

# Publication Writing



Module 11 Topic 6



# Types of Manuscripts

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## **Types of Journals:**

- General or Specialty Clinical, Basic Science, Lay Press; Peer-reviewed or Paid-invited contributor; Academic, Society, Conference, or Industry-sponsored;

## **Types of Manuscript submissions:**

- General: original research, letters to the editor, short communication, editorials, reviews, case reports.
- Special: technical briefs, methodological papers, application of information technology, research letters, blogs, poetry, cartoons, photographs.





# Types of Studies in Manuscripts

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## **Primary Research:**

- Experiments
- Clinical trials
- Surveys
- Qualitative studies

## **Secondary or Derivative:**

- Overviews: reviews, systematic reviews, meta-analysis
- Guidelines
- Decision analyses
- Economic analyses





# Structure of Research Papers

## Introduction:

- High level problem statement
- mid-level problem statement
- “research gap”
- goal of this study

## Methods:

- setting, population, procedures/statistical analyses, etc.
- reproducible

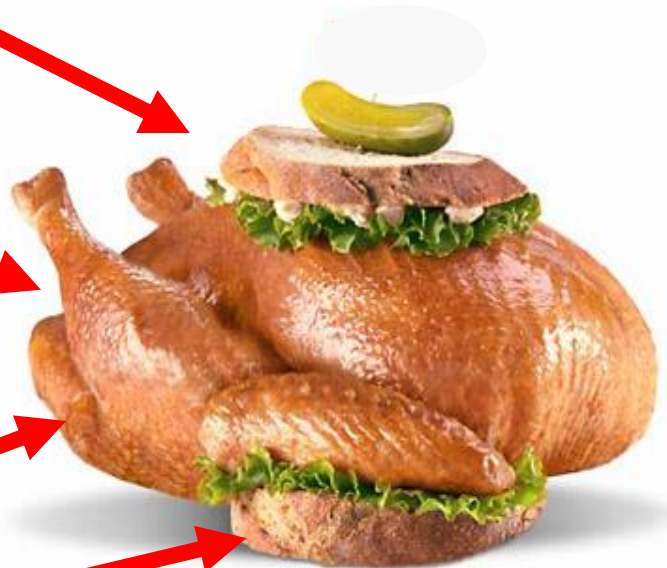
## Results:

- Data (without interpretation)

## Discussion:

- Interpretation of data
- put in context with existing research
- limitations
- summary statement

“Sandwich technology”





# Structure of scientific paper

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- The structure of a research paper comprises three core parts, namely introduction, body and discussion
- The progression of the thematic scope of a paper within these parts typically follows a pattern called the 'Hourglass Model'
- The introduction leads the reader from general motivations and a broad subject to a particular research question that is tackled in the body of the paper





# Structure of scientific paper (contd)

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- The body of the paper stays within a tight thematic scope and describes the research methods and results in detail
- Eventually, the discussion part aims to draw general conclusions and present implications from the results





# IMRaD

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- Introduction--Why did I do it?
- Methods--What did I do?
- Results--What did I find?
- Discussion-- What might it mean? *What is our overall finding? What are the strengths and weaknesses of the study in relation to other studies? Why might we have got different results? What might the study mean, particularly for clinicians or policy makers? What questions remain unanswered and what next?*





# IMRAD: Introduction, Methods, Results, and Discussion

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- Title
- Author information
- Acknowledgments
- Abstract
- References (what, how many, self-citation, journal self-citation; in-press, in-print; forthcoming; theses, personal comm.)
- Tables





# IMRAD: Introduction, Methods, Results, and Discussion (contd)

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- Figures
- Legends
- Word count
- Keywords
- Author contribution (what qualifies, ghost authors, honorary authors)
- Conflict of interest (sponsors, agency information)
- Trials registration, statements such as the CONSORT
- Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication
- <http://www.icmje.org/>





# IMRaD (Introduction)

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- Why did we start?
- What has gone before - ? A systematic review
- Why was this study needed?
- Be sure that readers understand the importance of the study-but don't overdo it
- Don't try to show readers that you have read everything





# Methods

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- Like a recipe
- For informed readers this is the most important section
- Describe how subjects were selected and excluded
- Don't describe standard methods in detail - use references
- Statistics
- Ethics
- Remember that you can put more detailed methods on the web--for example, questionnaire





