



Creating Effective Research Posters and Pitches

Training for ECRs and PhDs

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Hydrogen Industry Forum 1st July
Pitch and Poster Competition
ECR Forum 2nd July
@IAAPS Bristol

[UK-HyRES & GW-SHIFT Hydrogen Industry & ECR Forums - ukhyres](#)

Part A – The 1-Minute Research Pitch

Why This Matters

Industry audiences need clarity fast.

! *Viewers decide in the first 3-10 seconds whether to engage.*

Industry professionals often:

- Have limited time
- Are not specialists in your exact area
- Care about outcomes and applications
- Need to understand relevance immediately

A good pitch creates curiosity, not a full explanation.



What Industry Audience Want

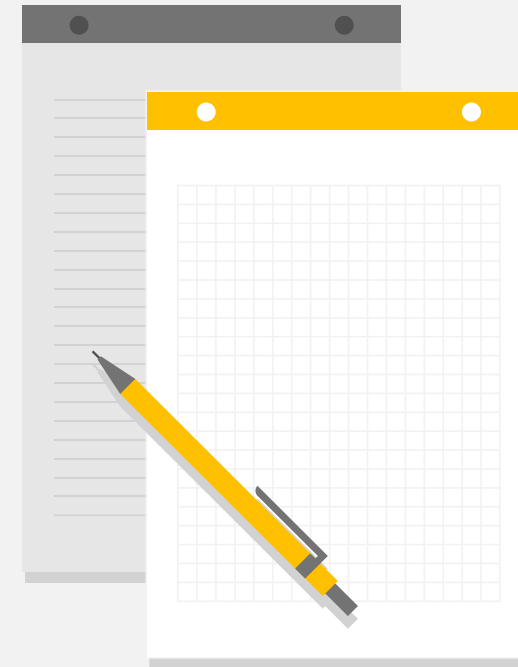
Poster visitors, funders, collaborators and industry partners want:

- a quick overview
- a clear problem
- a reason to care

Your spoken pitch is what unlocks the conversation.

What industry audiences want to know:

- What problem is this solving?
- Why does it matter *now*?
- What could this be used for?



Academic vs Industry

Framing

Academic framing	Industry framing
Research gap	Real-world problem
Methods	Outcomes & use
Precision	Meaning

Communication

Academic Communication	Industry Communication
Detail-heavy	Outcome-focused
Technical language	Accessible language
Literature-driven	Problem-driven
Process-oriented	Impact-oriented
Completeness	Clarity

Discussion: “What frustrates non-academic audiences when listening to researchers?”

The Purpose of a 1-Minute Pitch

Your pitch should:

- Explain what you do
- Explain why it matters
- Explain who benefits
- Encourage further conversation

! The goal is: **NOT** to impress. **BUT** to invite engagement.



The 60-Second Structure

1. The Problem (10–15 sec)

- What challenge exists?

2. Your Research (20 sec)

- What are you doing?


3. Why It Matters (15 sec)

- What impact could it have?
- What does this enable?

4. The Ask / Future (10 sec)

- Why should someone care or continue the conversation?

A simple pitch formula:

 **We/I help [who] solve [problem] by [approach], leading to [impact].**

Example: “We help manufacturers reduce energy waste by developing AI-driven monitoring systems that identify inefficiencies in real time.”



Language That Works

Avoid the Academic Trap!

Avoid	Instead
<ul style="list-style-type: none">• Excessive research details• Acronyms• Long introductions• Over-qualification• Reading from notes	<ul style="list-style-type: none">• Focus on relevance• Use plain English• Emphasise value• Speak conversationally

Example:

Academic: “We investigate novel catalytic pathways for...”

Industry-Friendly: “We’re developing cleaner and cheaper chemical manufacturing methods...”

Have a go: Translate one sentence from your abstract.

Strong Opening Examples

Weak

“My research investigates...”

