

# Preparing An Effective Scientific Poster

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UMBC COLLEGE OF NATURAL AND MATHEMATICAL SCIENCES



# Why scientific posters?

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“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 Bondi<sup>1</sup>

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

# Why give scientific posters?

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- 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

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- 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

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**RESEARCH**

# Steps to a Poster Session

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**ABSTRACT**

# ABSTRACTS

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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

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TITLE OF THE STUDENT PRESENTATION  
PresenterFirstName PresenterLastName<sup>1</sup>, Other contributing authors such as graduate students<sup>1</sup>,  
MentorFirstName MentorLastName<sup>2</sup>  
<sup>1</sup>Department of XXX, InstitutionName1, StreetAddress, City, State ZIPCODE  
<sup>2</sup>Department 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](mailto: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

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<b>File Type</b>	Abstracts must be generated in MS Word (.doc or .docx).
<b>File Name</b>	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"
<b>Page Format</b>	8.5" x 11" page with 1-inch margins and 12-point Times New Roman font.
<b>Page Limit</b>	1 page for complete abstract.
<b>Title</b>	The abstract title should be in all CAPITAL letters
<b>Authors</b>	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

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## **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*

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## **Body of Abstract**

Maximum word count is 300.

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

---

## **acknowledgment Statement**

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

# ABSTRACT SUBMISSION

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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

**PAY ATTENTION TO THE ABSTRACT SUBMISSION DEADLINE - IT IS A GOOD IDEA TO SUBMIT BEFORE THE DEADLINE.**

# ABSTRACTS TAKE TIME....

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Students should show their abstracts to their research mentors first so there is sufficient time to edit the abstract before submission.



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.**

# Steps to a Poster Session

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1. Conduct Research
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6. Present Research

**CREATE / DESIGN  
POSTER**

# Effective posters share the following traits:

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- 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

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## Title

Author & Affiliations

Introduction

Background

Statement of the research problem

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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

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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

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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**

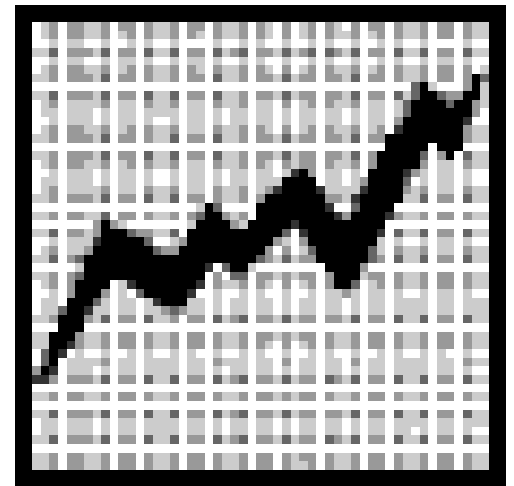
**Conclusions**

References

Acknowledgments

- Minimize Text
- Maximize Illustrations and Cartoons

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



# POSTER CONTENT: TAKE HOME MESSAGE

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Title

Author & Affiliations

**Introduction**

**Background**

**Statement of the research  
problem**

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

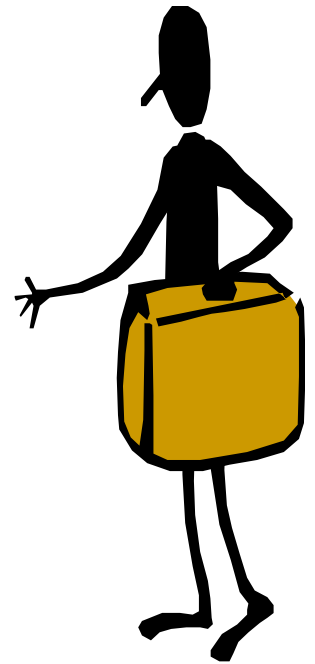
**Data/Results and Analysis**

**Conclusions**

References

Acknowledgments

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



# POSTER CONTENT: BE CONCISE

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Title

Author & Affiliations

**Introduction**

**Background**

**Statement of the research  
problem**

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

**Data/Results and Analysis**

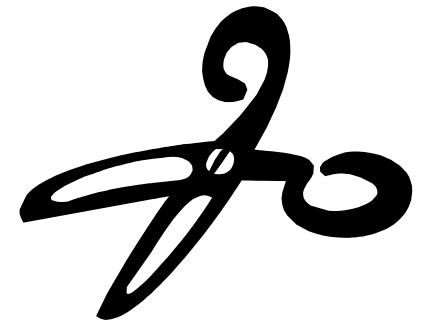
**Conclusions**

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

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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