# Results

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- Stick to what is relevant
- Be sure to include basic descriptive data
- The text should tell the story
- The tables give the evidence
- The figures illustrate the highlights
- Don't include just percentages or p values
- Include confidence intervals
- Think about absolute risk, number needed to treat, etc
- Avoid beginning to discuss the implications or strengths and weaknesses of your study





# Discussion

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- Statement of principal findings
- Strengths and weaknesses of the study
- Strengths and weaknesses in relation to other studies, discussing particularly any differences in results
- Meaning of the study: possible mechanisms and implications for clinicians or policymakers
- Unanswered questions and future research
- Go easy on the last two





# Topping and tailing

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- Title: Include design; Don't try to be clever
- Abstract: Must be structured; Include some numbers, not all
- References: Keep to the essentials
- Covering letter: Something very crisp
- Authorship, acknowledgements, competing interests





# Title

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- The title is the part of a paper that is read the most;
- It is usually read first and most often, it is the only thing that is read
- Electronic indexing services rely heavily on the accuracy of the title to allow users to find papers that are relevant to their research
- Day (1983) defines a good title “as the fewest possible words that adequately describe the contents of the paper” (p.9)
- When the title is too long, it usually contains too many waste words such as ‘Investigations on’ at the beginning
- On the other hand, titles that are too short often use words which are too general





# Abstract

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- An abstract comprises a one-paragraph summary of the whole paper
- Abstracts have become increasingly important, as electronic publication databases are the primary means of finding research reports in a certain subject area today (Koopman, 1997)
- Hence, everything of relevance to potential readers should be in the abstract, everything else not





# Additional manuscript structure related considerations:

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- Acknowledgments
- Trials registration, statements such as CONSORT
- Sponsorship
- Disclosure of (non)Conflicts of Interest
- Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication
- <http://www.icmje.org/>
- Electronic publication ⇔ in-print
- Pre-publication – allowed or not?
- Paper ⇔ Conference proceedings





# Style of writing





# Criteria for authorship of the International Committee of Medical Journal Editors (ICMJE)

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- Authorship should be based only on a substantial contribution to:
- Conception and design or analysis and interpretation of data *and*
- Drafting the article or revising it critically for important intellectual content *and*
- Final approval of the version to be published





# Competing interest

## What is conflict of interest?

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- A person has a conflict of interest when he or she has an attribute that is invisible to the reader or editor but which may affect his or her judgement
- Once visible to the reader there will be a perception that a person's judgement may be affected--whether it is or not
- The best policy on competing interest
- Always declare a conflict of interest, particularly one that would embarrass you if it came out afterwards





# Redundant publication

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- Happens commonly--perhaps 20% of studies
- Negative studies are often not published; positive studies are more likely be published more than once and distorts the evidence
- There is lots of room for arguing over the degree of overlap and what's legitimate but disclosure is the key
- Always send copies of overlapping papers and reference them
- The problem is not the publication but the lack of disclosure





# Overview of Good Publication Practice Guidelines, including GPP3: Why should medical writers care?





# Why All the Guidelines?

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- Peer-reviewed publications have the power to impact medical practice, drive treatment decisions and patient outcomes and the guidelines help reinforce the standards of excellence
- Guidelines help direct the ethical, accurate, complete, and transparent reporting of research
- establish an unbiased framework for the development of ethical and transparent peer-reviewed journal articles and presentations aimed at advancing the scientific and medical profession
- Lack of public trust in medical research and reporting of results









# Enhancing the Quality And Transparency Of Health Research



- <http://www.equator-network.org/>
- CONSORT – randomized clinical trials
- STROBE – observational studies in epidemiology
- PRISMA – systematic reviews and meta- analysis (PRISMA- P – for related protocols)
- STARD – diagnostic accuracy
- SPIRIT – protocol standards
- CHEERS – health economic reporting
- STRICTA – acupuncture trials (extension of CONSORT)



