

Preparing An Effective Scientific Poster

UMBC COLLEGE OF NATURAL AND MATHEMATICAL SCIENCES

JULY 2015

ANDREA MILLER

STEM PROGRAM COORDINATOR



Why scientific posters?

“Criticism and testing are of the essence of our work. This means that science is a fundamentally social activity, which implies that it depends on good communication.”

-Hermann Bondi¹

¹Quoted by Robert A. Day in How to Write & Publish a Scientific Paper. The Oryx Press (1998) p. ix.

Why give scientific posters?

- To serve as a basis for communication with researchers and the public
- To convey findings in scientific research
- To share ideas with colleagues
- To serve as an alternative to longer oral presentations
- To learn how to organize and effectively present research data

Steps to a Poster Session

- 1. Conduct Research**
- 2. Write & Revise Abstract**
- 3. Review Abstract (by Mentor)**
- 4. Submit Abstract**
- 5. Prepare Presentation**
- 6. Present Research**

Steps to a Poster Session

- 1. Conduct Research**
- 2. Write & Revise Abstract**
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- 4. Submit Abstract**
- 5. Prepare Presentation**
- 6. Present Research**

RESEARCH

Steps to a Poster Session

1. Conduct Research

2. Write & Revise Abstract

3. Review Abstract (by Mentor)

4. Submit Abstract

5. Prepare Presentation

6. Present Research

ABSTRACT

ABSTRACTS

Many presentation venues require presenters to submit abstracts as part of the registration process.

LENGTH: 300 words or less

SUGGESTED CONTENT:

Abstracts may differ by discipline but typically includes:

- Background
- Research question/problem
- Approach and experiments
- Conclusion

ABSTRACT TEMPLATE

TITLE OF THE STUDENT PRESENTATION
PresenterFirstName PresenterLastName¹, Other contributing authors such as graduate students¹,
MentorFirstName MentorLastName²
¹Department of XXX, InstitutionName1, StreetAddress, City, State ZIPCODE
²Department of XYZ, InstitutionName2, StreetAddress, City, State ZIPCODE

This document is an abstract template for the Annual CNMS Summer Undergraduate Research Fest at UMBC. All of the specific formatting requirements for abstracts are provided online at <http://surf.umbc.edu>. The entire abstract should fit on one page with one-inch margins on all four sides and use 12-point Times New Roman font. The presenting author's name (student) should be underlined. The presenting undergraduate author should be the first author and the research mentor should be the last author. Any coauthors should be included between the first and last authors. Affiliations should be included for all authors/coauthors and noted using superscript numbers.

The text of the abstract goes in this section. Each paragraph is indented with a tab. There is a 300-word maximum for the body of the abstract. Abstracts that do not following this format, specifically the word count limit or formatting of the authors' names and affiliations, will be returned to the student for rewriting. The suggested content includes background, the research question, approach, experiments, and conclusion. The abstract generally does not include figures or the data to be displayed in the poster. Please check all spelling and grammar.

All abstracts must be reviewed and approved by the student's research mentor or by an individual authorized by the mentor to review and approve the abstract. Mentors must confirm they have reviewed and approved the abstract with the understanding that the abstract will appear in an event program book and may be posted online. An online abstraction confirmation form is provided for this confirmation. The submission deadline for abstracts is posted on the Summer Undergraduate Research Fest website. Abstracts must be submitted using the online abstract submission form. Specific instructions are posted on the SURF website. This template's word count is 300 words not including the title, authors or notations below.

Notes:

One-sheet posters are required to be no wider than 36 inches and no longer than 42 inches to ensure that two posters can fit side-by-side on a campus poster display unit. Multiple panel posters are acceptable and should take up no more space than a 36" wide and 42" long poster.

Please include the grant or other support information for your undergraduate research on a separate line at the end of your abstract, if appropriate. This acknowledgement should also be included on your poster. The word count of the acknowledgement is not included in the 300-word maximum for the abstract. If you have any questions about the acknowledgement, please check with the coordinator or director of the program that is sponsoring you. If you are not affiliated with a program, please ask your research mentor what acknowledgement information is needed.

If you have any questions, send them to SURF@umbc.edu.