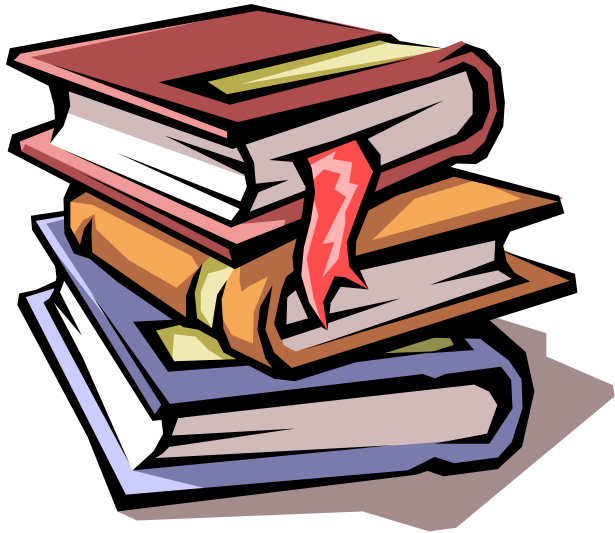
Define all technical terms  
used throughout a poster

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



# Explain What??

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jar ● gon –

“The specialized language of a trade, profession, or similar group<sup>2</sup>” ...

<computer jargon><sup>2</sup>

ac ● ro ● nym –

“A word formed from the initial letters of a name<sup>3</sup>” ...

<WAC for Women’s Army Corps><sup>3</sup>

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

<sup>3</sup> Ibid, p. 11

# POSTER CONTENT: SUMMARY OF YOUR RESEARCH

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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

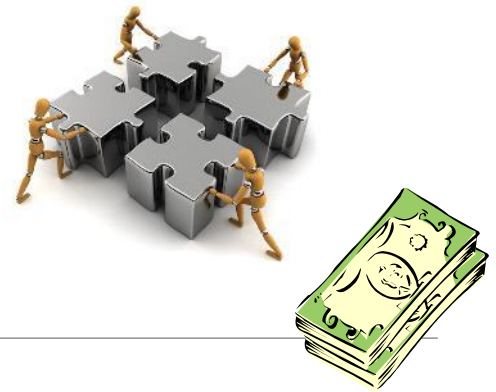
Acknowledgments

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





# ACKNOWLEDGMENTS



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**

- 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:

## **acknowledgment:**

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

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Title

Author & Affiliations

Introduction

Background

Statement of the research problem

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

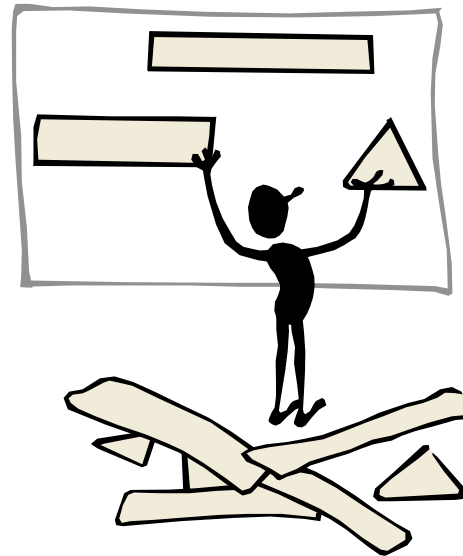
Data/Results and Analysis

Conclusions

References

Acknowledgments

## Where does the information go on the poster?



# What is the best format?

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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](http://surf.umbc.edu)