Better

“Every year, hospitals lose millions due to delayed diagnostics...”

Better

“We’re developing a faster way to detect battery degradation before failure occurs.”

Key point: Lead with relevance, urgency or opportunity.

Final Tips

Delivery

Be:

- Conversational
- Energetic
- Clear
- Human
- Confident

Avoid:

- Memorised robotic delivery
- Talking too fast
- Overloading information

Body Language & Presence

- Smile!
- Pause intentionally
- Make eye contact
- Use natural gestures
- Stand confidently
- Avoid pacing excessively

Key point: Confidence increases perceived credibility.

Tailoring The Pitch

Different audiences need different emphasis.

- Audience: Focus
- Investor: Commercial opportunity
- Policymaker: Societal impact
- Industry: Application and efficiency
- Public: Human relevance
- Academic: Novelty and rigour

! Your goal is not to explain everything.

Your goal is to spark curiosity, invite discussion, build confidence and open doors.

Part B – Industry-Focused Poster Design

What Makes an Industry Poster Different?

What an Industry Poster is:

- Not a paper on a wall
- A visual tool
- A platform for discussion

Industry posters are:

- Faster to scan
- More visual
- More outcome-focused
- Less text-heavy
- More application-driven

! This is not a journal article enlarged to A0.



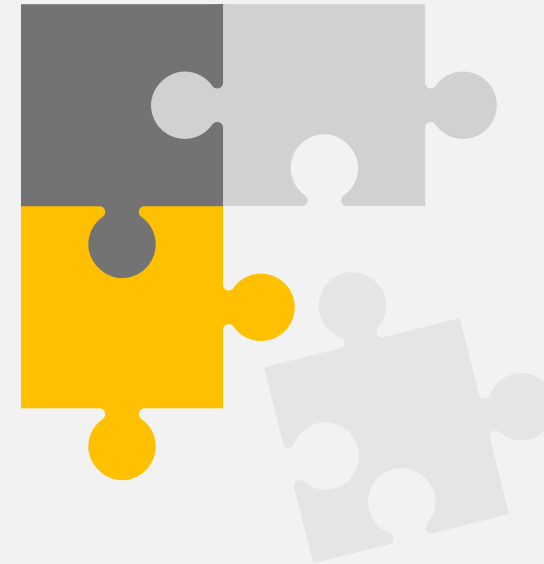
The 3-Second Rule

Viewers decide within seconds whether to engage.

