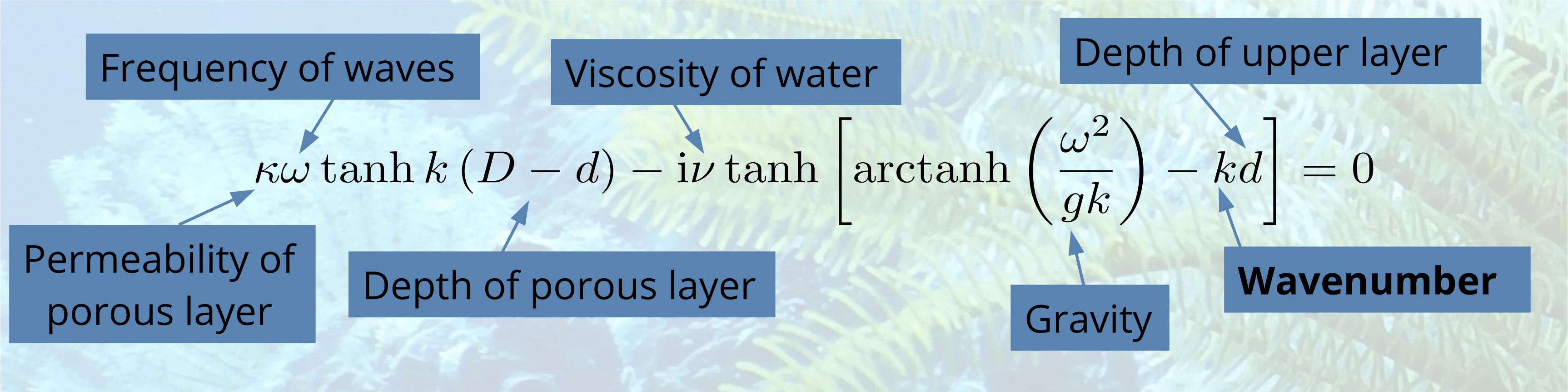






Equations

- don't shy away from equations when they're needed to explain the points
- define every term near the equation, and format things nicely (viereck.ch/latex-to-svg)



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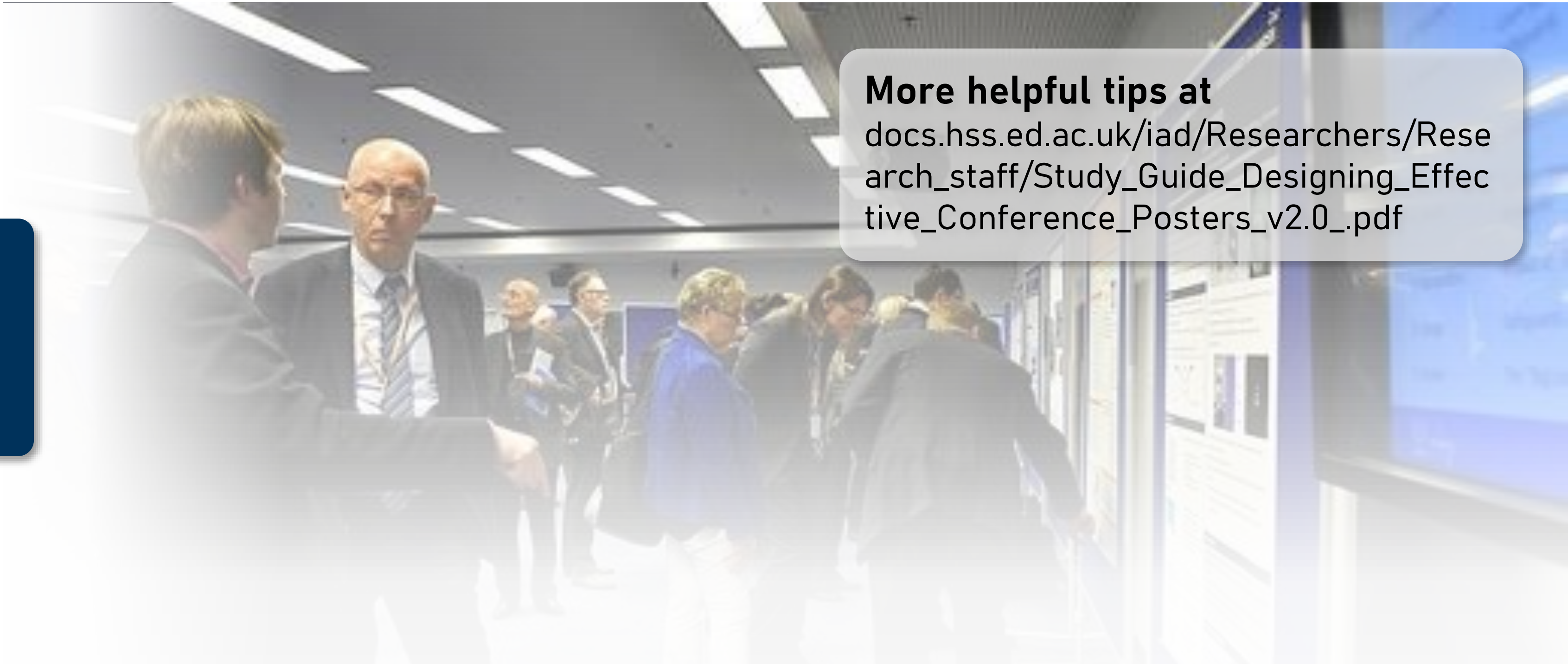
What poster pitfalls are you most likely to fall into?



More helpful tips at
docs.hss.ed.ac.uk/iad/Researchers/Research_staff/Study_Guide_Designing_Effective_Conference_Posters_v2.0_.pdf

a few final pointers:

- work with vector graphics (if nothing else, it lets you scale up) – Inkscape is your friend
- check the University's branding guidelines (brand.warwick.ac.uk) for rules
- sketch out the story you want to tell before you start making the poster
- plan what you're going to say in advance

…and remember **why** you're making and presenting the poster (and **who** is seeing it)!