# POSTER LAYOUT

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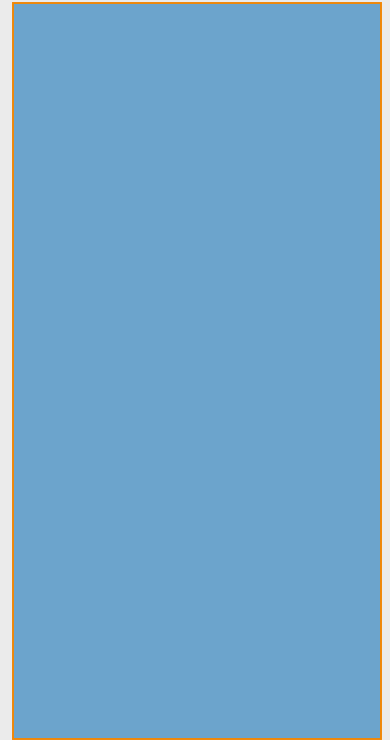
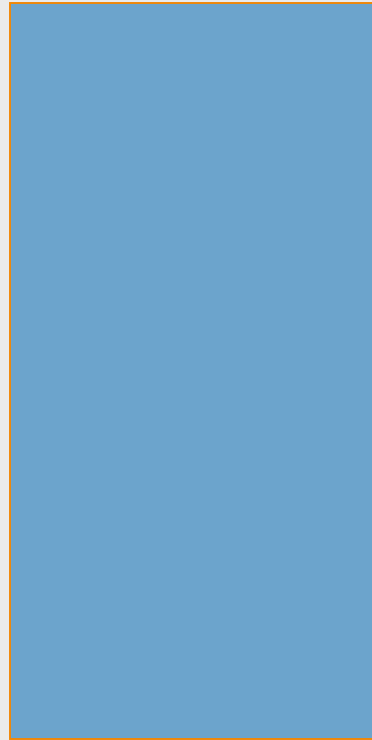
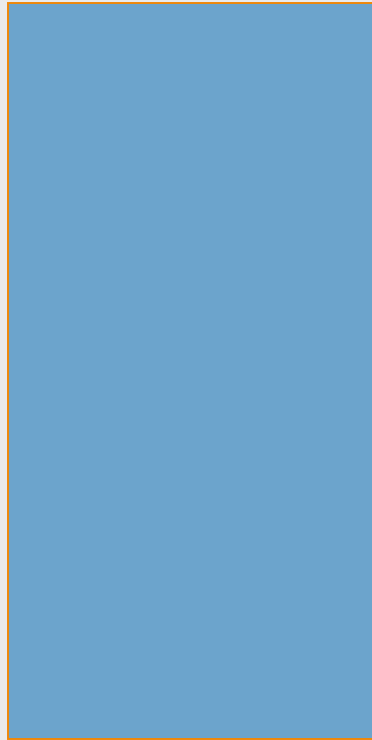
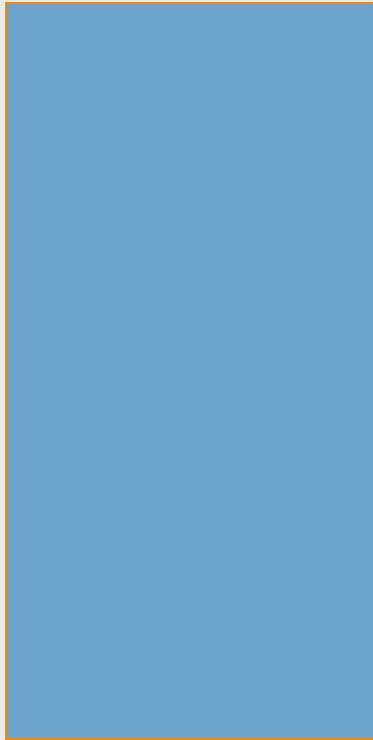
Know the size requirements for each poster