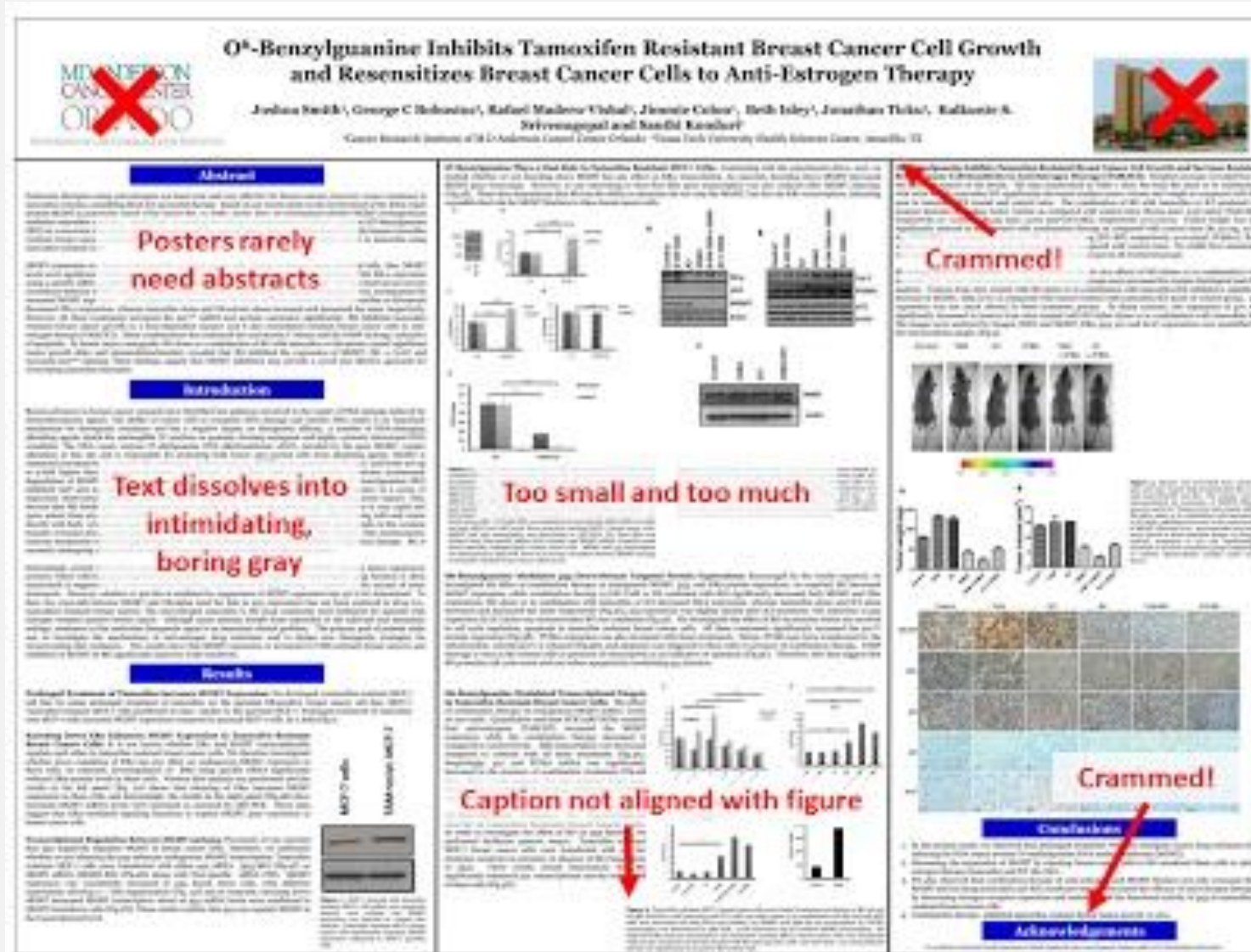
Your poster must immediately communicate:

- What the project is
- Why it matters
- Why someone should care

! *The poster should make sense without you there*



Poster Examples



O⁶-Benzylguanine Inhibits Tamoxifen Resistant Breast Cancer Cell Growth and Resensitizes Breast Cancer Cells to Anti-Estrogen Therapy

Judith Smith, George C Robinson, Rafael Madros-Vidal, Jennifer Cohen, Beth Isley, Jonathan Tinko, Kallista K. Srivatsan and Sandil Kumar

Abstract

Posters rarely need abstracts

Introduction

Text dissolves into intimidating, boring gray

Results

Too small and too much

Caption not aligned with figure

Crammed!

Crammed!


Conclusions

Acknowledgments

! (on the left margin)



Poster Examples

On Lessons Learned from Remote Sensing of Irish Grasslands, and Potential for Sentinel Data



Irish Land Mapping Observatory

Fiona Cawkwell*, Ingmar Nitze, Brian Barrett
School of Geography & Archaeology, University College Cork (UCC), Ireland
*email: f.cawkwell@ucc.ie

1. Introduction

- Grassland is the dominant land cover in Ireland (Fig. 1), accounting for approximately 64% of the country's land area and representing over 90% of all agricultural land (~4,000,000ha).
- Thus, there is considerable potential to increase carbon sequestration in grasslands through improved land management and restoration of degraded grasslands (O'Mara, 2012).
- So far there are no operational RS-based systems in Ireland for the detection of grassland management types. This study aims to close this gap in order to achieve more reliable figures for the reporting of the national carbon budget.