## Key reporting guidelines

<a href="#"><u>CONSORT</u></a>	<a href="#">Full Record</a>   <a href="#">Checklist</a>   <a href="#">Flow Diagram</a>
<a href="#"><u>STROBE</u></a>	<a href="#">Full Record</a>   <a href="#">Checklist</a>
<a href="#"><u>PRISMA</u></a>	<a href="#">Full Record</a>   <a href="#">Checklist</a>   <a href="#">Flow Diagram</a>
<a href="#"><u>STARD</u></a>	<a href="#">Full Record</a>   <a href="#">Checklist</a>   <a href="#">Flow Diagram</a>
<a href="#"><u>COREQ</u></a>	<a href="#">Full Record</a>
<a href="#"><u>ENTREQ</u></a>	<a href="#">Full Record</a>
<a href="#"><u>SQUIRE</u></a>	<a href="#">Full Record</a>   <a href="#">Checklist</a>
<a href="#"><u>CARE</u></a>	<a href="#">Full Record</a>   <a href="#">Checklist</a>
<a href="#"><u>SAMPL</u></a>	<a href="#">Full Record</a>
<a href="#"><u>SPIRIT</u></a>	<a href="#">Full Record</a>   <a href="#">Checklist</a>
<a href="#"><u>PRISMA-P</u></a>	<a href="#">Full Record</a>





# International Council Of Medical Journal Editors

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## Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals\*

### I. About the Recommendations

#### A. Purpose of the Recommendations

### A. Preparing a Manuscript for Submission to a Medical Journal



## ICMJE Form for Disclosure of Potential Conflicts of Interest



<http://www.icmje.org/>



# Good Publication Practice Guidelines (GPP3)



- The GPP3 guidelines were sponsored by the International Society for Medical Publication Professionals (ISMPP)



GPP3 guideline full Annals of Internal Medicine (AIM) article can be accessed through [www.ismpp.org/GPP3](http://www.ismpp.org/GPP3)



# Why is GPP3 Relevant to Medical Writers?

**Annals of Internal Medicine** RESEARCH AND REPORTING METHODS

## Good Publication Practice for Communicating Company-Sponsored Medical Research: GPP3

Wendy P. Battisti, PhD; Elizabeth Wager, PhD; Lise Baltzer ; Dan Bridges, PhD; Angela Cairns ; Christopher I. Carswell, MSc; Leslie Citrome, MD, MPH; James A. Gurr, PhD; LaVerne A. Mooney, DrPH; B. Jane Moore, MS; Teresa Peña, PhD; Carol H. Sanes-Miller, MS; Keith Veitch, PhD; Karen L. Woolley, PhD; and Yvonne E. Yarker, PhD

This updated Good Publication Practice (GPP) guideline, known as GPP3, builds on earlier versions and provides recommendations for individuals and organizations that contribute to the publication of research results sponsored or supported by pharmaceutical, medical device, diagnostics, and biotechnology companies. The recommendations are designed to help individuals and organizations maintain ethical and transparent publication practices and comply with legal and regulatory requirements. These recommendations cover publications in peer-reviewed journals and presentations (oral or poster) at scientific congresses. The International Society for Medical Publication Professionals invited more than 3000 professionals worldwide to apply for a position on the steering committee, or as a reviewer, for this guideline. The GPP2 authors reviewed all applications ( $n = 241$ ) and assembled an 18-member steering committee that represented 7 countries and a diversity of publication professions and institutions. From the 174 selected reviewers, 94 sent

comments on the second draft, which steering committee members incorporated after discussion and consensus.

The resulting guideline includes new sections (Principles of Good Publication Practice for Company-Sponsored Medical Research, Data Sharing, Studies That Should Be Published, and Plagiarism), expands guidance on the International Committee of Medical Journal Editors' authorship criteria and common authorship issues, improves clarity on appropriate author payment and reimbursement, and expands information on the role of medical writers. By following good publication practices (including GPP3), individuals and organizations will show integrity, accountability, and responsibility for accurate, complete, and transparent reporting in their publications and presentations.

*Ann Intern Med.* doi:10.7326/M15-0288

For author affiliations, see end of text.