Title, Authors & Affiliations

Body of the Abstract:

background, research question, approach and experiments, and conclusion

Acknowledgment Statement:

specifically recognize funding support of the research project. Program coordinators, directors and/or research mentors can provide this information

ABSTRACT FORMATTING

File Type	Abstracts must be generated in MS Word (.doc or .docx).
File Name	Please title the abstract file as follows, the presenter's entire last name, followed by the first initial of their first name plus the word "Abstract". Example: "SmithJAbstract.doc"
Page Format	8.5" x 11" page with 1-inch margins and 12-point Times New Roman font.
Page Limit	1 page for complete abstract.
Title	The abstract title should be in all CAPITAL letters
Authors	The presenting author's name (student) should be underlined. The presenting undergraduate author should be first author and the research mentor should be the last author. Any coauthors should be included between the first and last authors. Affiliations should be included for all authors/coauthors and noted using superscript numbers.

ABSTRACT FORMATTING

Affiliations

Provide the affiliation for each author. Use superscript numbers to identify which author is associated with the listed affiliations. An author may have more than one affiliation.

The format for affiliations should be as follows: Department of XXX, PresenterInstitutionName, StreetAddress, City, State (abbreviation) ZIPCODE. Example: Department of Biological Sciences, UMBC, 1000 Hilltop Circle, Baltimore, MD 21250

Body of Abstract

Maximum word count is 300.

(Title, authors, affiliations and acknowledgement statement are not included in word limit). Paragraphs must be indented using a tab.

Acknowledgement Statement

This should specifically recognize funding support of the research project. Program coordinators, directors and/or research mentors can provide this information.

ABSTRACT SUBMISSION

All abstracts must be reviewed and approved by each student's research mentor or by an individual authorized by the mentor to review and approve the abstract.

The mentors must confirm in writing that have reviewed and approved the abstract with the understanding that the abstract will appear in an event program book and may be posted online. **[ONLINE FORM]**

Program officials must review and submit the abstracts of students in their programs

DEADLINE FOR ABSTRACT SUBMISSION

5 p.m. EST, Wednesday, July 22, 2015

ABSTRACTS TAKE TIME....

Students should submit their abstracts to their research mentors so there is sufficient time to edit the abstract.



Talk about this **now** so that you know what deadline to use for your mentor's review of your work to ensure you meet the **SURF abstract submission deadline:**

5 p.m. EST, July 22, 2015

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4. Submit Abstract
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6. Present Research

**CREATE / DESIGN
POSTER**

Effective posters share the following traits:

- Viewer-friendly style with large (not small) typeface & informative subheadings
- Small offerings of information vs. long paragraphs of text
- Logical and orderly progression of presentation of information
- Summary statement(s) of key aspects
- Easily understood language with no jargon or undefined acronyms

ELEMENTS OF A POSTER

Title

Author & Affiliations

Introduction

Background

Statement of the research problem

Formula(s) - it is best to use figures when possible

Data/Results and Analysis

Conclusions

References

Acknowledgments



TITLE: think big

Title

Author & Affiliations

Introduction

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Data/Results and Analysis

Conclusions

References

Acknowledgments

The Title of a Poster is the First Thing a Visitor Sees

The goal is to be professional and attract visitors to your poster.

Can you read the title from 15-20 feet away?

AUTHORS

Title

Author & Affiliations

Introduction

Background

Statement of the research problem

Formula(s) - it is best to use figures when possible

Data/Results and Analysis

Conclusions

References

Acknowledgments

Authors:

Researchers who worked on the project.
Primary Investigator.

Affiliations:

Follow the guidelines provided for the abstract submission.

The format for affiliations should be as follows: Department of XXX, PresenterInstitutionName, StreetAddress, City, State (abbreviation) ZIPCODE. Example: Department of Biological Sciences, UMBC, 1000 Hilltop Circle, Baltimore, MD 21250

POSTER CONTENT: KNOW YOUR AUDIENCE

Title

Author & Affiliations

Introduction

Background

**Statement of the research
problem**

**Formula(s) - it is best to
use figures when possible**

Data/Results and Analysis

Conclusions

References

Acknowledgments

For SURF, we suggest making the poster presentation understandable to educated laypersons



POSTER CONTENT: IMAGES v TEXT

Title

Author & Affiliations

Introduction

Background

Statement of the research problem

Formula(s) - it is best to use figures when possible

Data/Results and Analysis

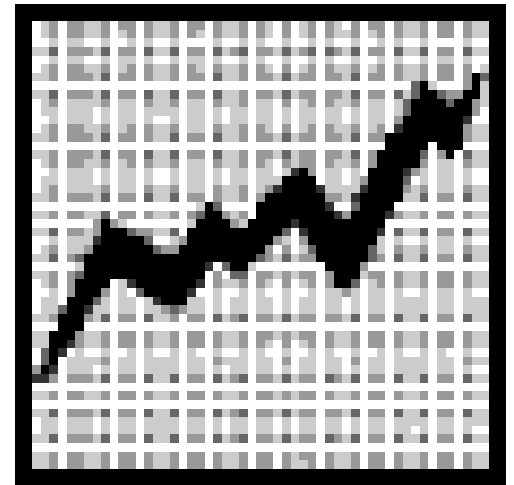
Conclusions

References

Acknowledgments

- Minimize Text
- Maximize Illustrations and Cartoons

(Hint: A poster is not a research paper.)