- 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



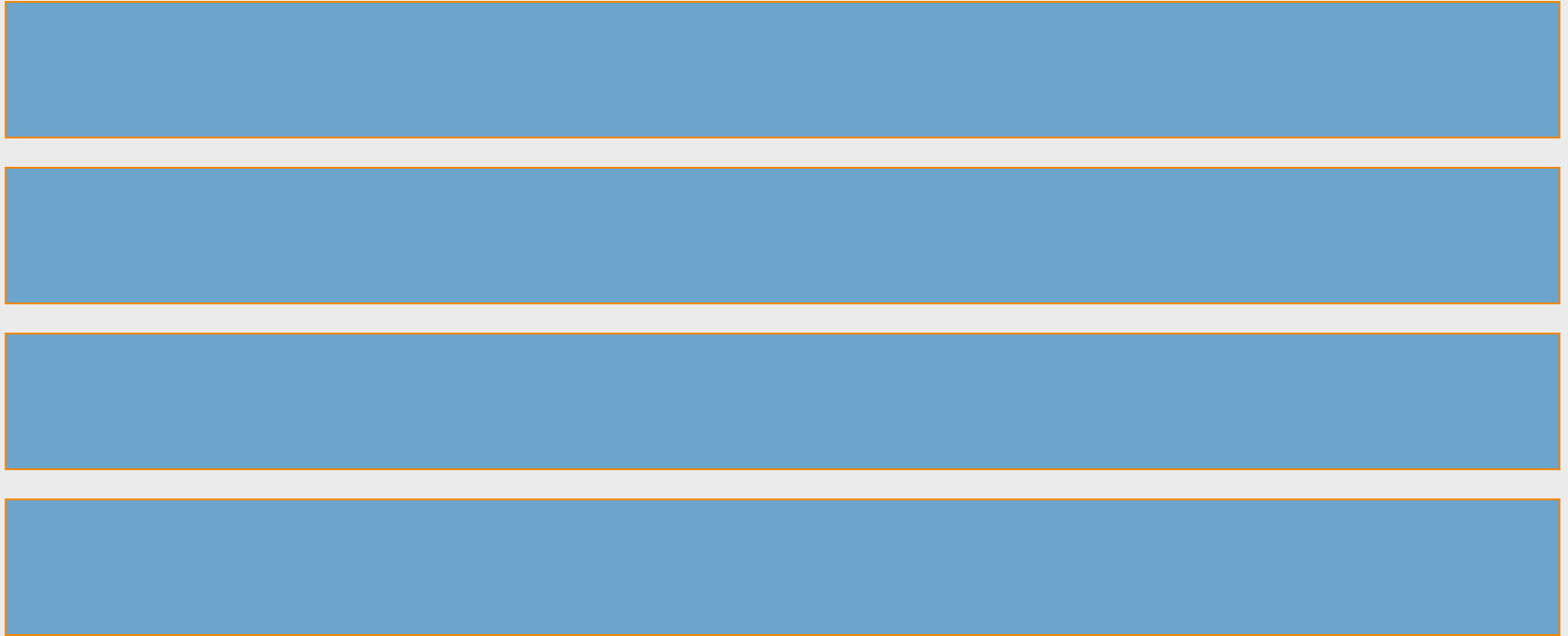
# Two Basic Poster Layouts

Vertical - sequential elements in columns



# Two Basic Poster Layouts

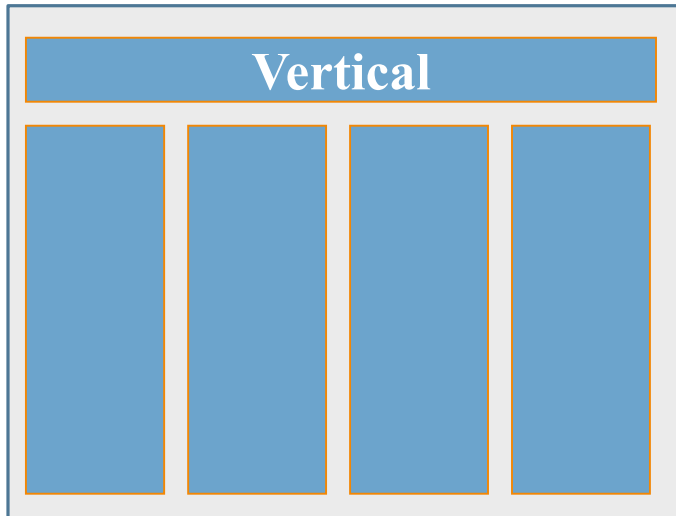
Horizontal - sequential information in rows