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[www.annals.org](http://www.annals.org)





# What's new in GPP3?

## New elements include:

1. Guidance on updated ICMJE 2014 authorship criteria
2. Guidance on common issues regarding authorship
3. Guidance and improved clarity on author payment and reimbursement
4. Additional clarity on what constitutes ghost or guest authorship
5. **Expanded information on the role and benefit of professional medical writers**
6. Guidance for appropriate data sharing
7. Overall simplification of language and format with a new guiding principles section and quick reference tables addressing guidance on authorship criteria and common authorship issues





# GPP3 Section 2.4: Professional Medical Writers

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## 2.4.2: Working With Authors

- 1 The authors will control and direct the content of the publication or presentation. The writer must receive direction from the authors at the earliest possible stage (for example, before the outline is prepared)
- 2 All authors have agreed to the writer's involvement.
- 3 All authors have a documented agreement with the sponsor that identifies their respective rights, roles, and responsibilities.
- 4 The authors will disclose, at a minimum, the writer's name, professional qualifications, affiliation, funding source, and any other information required by the journal or congress.
- 5 Good publication practices will be followed.



Battisti WP, et al. Ann Intern Med 2015.  
\*Mansi BA, et al. Mayo Clin Proc. 2012.



# GPP3 Guidance on Authorship

GPP3 provides insights and examples to help clarify



ICMJE INTERNATIONAL COMMITTEE of  
MEDICAL JOURNAL EDITORS

Annals of Internal Medicine RESEARCH AND REPORTING METHODS

Good Publication Practice for Communicating Company-Sponsored  
Medical Research: GPP3

1

Substantial contributions to: the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work

**Defines what is substantial contribution and what it is not with examples**

2

Drafting the work or revising it critically for important intellectual content

**Provides clarity on what constitutes a critical revision**

3

Final approval of the version to be published

**Important for the author to read the entire manuscript**

4

Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

**Each author is accountable for the work and should have confidence in the integrity of other authors' contributions**

**Authors must meet all 4 criteria**

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# Common Authorship Issues

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Most common authorship issues addressed in GPP3 include:

- 1 Number of authors
- 2 Author Sequence
- 3 Addition or removal of authors
- 4 Death or incapacity of an author
- 5 Change of affiliation
- 6 Company or sponsor-employed authors
- 7 Professional writers as authors

AMWA's 75th Annual Conference





# Good publication practice

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- Read “Guidelines on good publication practice” from the Committee on Publication Ethics (COPE)
- Available free at [www.publicationethics.org.uk](http://www.publicationethics.org.uk)





# Writing the Scientific Abstract





# The Abstract

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- The abstract should be the best part of the paper!
- It is the most frequently read part of an article after the title.





# Purposes of the Abstract

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- Provides an overview of the article (readers may read nothing else)
- Helps reader decide whether to read the article (i.e. is this important to me?)
- Provides context for those who do read the article
- Used by journals to assign reviewers
- Used by abstracting and information services to index and retrieve articles
- Used by translation services for foreign readers





# Characteristics of the Abstract

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- Accurate, coherent, and readable
- Concise, specific, and selective
- Self-contained, ie, stand alone
- Complete and internally consistent
- No references
- No tables or figures
- No or few abbreviations (must be defined)
- Conclusions should be based on data/info presented within the abstract





# What Abstracts Are NOT

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- Not substitutes for the article and should not be cited as references
- Not a summary of the entire article; should present main finding
- Do not contain enough information for a critical evaluation of the research
- Not fully peer-reviewed; up to 60% are never followed by a complete scientific article





# Content of an Abstract

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- Define purpose and scope of study, ie, the question  
Introduction
- Describe materials and methods used  
Materials and Methods
- Summarize the results  
Results
- State the conclusions and their implications  
Discussion





# The Writing Process

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- Read paper carefully
- Mark key words and sentences (look for the why, how, what and so what)
- List all marked material
- Edit to condense
- Refine to reflect desired style





# Types of Abstracts

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- Descriptive abstracts
- Indicative abstracts (review articles)
- Informative abstracts (results papers)
- Structured abstracts
- Presentation, meeting, poster abstracts





# Descriptive Abstracts

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- Indicate the scope of the findings
- Contain little substantive information
- Emphasize the report itself, not its contents
- Called “pap” abstracts  
“A study was undertaken, the data were accumulated, and some interesting observations were made. Our conclusions are given.”





# Descriptive Abstracts- example

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This report describes a brief, 15-session couples group therapy format developed by a university-affiliated human sexuality clinic for the simultaneous treatment of marital and sexual dysfunctions. The major marital and sexual themes addressed in this group treatment design, an overview and description of the structure of the cognitive-behavioral approach, and a case illustration are presented.