POSTER CONTENT: TAKE HOME MESSAGE

Title

Author & Affiliations

Introduction

Background

Statement of the research problem

Formula(s) - it is best to use figures when possible

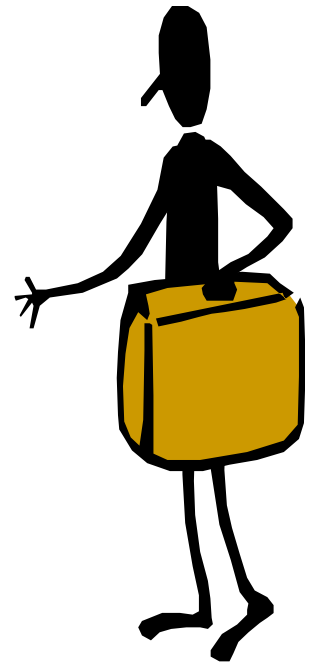
Data/Results and Analysis

Conclusions

References

Acknowledgments

- Include the one main point you would like a visitor to remember about your research.



POSTER CONTENT: BE CONCISE

Title

Author & Affiliations

Introduction

Background

**Statement of the research
problem**

**Formula(s) - it is best to
use figures when possible**

Data/Results and Analysis

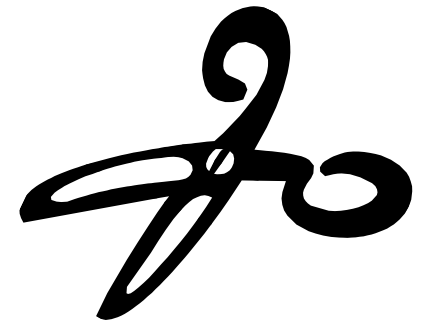
Conclusions

References

Acknowledgments

- Avoid long blocks of text
- Use small chunks of information

(Hint: Edit, Edit, Edit to get to the core messages of the poster.)



POSTER CONTENT: TECHNICAL TERMS

Title

Author & Affiliations

Introduction

Background

**Statement of the research
problem**

**Formula(s) - it is best to
use figures when possible**

Data/Results and Analysis

Conclusions

References

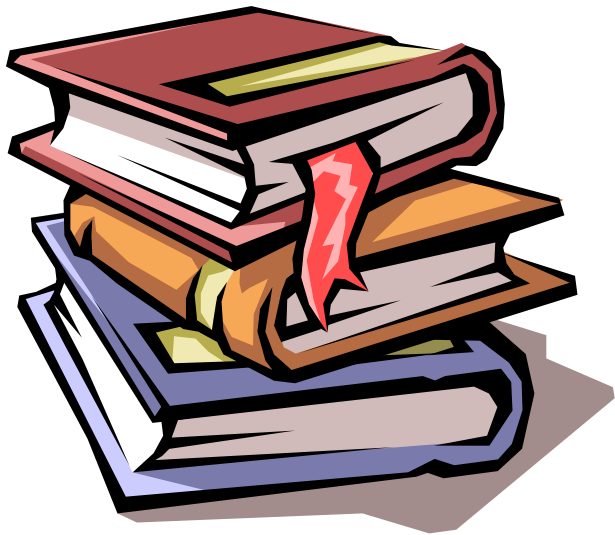
Acknowledgments

Define all technical terms
used throughout a poster

(Hint: An element listing these definitions
can be very helpful to visitors.)



Explain What??



jar ● gon –

“The specialized language of a trade, profession, or similar group²” ...

<computer jargon>²

ac ● ro ● nym –

“A word formed from the initial letters of a name³” ...

<WAC for Women’s Army Corps>³

² Webster’s II New College Dictionary, Houghton Mifflin Company. (1999) pg.592.

