Effective Posters—Presenting your Results Clearly and Persuasively

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An effective poster must

Attract and engage the audience—
• prominent title
• visually interesting figures (lots)
• clean, uncluttered appearance

Highlight key points so they are immediately recognizable

Be arranged logically so a viewer quickly understands the “story”

Contain all elements of a good research paper—motivation, methods, results, discussion, conclusions, acknowledgments
Distill your message

What one idea do you want your audience to remember when they walk away from your poster?

How can you best represent that one idea?
  In pictures?
  In plots?
  In words?

Tip: Note that “words” is the last item on the list! (and should take up the least space on your poster)

Use the visual elements of the poster to tell the story
Use the visual elements of the poster to tell the story

Engage the audience
Emphasize main points
Illustrate apparatus, methods, and results
Summarize numerical data to show trends or reveal relationships

Tip: People remember pictures, not words

At least half your “story” should be told in pictures

No graphic should be smaller than 5 in × 7 in (13 cm × 15 cm), and most should be larger
Crop and enlarge photos and simplify drawings to focus attention on important details
Scan photos at 300 dpi
Provide a brief caption for every graphic; tell people what to look for
Don’t use pointless graphics

Your project used a scanning tunneling microscope to characterize your thin-film superconducting samples. Which is a better image for your poster?

This excellent graphic shows the apparatus and the process

Tip: Show pictures of equipment only if they are related to an important idea that you want to convey
Avoid using graphics taken from the Internet; they’re too low-res to print acceptably

Looks fine on your monitor; looks awful blown up to poster size and printed.

Make every graphic mean something; avoid “eye candy”

Improving the Cooling of Blades and Vanes in Gas Turbine Engines

To increase efficiency, gas turbine engines have to run at higher temperatures.

Better cooling schemes can dramatically affect the life of blades and vanes in gas turbines.

Results from our studies are helping engineers design better gas turbine engines.

In summary, we are improving the cooling of blades and vanes in gas turbine engines.
But you have to have *some* text...

Authors’ names have been removed; the original poster had no title

Use easy-to-read fonts
Sans-serif fonts usually print well and are easier to read from a distance than serif fonts

*Fancy fonts are harder to read*
DON’T USE ALL CAPS, EVEN IN THE TITLE —much harder to read (and proofread!)

Title—120 pt
Section headings—60 pt
Figure captions—48 pt
Text—36 pt

**Tip:** Scale the font with the size of the poster
Every poster must have a “headline” (title) and a “byline” (authors)

Title—<10 words

Your name and affiliation—Ask your adviser NOW about co-authors

Tip: If it’s important, make it BIG

Present text in lists rather than paragraphs

Figures promote audience interest, provide supporting evidence, help explain complex ideas and relationships quickly, and give the viewer something to remember

Use figures to:
▪ promote interest
▪ provide supporting evidence
▪ explain complex ideas quickly
▪ show relationships
▪ give the viewer something to remember

Tip: Lists are easier to process quickly and are easier to remember
Include an “abstract” only if your poster is going to be unattended for lengthy periods*

If you’re standing there explaining the work, nobody’s going to read an abstract anyway

Use the space for something more compelling and visually interesting

If you *must* include an abstract, keep it very brief (<50 words)

*or if your adviser tells you to...

Remember that people will be looking at your poster while standing, not sitting

Tip: Don’t put important points in tiny print at the bottom

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Most viewers will start at the upper left corner of the poster and read down and across

Break up your story into columns (think “newspaper”)

Put important points at the top of each column

Tip: Keep lines of text <20 words long—people’s eyes don’t easily track strings of text longer than that, even at 30 pt

How is the viewer going to navigate through this poster?
Use headings to guide the viewer through the poster

Make your key points immediately recognizable

Use headings to help viewers locate what interests them
- Motivation
- Methods
- Results
- Conclusions

Avoid big empty spaces, too

If navigation is not immediately obvious, number the elements or use arrows to guide the viewer through the poster.
The center of the poster should feature the methods and results

Problem statement, motivation, objectives

**Methods**

**Results**

Applications or future work

Sources of additional information

Acknowledgments

**Tip:** Visually represent the relative importance of text elements

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Position your important points strategically

Production of \( \Lambda \) Particles from \( \Sigma^+ \) Decays at HERMES

**Background**
- Exercise spin transfer through fragmentation process
- Study spin structure of particles produced in semi-elastic scattering (SES) events

**The HERMES experiment**
- ENLAB: Experiment on Nuclear and Lattice Approach
- HERA: High Energy Research Accelerator
- HERMES: HERA Experiment on Nuclear and Lattice Structure

**The problem**
- \( \Sigma^+ \) decays
- \( \Lambda \) production

**Results**
- \( \Lambda \) production
- \( \Sigma^+ \) decays

**Tip:** Position important information above the midline and in the center
Choose colors carefully

Colors affect how easily your poster can be read

Use a high contrast between background and text

“Warm” colors are more visible, but don’t overpower with orange (even Illini orange)

Avoid using red/green or red/blue

Tip: Gradient backgrounds that look great on your monitor may not print properly

Use color to highlight, separate, or associate information visually

Tip: People expect color to mean something; don’t use color randomly
Choose neutral backgrounds with high-contrast text and images

Leave adequate “white space”

Effective posters look uncluttered
Use white space to isolate and emphasize important details
Leave at least 1.5 in (4 cm) of white space between columns
Balance elements on the page

Tip: Leave at least 0.5-in (1.25-cm) margins on all sides of your poster; no plotter prints to the very edge of the paper
“White space” doesn’t have to be white