# Indicative Abstracts

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## **Abstracts of Review Articles**

- State objective of review
- Give succinct summary of the data sources
- Specify criteria used to select studies
- Describe guidelines used for abstracting data and assessing data quality
- State main results of review and methods used to obtain these results
- State conclusions and potential applications of the results





# Informative abstracts ( Results paper)

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- State briefly the content of the paper
- Follow the sequence of the article
  - Intro, Method, Results, Discussion
  - Also possibly Background, Conclusions, Implications
- Include the species or population, study design or experimental approach, and independent and dependent variables
- Represent each section of the paper by at least one sentence in the abstract

## Common Errors

- Inconsistency between text and abstract (~50%)
- Reporting data not present in the paper (~30%)
- Both (15%)





# Informative Abstracts

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Research Paper	Case Report
Study design	Patient
Experimental subjects	Unusual features of the case
Methods	
Results	
Interpretation	





# Structured Abstracts

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- Also called “more informative” abstracts
- Purposes:
  - Help readers quickly judge the findings of a study
  - Guide authors into better summaries
  - Aid reviewers
  - Facilitate electronic searches (eg, MEDLINE)
- Include headings
- May use incomplete sentences
- Follow journal requirements





# Preparing Poster Presentations





# Why Posters?

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- An opportunity to effectively share research results and engage in scientific dialog with colleagues
- Good posters can attract attention of peer researchers during conferences. Act as a conversation starter - they engage people in discussion about your work.
- Posters act as a medium to advertise your work;
- They enable you to summarise your work – and to get your main points across to a larger audience
- Feedback received can help in refining your research and preparing it for publication





# Thinking about your poster

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- Key questions need to be answered before you get to the design stage.
- These are:
  - Who is your audience?
    - Professionals, academics, the general public – the language used and messages given out need to meet the needs of your audience
  - What is your hook?
    - Catchy titles provide the feature that may draw your audience in to peruse your poster. Is the message clearly stated and will it capture the attention of your audience?
  - What is the purpose of your poster?
    - Consider what messages you wish to communicate and the audience receiving the messages. Remember you need to present a coherent snapshot of your research
  - What are the guidelines for your poster?
    - Refer to your brief
  - What is your message?
    - Effective posters deliver clear messages, content is highly visual





# Planning your poster

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- An effective poster should have following features:
  - Legible from a distance of about six feet away,
  - Use a title that captures the attention of audience, and is readable from about 15 - 20 feet away.
  - Have enough 'white' space which aids readability,
- Use of bullets, numbering, and headlines make it easy to read
- Effective use of graphics, colour and fonts
- Consider using original/owned photos or source photos which are “royalty free” to avoid any potential copyright issues
- Consistent and clean layout
- Includes acknowledgments, name and institutional affiliation





# Things to think about

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- People read posters from left to right and top to bottom – consider your layout – portrait/landscape. Be guided by your conference brief
- Using too much jargon may confuse your audience, unless they are specialists in your field and already know the jargon
- What message will readers take home with them? – what will they remember about your work?
- Colour schemes – think about the tones and hues, avoid large swathes of garish colours
- Word count – a typical poster will have between 300 – 500 words, audience dependent (Anon, n. d)





## Cont'd...

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- Font – Avoid using more than two different fonts. Choose a font such as Arial
- Use a good balance of text, pictures, charts and graphics. The text should support your images and vice versa
- The size of your poster and the orientation you will use
- Line spacing and text justification – left justification maybe easier to read





## Cont'd...

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- Getting it printed – matt/glossy to laminate or not to laminate – a matt finish reduces glare. Laminated posters travel better so this might be worth considering – refer to conference brief
- At the printers -When arranging to get your poster printed it might be useful to find out if they print use RGB (red green and black) or CMYK (cyan magenta (purplish pink) yellow black – four colour printing) as this can affect your final print version of your poster. e.g. purple may appear as more of a pink hue than true purple
- Most PCs are set to RGB as default – custom colours





# Design tips

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- Plan your poster – preparation is key
  - Consider using a sheet of flipchart paper during preliminary planning.
- Do not clutter the poster
- Be creative and proofread