³ Ibid, p. 11

POSTER CONTENT: SUMMARY OF YOUR RESEARCH

Title

Author & Affiliations

Introduction

Background

Statement of the research
problem

Formula(s) - it is best to
use figures when possible

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Conclusions

References

Acknowledgments

- Include a summary of the poster's most important points
- Use bullets and/or boldface to emphasize important information



ACKNOWLEDGMENTS



Title

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Formula(s) - it is best to use figures when possible

Data/Results and Analysis

Conclusions

References

Acknowledgments

- Organizations and agencies that contributed to the project, especially through funding support and Individuals who contributed to the project

Often placed in the lower right section of a poster:

Acknowledgement:

This study was supported in part by the Howard Hughes Medical Institute program, the NIH/NIGMS MARC U*STAR T34 08663 National Research Service Award to UMBC and a National Eye Institute grant to P.R.R. (R01EY019053).

FROM CONTENT TO LAYOUT

Title

Author & Affiliations

Introduction

Background

Statement of the research problem

Formula(s) - it is best to use figures when possible

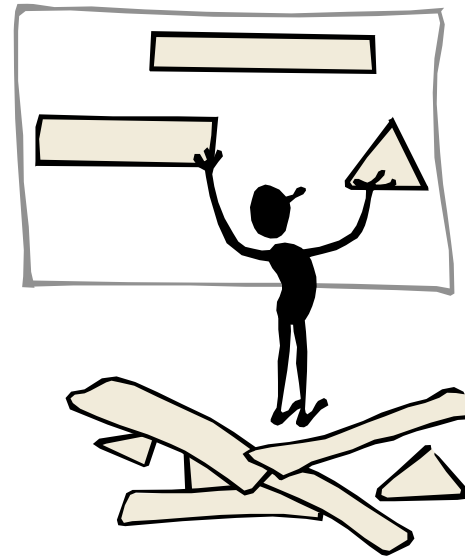
Data/Results and Analysis

Conclusions

References

Acknowledgments

Where does the information go on the poster?



What is the best format?



Various formats can be used successfully

There is no single “ideal” format for poster presentations

- **PROGRAM OPTIONS**

Microsoft PowerPoint®

LaTeX, can be helpful in creating a professional display

- **SIZE REQUIREMENTS**

Each event has different requirements.

- **SURF**

Maximum Size: 36” W x 42” L

Formats: one sheet posters or multiple panel posters

TEMPLATES available online surf.umbc.edu

POSTER LAYOUT

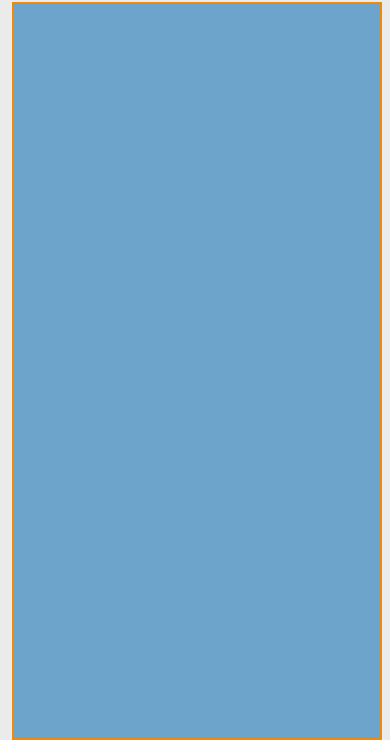
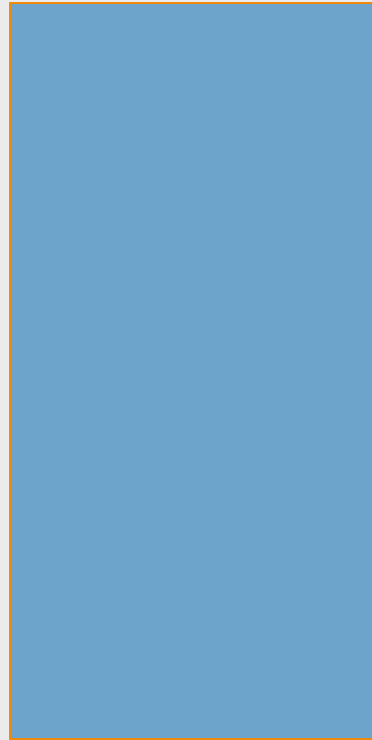
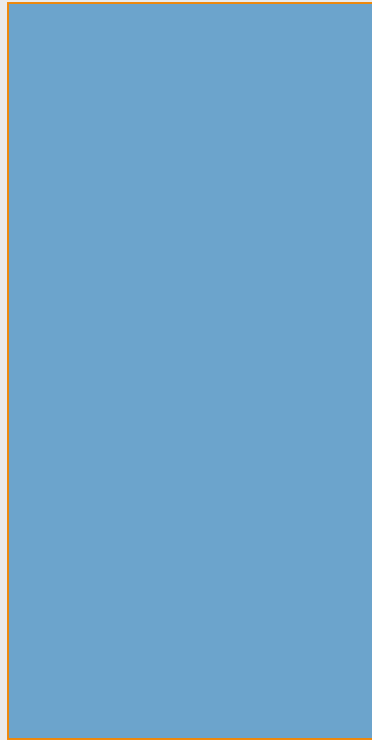
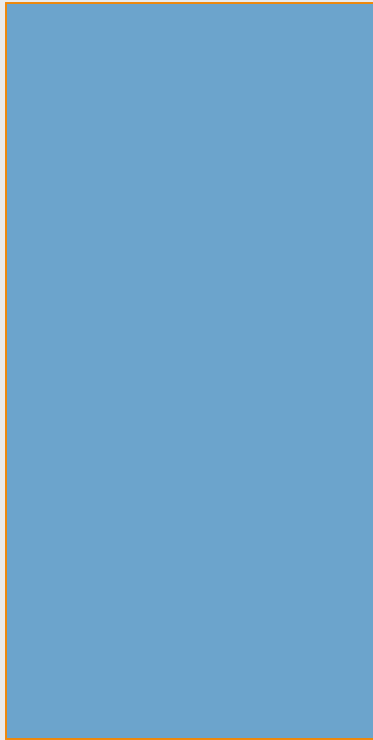
Know the size requirements for each poster