2. Study Area & Data

- Two study areas in central and north-western Ireland encompassing Counties Longford and Sligo (Fig. 2)
- Climatic conditions with frequent cloud-cover and other atmospheric disturbances are the limiting factor for the use of optical RS data in Ireland
- A 13-year time-series from 2001 to 2013 of MODIS 16-day composites (MOD13Q1 - 250 m resolution) giving 23 images per year
- 2 Landsat-8 (summer 2013) and 4 DMC-UK2 (3 from 2011 and 1 from 2013) images

3. Methodology

- Four general land cover classes (Forest, Water, Settlement, Peatland) and two Grassland classes (Improved GL [GL], Semi-improved GL [SIS]) were classified. A further subdivision of the grassland classes was prevented by the spatial resolution of the MODIS data given the high fragmentation of the landscape, and of the Landsat/DMC data given their infrequent acquisition.
- Time-series pre-processing of MODIS data, taking quality measures into account and applying temporal filters to reduce data noise (Fig. 3), to reveal spectral classes.
- Random Forest (RF), Extremely Randomized Trees (ERT), Support Vector Machine (SVM) and Maximum Likelihood (ML) classifiers used.
- 5-fold cross validation performed for training and validation of the classifiers on 1051 and 2134 samples from the Longford and Sligo datasets respectively.
- STARFM (Gao et al., 2008) was used to fuse a pair of Landsat and MODIS images from June 9th and compared with modelled MODIS data for July 11th
- Three DMC images from March, April and November 2011 were classified with the same classes and methods as the MODIS time series.

4. Results

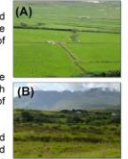


Figure 1: Improved (A) and Semi-improved (B) grasslands

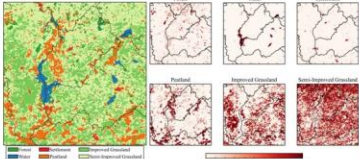


Figure 4: MODIS classification results and class specific probabilities for Longford

- High classification accuracies for MODIS data in homogeneous areas (Fig. 4), with best results from SVM and ERT (typically 97% accuracy), but low spatial resolution insufficient for heterogeneous areas.
- MODIS fusion model trained using cloud-free Landsat image, but due to changes in landscape (e.g. grass cutting and grass growth) modelled image showed greater correlation to June template than July target date, especially in the near and middle infra-red (Fig. 5)
- The multi-temporal DMC-UK2 classification accuracies were generally very high using the machine learning classifiers (> 95%), but lacked accuracy if mono-temporal classification was conducted (Fig. 6)

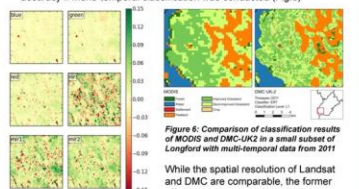


Figure 5: Differences in reflectance between modelled and observed Landsat results for July 11th 2013

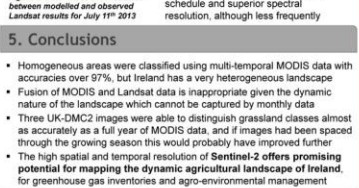


Figure 6: Comparison of classification results of MODIS and DMC-UK2 in a small subset of Longford with multi-temporal data from 2011

5. Conclusions

- Homogeneous areas were classified using multi-temporal MODIS data with accuracies over 97%, but Ireland has a very heterogeneous landscape
- Fusion of MODIS and Landsat data is inappropriate given the dynamic nature of the landscape which cannot be captured by monthly data
- Three UK DMC2 images were able to distinguish grassland classes almost as accurately as a full year of MODIS data, and if images had been spaced through the growing season this would probably have improved further
- The high spatial and temporal resolution of Sentinel-2 offers promising potential for mapping the dynamic agricultural landscape of Ireland, for greenhouse gas inventories and agro-environmental management