## Design tips (contd)

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- Think outside of the box – what images best capture the messages you are attempting to give out?
- Use arrows, number, boxes, headings to guide readers through your poster
- Do not forget to include you title, names, supervisor details (if relevant), company logo (where necessary/relevant) any other affiliations and possibly your email address. Ideally, you want people to be able to contact you about your research





## Cont'd...

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- What to include?
- Think about - 'Introduction', 'Methods', 'Results' and 'Conclusions', 'References'. Be guided by your conference brief
- Use indents, justification and a variety of formatting to highlight your main points e.g. bold titles
- Identify the most innovative, exciting and relevant aspects of your work to present in your poster





# What software can I use to make a poster?

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- PowerPoint: A popular, easy-to-use option. It is part of Microsoft Office package
- Adobe Illustrator, Photoshop and InDesign: Feature-rich professional software that is good for posters including lots of high-resolution images, but they are more complex and expensive.
- Open Source Alternatives: OpenOffice is the free alternative to MS Office (Impress is its PowerPoint alternative). Inkscape and Gimp are alternatives to Adobe products. For charts and diagrams try Gliffy or Lovely Charts.





# Choose the right kind of chart

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Chart type	Best use
Bar charts	Show comparisons
Horizontal bars	Only used to show time
Line charts	Illustrate trends
Pie charts	Relationship to whole – big picture (%)
Text	The last resort





# Graphics and Resolution Tips

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- Print formats: 600-1200 DPI (dots per inch)
  - TIFF, EPS, WMF, JPG?
- Screen formats: 72 DPI (dots per inch)
  - GIF, JPG, WMF
- Scan new color graphics at 150-200 DPI
  - Higher for black and white





# Some Sample Templates





# Title

Presenter details and affiliations

Introduction



Method



Image/table/graphic

Results



Image

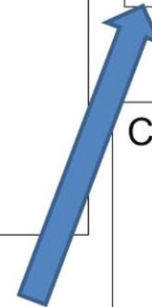
Image



Conclusion



References





This is the Title of Your Presentation

Your Name, Title, Affiliation

### Introduction and Objectives

Lay in your introduction

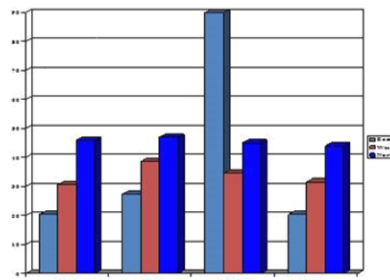
x  
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x

### Population Studied

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x  
x  
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x  
x  
x

### Methodology

x



### Study conclusions and ideas for new research

x

x

### Discussions

xxxxx

### Funding Source




# Good poster

## Tips for Designing Effective Presentations

*A poster with the main title in 1 1/2" sans serif*

*Developed by D. Shong, C. Dwyer, W. Kathy, B. Immesel, and K. Wende  
with materials donated by Penn State's Education Technology Services*

### Get the audience's attention and communicate your message quickly and succinctly.



Complete your design quickly. This is a picture of the design studio, representing students working with a designer, who is happy and fun to design it.

### Using Images

Use meaningful, high-quality images. Images make your message more engaging. They are also helpful in the design of the poster.

Use photos, illustrations, or graphics. Label directly on images, charts, and graphs.

Use bold text to highlight the key message. The bold text is placed on the left side of the poster and is placed on the right side of the poster.

Place images so that they are placed in the center of the poster and are easy to read. The images are placed in the center of the poster and are easy to read.

### Judges Checklist

Remember, the following should be clearly presented and readable from a distance of 10 to 15 feet.

1. Title of the poster
2. Author(s) name
3. Institution, address, and telephone
4. Funding source
5. Significant information about the project (e.g., the project's purpose, the project's goals, the project's objectives)
6. Significance to the field
7. Significance to society in general
8. Abstract
9. Results
10. Implications of results and conclusions
11. Acknowledgments
12. References for future research

### Choosing and Using Color

Remember, use color wisely. Use color to highlight the key message. Use color to highlight the key message. Use color to highlight the key message.

Use color to highlight the key message. Use color to highlight the key message. Use color to highlight the key message.

### Developing a Layout

The design process begins with the layout. The design process begins with the layout. The design process begins with the layout.

Use a color palette. Use a color palette. Use a color palette.

### Selecting Fonts and Using Text

The design process begins with the layout. The design process begins with the layout. The design process begins with the layout.