- 2015 SURF maximum poster size is 36” wide by 42” high or 92 cm w x 107 cm long
- Plan the layout of the elements
- It is not necessary to fill all of the space do not “clutter” your poster



Two Basic Poster Layouts

Vertical - sequential elements in columns



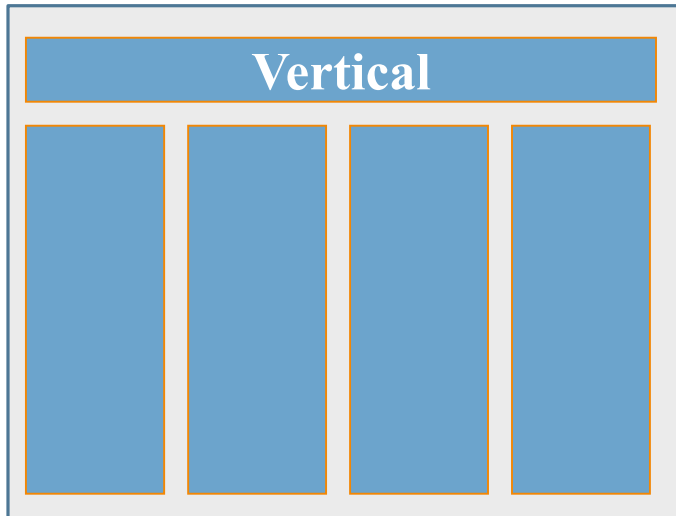
Two Basic Poster Layouts

Horizontal - sequential information in rows

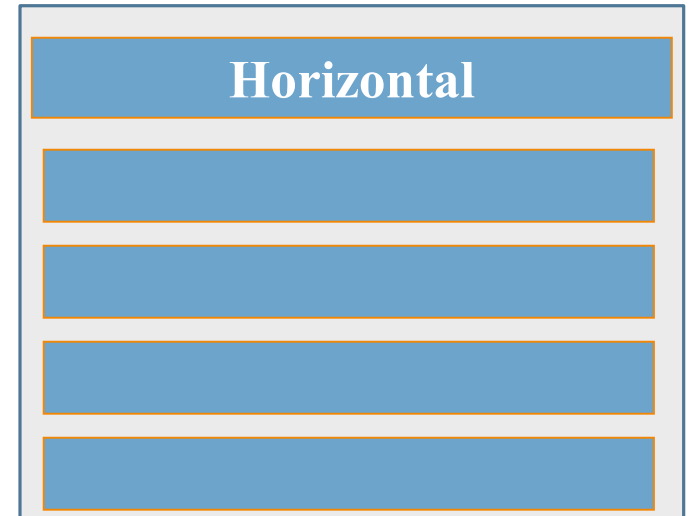


Two Basic Poster Layouts

Which layout
is best



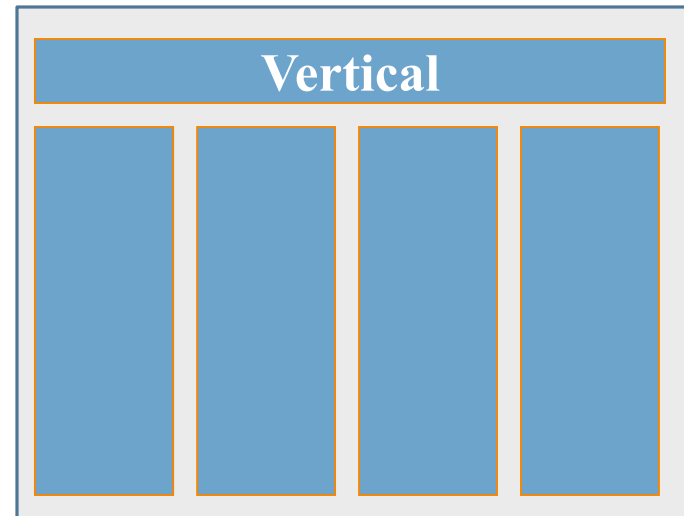
?



Poster Layout

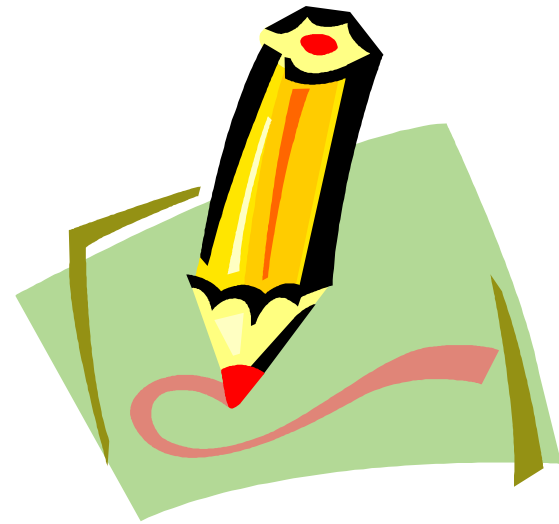
Vertical

When information is presented in columns, this layout enables the poster elements to be viewed in progression and helps to prevent traffic jams