References

O'Mara, F. (2012) The role of grasslands in food security and climate change. *Annals of Botany*, 1-8.
Gao, F., et al. (2008) An algorithm to produce temporally and spatially continuous MODIS-AI time series. *Geoscience and Remote Sensing Letters*, IEEE, 5, 1, p. 90-94

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MIRACINAE IN AUSTRALIA: Investigating the biodiversity of an unexplored subfamily of parasitoid wasps

Mollie Slater-Baker, Erinn Fagan-Jeffries
University of Adelaide

MIRACINAE

Miracinae is small subfamily of braconid wasps, characterised by their 14-segmented antennae, a distinctive 'Y' shaped structure on the abdomen, and reduced wing venation. They are parasitoids of the leaf-mining larvae of small moths, and are known to inject their host with symbiotic polyoviruses when the female lays her eggs, acting to suppress the host immune system.

WHY STUDY THEM?

Research on Miracinae is currently very limited, and to date, no work has been done on these wasps in Australia. Describing and studying biodiversity is important for a variety of reasons, from conservation to human health. Research into parasitoid wasps may be particularly important, as they can be used as biocontrol agents against some pest caterpillars, reducing our reliance on chemical pesticides.

AIM: To perform a preliminary exploration of the biodiversity of Australian miracine wasps.

METHODS

DNA was extracted from Australian miracines, and the cytochrome c oxidase subunit I (COI) region was Sanger sequenced. Australian sequences obtained were compared with all Miracinae COI sequences from the Barcode of Life Database, to perform phylogenetic analyses and species delimitation.

Results

- Australian miracines form two distinct clades, most closely related to specimens from Costa Rica, the Malay archipelago and Myanmar.
- Australian miracines appear to be a basal lineage in the global context
- Of 14 Australian Specimens, 10 distinct species were recognised.



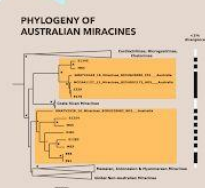


CONCLUSIONS

- The number of distinct specimens in a limited sample suggests that Australia may have many endemic species of Miracinae.
- Morphological differences between delimited species were difficult to characterise, and some species may be morphologically cryptic
- DNA extraction was unsuccessful for older samples collected in 2005, so specimen age may be a limiting factor for DNA sequencing

WHAT NEXT?

There is much more to be done towards understanding the Australian Miracinae, and further avenues of study may involve:

- Increased sampling and barcoding of miracines from across Australia
- Phylogenetic analysis using additional loci such as internal transcribed spacer 2 (ITS2), and wingless (WGS) to produce a more robust phylogeny for the group
- Detailed imaging of morphological features using scanning electron microscopy
- Formal identification and description of Australian species

TAHUKAH KAMU? APA ITU BIOGAS?

Indonesia memiliki jumlah populasi penduduk: **no 4 terbanyak di dunia**

Negara Indonesia menggunakan Gas bumi beserta turunannya sebagai salah satu sumber pemenuhan energi primer, setelah batubara dan minyak bumi

Biogas adalah gas yang dihasilkan oleh pencernaan anaerobik atau fermentasi dari bahan yang dapat terurai alami oleh mikroorganisme terutama bakteri

bahan tersebut antara lain:

- limbah rumah tangga
- kotoran ternak
- biomassa
- limbah pertanian

namun...

- kebutuhan akan energi terus bertambah
- berkurangnya produksi karena terjadi penurunan reservoir
- cadangan gas bumi yang semakin berkurang

sehingga diprediksi neraca gas bumi negeri akan menjadi negative dalam waktu dekat!

SOLUSINYA??

Gas bumi yang diaplikasikan dalam suatu proses yaitu dalam bentuk fase gas

LFG + H2 → BIOGAS

BIOGAS

SEBAGAI ALTERNATIF PENGGANTI GAS BUMI

MANFAAT BIOGAS APA AJA?