Radiative Transfer in Turbulent Interstellar Clouds
Charles Hansen, University of Illinois at Urbana Champaign

You must have an “acknowledgments” section on your poster

First, get it spelled correctly—no e following the g in the US English spelling of acknowledgment

(Don’t believe me?—look at the acknowledgment page of any book published by a US publisher)

British English spells it with the “e,” but we colonials have our own rules

Some wimpy dictionaries may accord “acknowledgement” alternative status, but we have higher standards in physics
Acknowledge research contributions by people other than the authors

Persons who gave scientific guidance, participated in discussions, or shared unpublished results, data, or samples
Persons who provided facilities or equipment
Assistants or students who helped do the work
Technicians at user facilities or labs

Tip: Make it a simple statement of thanks, not a testimonial or dedication

Acknowledge by name only

Do not use titles, honorifics, positions, or awards

Paul G. Kwiat
NOT
Professor Paul G. Kwiat, Bardeen Chair in Physics
Anthony J. Leggett
NOT
Sir Dr. A.J. Leggett, Nobel Laureate
Always acknowledge financial support of the research—*always*

Give the name of the funding agency and grant or contract number

“This material is based upon work supported by the National Science Foundation under Grant No. ___.”

On posters, the following disclaimer must be included for NSF-funded research:

“All opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the National Science Foundation.”

What about logos?

Federal funding agencies may allow you to use their logos, but obtain a high-resolution image and follow their guidelines

The University has explicit rules about the use of the I-mark

Companies are aggressive about protecting their brands and trademarks; just because you can grab a logo off a website does *not* mean you can use it with impunity
Where to put the acknowledgments?

Smaller font
At the bottom
Lower right corner

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Prepare a “stump speech” to introduce your poster

Should be 1–2 min.

Briefly state
1. What you studied and why it’s important
2. What methods you used
3. What your principal results are
4. What you think they mean
5. What you’re going to do next

Prepare two versions—one for experts and one for novices

Be prepared to be interrupted with questions; rehearse possible answers
Coordinate the elements of your stump speech to the sections of your poster

Stump speech:
1. What you studied/why it’s important
2. What methods you used
3. What your principal results are
4. What you think they mean
5. What you’re going to do next

Poster:
1. Motivation
2. Methods
3. Results
4. Conclusions
5. Future work

Point to the different sections of the poster as you’re talking
Prepare two versions of your stump speech

Non-experts:
- Emphasize the “big picture”
- Explain what’s new and why it’s important
- Use simple words—no acronyms or jargon
- Don’t get bogged down in technical details

Experts:
- More technical language
- More detailed explanations of methods and results
- More math

Rehearse both versions

Out loud
In front of real people
Okay to write it out first, but practice until you can deliver your lines without notes
How do you know which version to give?

**ASK!**

Hi, I’m Matt. Thanks for stopping by. I’m working on an experiment to detect neutrinos. What do you know about neutrinos?

Be prepared to be interrupted with questions during your speech

Respond to a question as soon as it is asked, don’t just keep rattling off your speech

That’s a great question. We’re interested in them because they are a candidate for dark matter.
Rules for answering questions:
Always be respectful
If you don’t understand the question, ask for clarification
If the question is off-topic, redirect
Don’t ever argue with a questioner—you’ll just look bad
If you don’t know the answer, just say so*

*Make a note of it to ask your adviser!
*Ask for the person’s email address and say you’ll find out the answer and send it to him or her.

Find out before your session . . .
The location and time by which your poster is to be displayed
What kind of surface your poster will be mounted on
Whether you need to provide your own tape, thumbtacks, Velcro strips...
Whether other needed equipment will be provided (electrical outlet, table, easel)
Tip: Don’t expect the meeting organizers to supply you with anything other than space
**Tips for successfully presenting your poster:**

Arrive early (early birds usually get the desirable locations)

Bring your own “poster hanging” emergency kit

Have your “stump speech” prepared to explain your work to visitors
  - Give the big picture
  - Explain why the work is important
  - Have two versions—one for experts and one for non-experts

Greet each visitor with a smile; ask questions to elicit interest and level of understanding

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**Be prepared to mount your poster on any surface**

Your poster-hanging toolkit should include:
  - Push pins or thumbtacks
  - Straight pins or drawing pins
  - Plastic mounting putty
  - Velcro® strips and glue
  - Clear PCV tape or masking tape
  - Scissors

Have a permanent marker the color of your text for emergency typo corrections

Have a small notebook and pen handy for notes
Convey your enthusiasm for your research project

Greet people as they walk up to your poster
By your stance and expression, invite them to ask questions
Have your business cards, copies of your paper, or other handouts ready

Tip: Open your hands, lean forward, and smile

Have hand-outs available
A miniature version of your poster
An extended abstract or a summary
Reprints or preprints
Include your complete contact information

Tip: use a QR code to link to the group’s web site or a copy of the paper

Tip: an 11-in x 17-in sheet of paper, folded in half, gives you four pages for additional information about your work in one handout
Some advice from the experts:

Never *ever* put *anything* on your poster that you do not thoroughly understand.

That figure you got from somebody else and added at the last minute...

...will be all the audience asks questions about.
Some final advice:

Eat breakfast (or lunch) before your session
Take a bottle of water with you—it’s hard to talk when your mouth feels like a desert
Wear comfortable shoes
Wear clothes that are loose enough you can point to things on your poster
Take pride in what you’ve learned and done—don’t apologize
Relax and have fun

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