Poster Layout

When the layout is finalized, consider sketching it on a piece of paper to use as a helpful reminder when creating the poster



FONTS and COLORS

TITLES:

90 pt for long titles; 100 pt for short titles

Typical Affiliation line:

65-70 pt

TEXT:

24-36 pt

TEXT COLORS:

Use normal, dark colors. No light colors.

BACKGROUND:

Avoid dark background colors - they waste ink, take much longer to print and dry, etc.

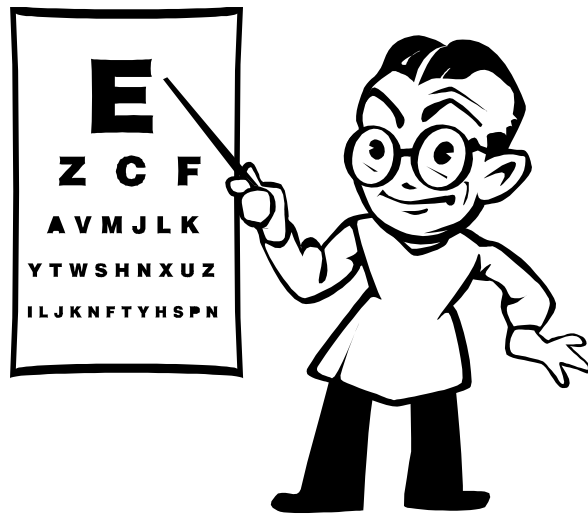
Title

Affiliation

Dark text on light
background

Light text on
dark background

MINIMUM FONT SIZE

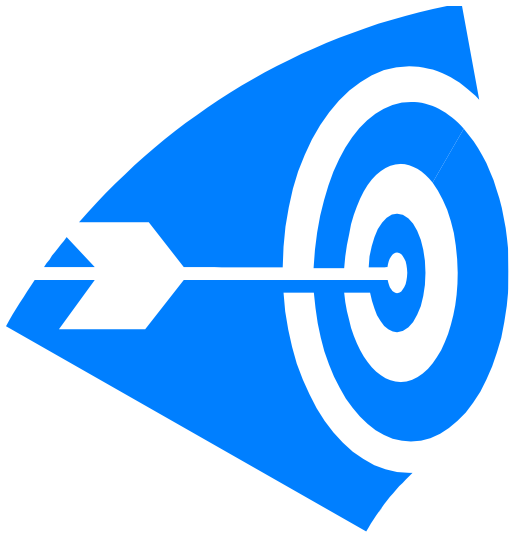


Use a
minimum
font size of

18

If it is too small, people will move to
next poster

POSTER LAYOUT



Helpful Hint:

The most important elements of a poster should be displayed at the viewer's eye level - which is often about one foot from the top of the poster board

POSTER TYPE

The maximum poster size for SURF is 36-inches wide by 42-inches high

MULTI-PANEL POSTER

Multiple components

8.5" x 11" sheets
color printer

Banner

Professional Printer
.pdf File
template available

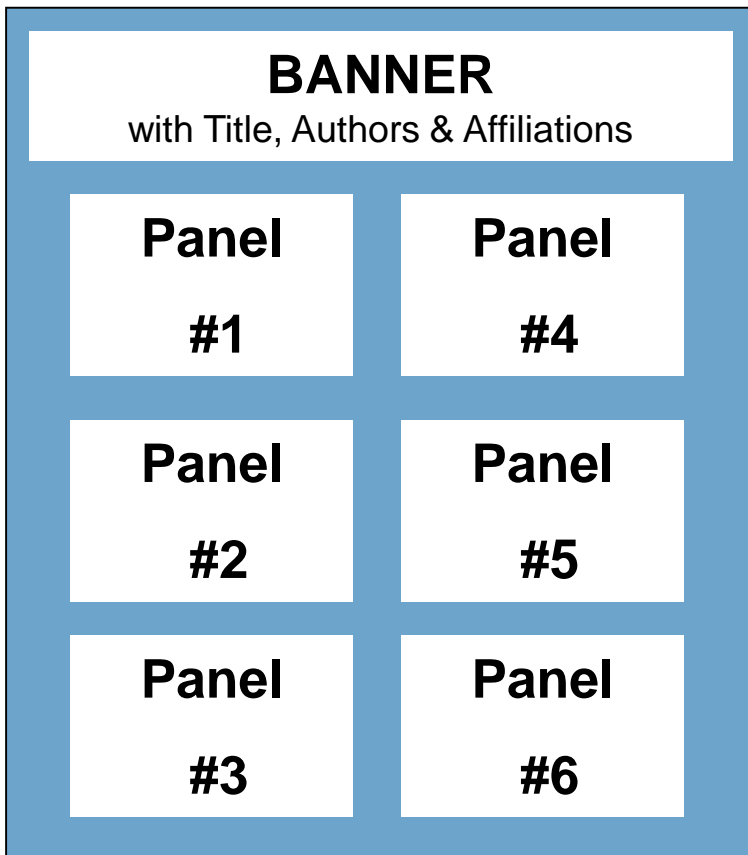
SINGLE PANEL POSTER

Traditional Format

.pdf File

Professional Printer

Tips for Effective Posters



For Multiple Panel Posters:

Mount each element on a piece of colored cardboard. Some presenters use page protectors, which guard against moisture and allow for quick revisions.

Consider having a 36" banner printed with your title information for your presentation. (Template online)

(Hint: Some presenters number the backs of the mounted elements in sequential order)

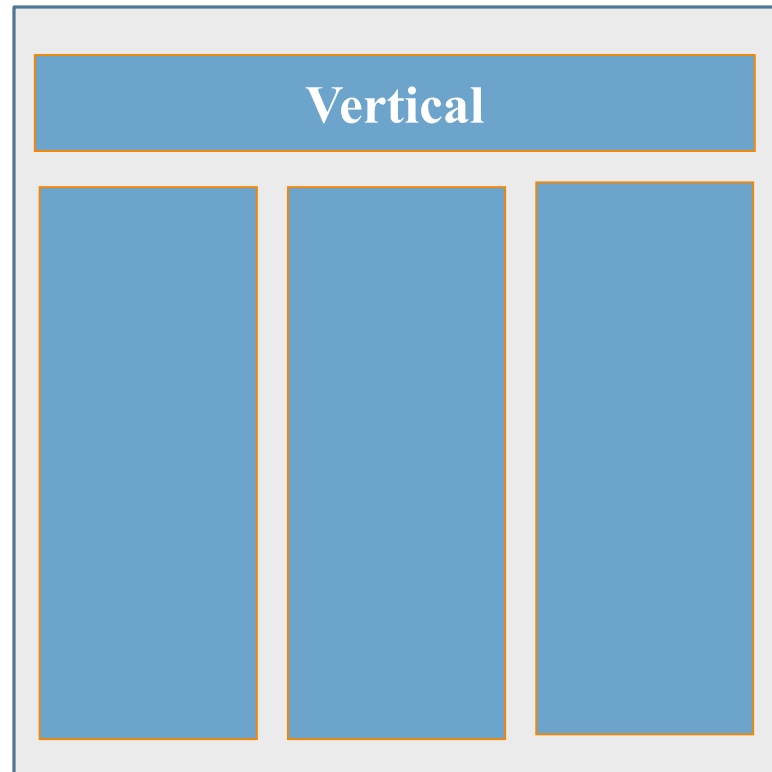
Note: The blue background in the diagram depicts the poster display board, where the panels are displayed

Tips for Effective Posters

For One Sheet Posters:

Use the 36" w x 42" h
template available on the
CNMS SURF website.