- pengurangan emisi gas rumah kaca
- BBM

di peternakan mampu mengurangi polusi bau, serangga, dan patogen yang berasal dari timbunan kotoran tradisional

perenerangan rumah

bahan bakar memasak

Karena Indonesia mempunyai potensi cukup besar dengan menggunakan:

limbah ternak

Dari data 2018, jumlah ternak sapi Indonesia lebih dari 500 ribu ekor dan jumlah ternak hewan besar keseluruhannya mencapai lebih dari 30 juta ekor.

KENAPA HARUS BIOGAS?

bahan baku limbah produksi minyak sawit (POME)

Kebun kelapa sawit Indonesia menghasilkan >40 juta ton Kelapa sawit yang berpotensi menghasilkan POME dalam jumlah besar sebagai produk limbah dalam pembuatan minyak sawit.

Sepriza Berliana
2010432029
Matematika

Making an Effective Poster

A strong poster should:

- Attract attention
- Communicate quickly
- Start conversations
- Support networking
- Demonstrate professionalism

Anatomy of an Effective Poster:

- Strong title
- Clear motivation
- Visual explanation
- Key results / features
- Why this matters

Global sourcing shouldn't cost us the Earth

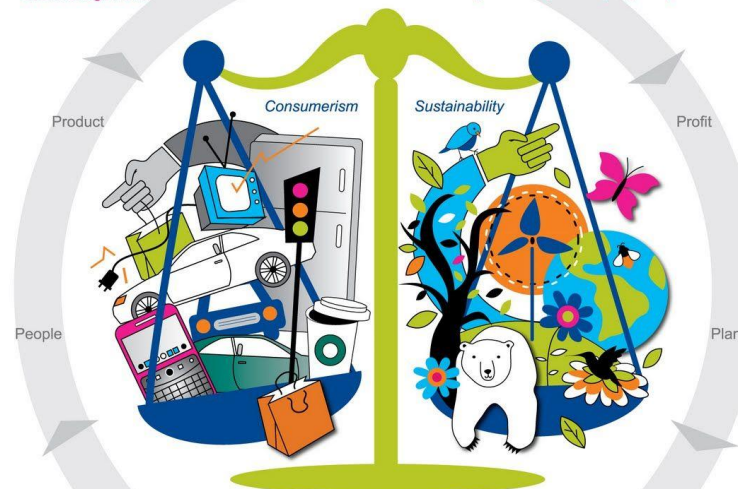


1 INTRODUCTION

How can business achieve corporate sustainability in a world where global sourcing is essential for competitive advantage, long-term survival and cost management?

2 RESEARCH AIMS

- Look at how businesses gain competitive advantage by rethinking the way we make, buy and sell things.
- Test the relationship between the 4Ps of corporate sustainability: Profit = planet + people + product



4 FINDINGS

Corporate sustainability score card for industry to use as a measure of what good looks like and to ensure the correct balance of the 4Ps is achieved.

Business cannot succeed in societies that fail.

– Bjorn Stigson, president of the world business council for sustainable development (WBCSD)

3 METHODS

The study will look at major manufacturing and retailing brands, taking the electronics industry as a primary case study and pilot group. Models will be used to test the hypothesis that business will achieve competitive advantage through sustainability. Models such as the Triple Bottom Line* and 3Ps will be used to test and demonstrate that responsibility to stakeholders, and not shareholders, leads to profitability in a world where making good products shouldn't cost us the Earth.

*Triple bottom line by John Elkington. A reporting framework for sustainability.

Audience First

Before designing ask:

- Who will read this?
- What matters to them?
- What action do I want them to take?
- What should they remember?