Use a color palette. Use a color palette. Use a color palette.

### Planning

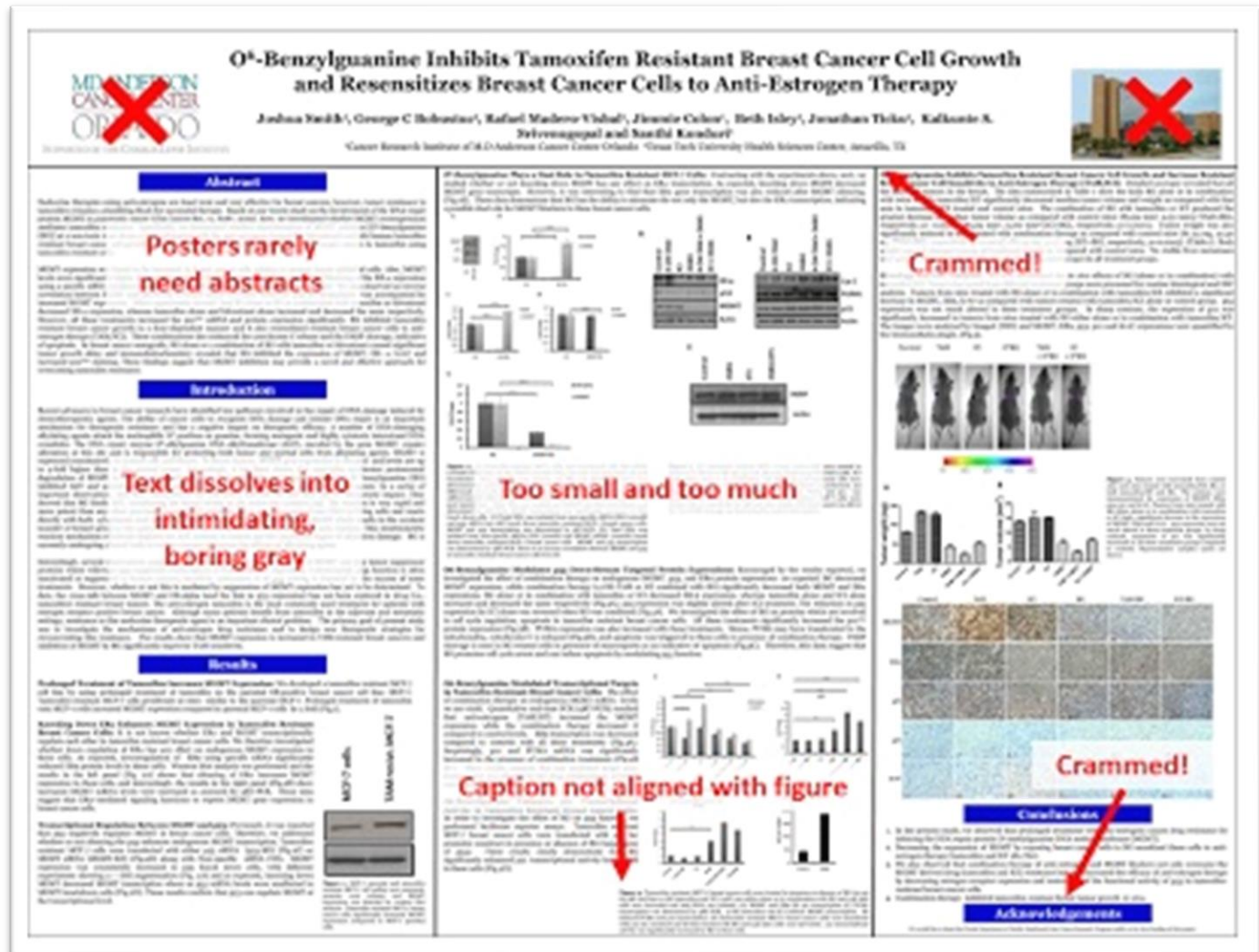
Easy to design. Easy to design. Easy to design.

### Viewers reading this line demonstrate the poster's success!





# Poor poster





# Presenting the Poster

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- Use the poster as a visual aid
  - Refrain from reading it
- Use the graphics to support your points when telling your story
- Prepare a 2 and 5 minute tour of the poster