Sample Layout for One Sheet Poster



Tips for Effective Posters

Read over for errors and omissions

Use the check spelling features on your computer



POSTER PRINTING

There is no time to reprint posters – get it right the first time

ON CAMPUS PRINTING:

File Type: .PDF files

Text: Use dark, not light, colors

Background: Avoid dark colors

More Questions? Call Mr. Ford at x5-2257 for help.

UMBC Illustrative Services reserves the right to edit poster size and color

Important: If another shop or resource is used for poster printing, please be sure to check on the amount of time required to complete and pick up the finished product to avoid problems in getting the poster printed by Tuesday, August 4, 2015 in preparation for the Summer Undergraduate Research Fest on August 5, 2015.

Steps to a Poster Session

1. Conduct Research
2. Write & Revise Abstract
3. Review Abstract (by Mentor)
4. Submit Abstract
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6. Present Research

**PRACTICE YOUR
PRESENTATION**

Presenting the Poster

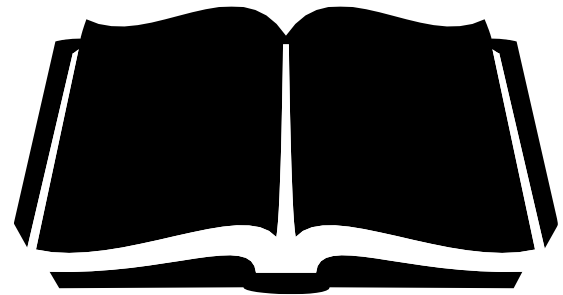
- Prepare a 10-30 second introduction to your research to engage visitors
- Explain why your research project matters, especially to the general population
- If there is interest, offer a quick tour of one-to-two minutes
- Remember to point to relevant poster elements during the quick tour
- Remember to emphasize your “take-home” message in a 30-second summary.

Getting Ready to Present

- Dress in business attire (no jeans)
- Chewing gum detracts from your presentation
- Plan to stand beside your poster during your entire scheduled session – don't block the view of your work
- Be aware of all visitors
- Relax and enjoy the opportunity to share your research project

Optional ...

- Business cards to offer to interested visitors
- Additional supporting data available in a booklet for visitor review
- Copies of the poster as handouts
- Email address with the title/author information



Steps to a Poster Session

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What to Expect at SURF

8:30 am

Poster Set-up & Presenter Check-in Begins

University Center Ballroom Lobby, 3rd Floor

9:00 am – 10:30 am

Introductions & Oral Presentations

10:30 am – 12:00 noon

Poster Presentations

10:30 am – 11:15 am – Poster Session I

11:15 am – 12:00 noon – Poster Session II

12:00 noon – 12:30 pm

Mentor Recognition and Closing

A good poster gives information with or without the presenter



Two types of posters...



One Visitor...



Or Many...



Take time to make eye contact with all visitors...to let them know that you look forward to talking with them, too



Important Notes

Participants will use the SURF website to register for the CNMS Summer Undergraduate Research Fest at UMBC BUT abstracts must be reviewed and submitted by their program coordinators by **the submission deadline of 5 p.m. EST , Wednesday, July 22, 2015.**

The deadline for submission of posters for printing by UMBC Illustrative Services (Mr. Tim Ford) is **9:00 a.m. on Wednesday, July 29, 2015.**

Research Mentors, UMBC faculty and all guests are asked to use the website to register their planned attendance as soon as possible and by Monday, August 3, 2015

Important Notes

Eighteenth Annual UMBC Summer Undergraduate Research Fest

Date: Wednesday, August 5, 2015

Location: 3rd Floor of University Center, Ballroom

Website: surf.umbc.edu

Details and poster assignments will be posted on the SURF website closer to the event.

Finally



The Internet offers a treasure trove of information about creating effective scientific posters

Seek advice from your research mentor and members of your research group as your poster reflects their work

Practice giving your poster presentation with colleagues

Remember, it is essential for you to ask and receive permission in advance from your mentor for any and all additional presentations of your summer research. This is critical!