Academic vs Industry Poster

Academic Poster	Industry Poster
Dense text	Clear summaries
Detailed methods	Practical relevance
Extensive references	Key insights
Specialist language	Accessible language
Data-heavy	Story-driven

Industry Messaging

Strong industry-focused headings:

Instead of: “Experimental Methodology”

Use: “How We Tested the Solution”

Instead of: “Results”

Use: “Key Findings” or “What We Found”

Poster Structure

Recommended structure:

1. Title
2. Problem / Challenge
3. Solution / Research
4. Key Findings
5. Impact / Application
6. Next Steps
7. Contact Information

Good titles:

- State outcome or purpose
- Avoid “An investigation into...”

Better:

“A segmented ion trap enabling scalable quantum architectures”



Design Tips

Visual Hierarchy

- Large title
- Clear section headings
- Short blocks of text
- Visual emphasis
- White space

Key principle: Guide the eye naturally.

Less Text, More Meaning

Avoid:

- Large paragraphs
- Overloaded sections
- Excessive references
- Full methodology descriptions

Use:

- Bullet points
- Diagrams
- Visual summaries
- Key takeaways

Designing for Readability

Recommended sizes:

Element	Suggested Size
Title	90–150 pt
Headings	40–60 pt
Body text	26–32 pt
Captions	20–24 pt

Key rule:
Readable from 1–2
metres away.

Effective Use of Graphics

Good visuals should:

- Support the message
- Simplify complexity
- Highlight patterns
- Be high resolution
- Include captions

Reminder: Every
image must earn its
place.

Design Tips Continued

Before vs After Graphs

Compare:

- Default Excel graph
- Simplified presentation graph

Discuss:

- Clear labels
- Reduced clutter
- Improved readability
- Stronger storytelling

Colour and Branding

Recommendations:

- Use 2–3 core colours
- Maintain contrast
- Use white space generously
- Align with institutional branding
- Avoid overly bright backgrounds

Poster Flow

People read:

Top → Bottom Left → Right

Use:

- Columns
- Consistent spacing
- Alignment
- Visual pathways

QR Codes and Takeaways

Useful additions:

- QR code to paper or website
- LinkedIn profile
- Contact details
- One-page summary
- Collaboration invitation

Presenting the Poster

When standing with your poster:

- Stand beside, not in front
- Invite discussion
- Offer a short overview
- Ask questions
- Adapt based on audience interest

Designing for Conversation

Posters should:

- Free you to talk
- Anchor your pitch
- Allow pointing and explaining

Focus on:

- Key findings
- Relevance
- Application
- Future opportunities



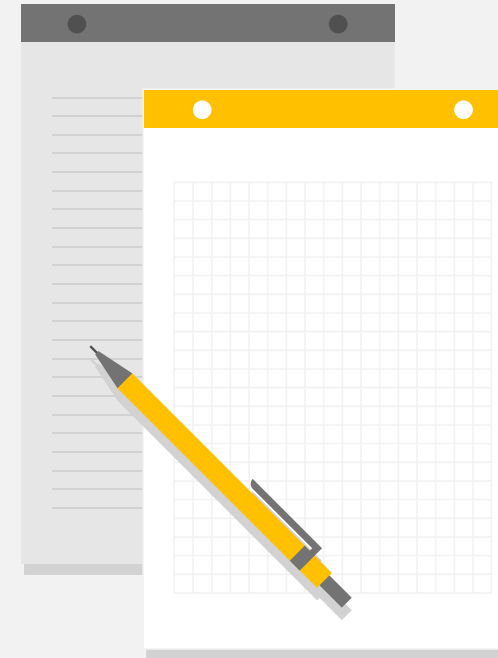
Final Takeaways

Great posters:

- Tell a story
- Focus on impact
- Make research accessible
- Encourage conversations
- Build professional opportunities

Poster checklist:

- ✓ Message clear in 10 seconds
- ✓ Industry relevance explicit
- ✓ Visuals do the work
- ✓ Contact details included



UK-HyRES

UK Hub for Research Challenges in
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