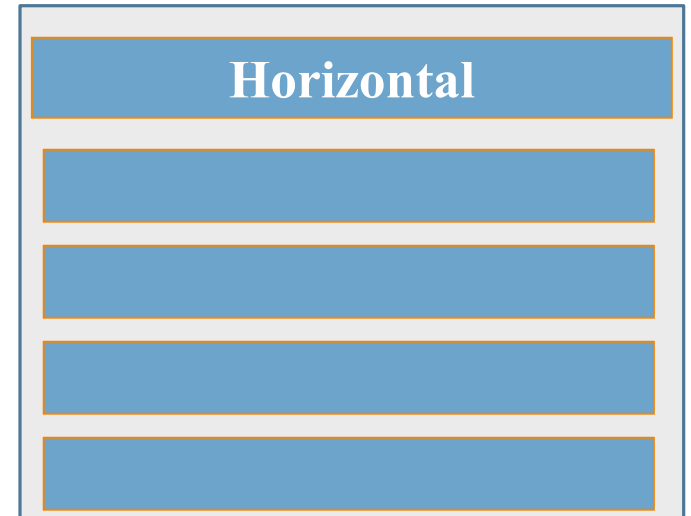
# Two Basic Poster Layouts

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Which layout  
is best



?

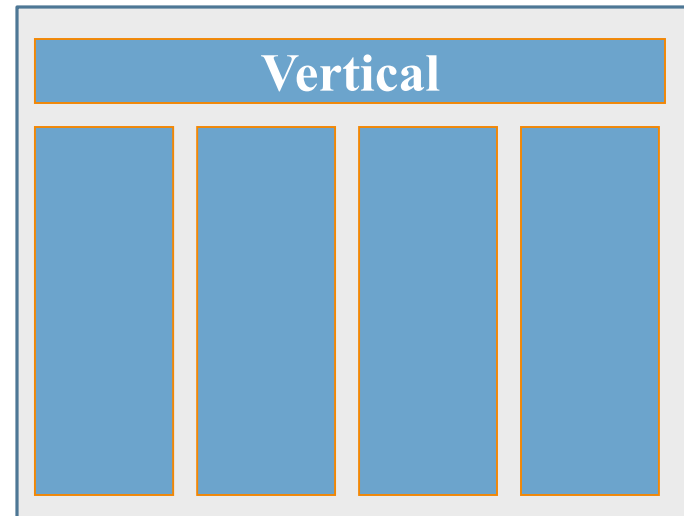


# Poster Layout

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## 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

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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

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**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

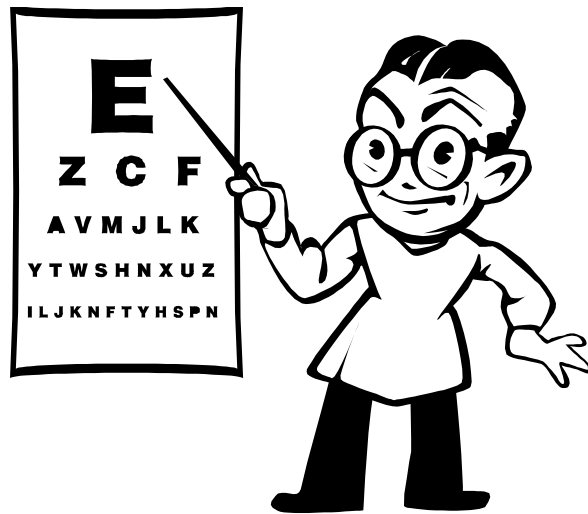
Affiliation

Dark text on light  
background

Light text on  
dark background

# MINIMUM FONT SIZE

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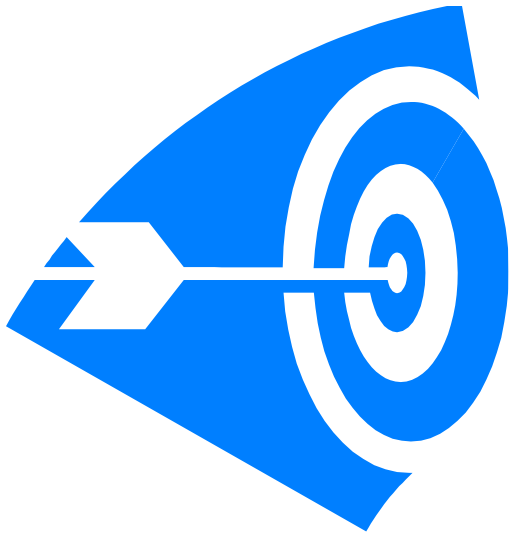
Use a  
minimum  
font size of

18

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

# POSTER LAYOUT

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## **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

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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

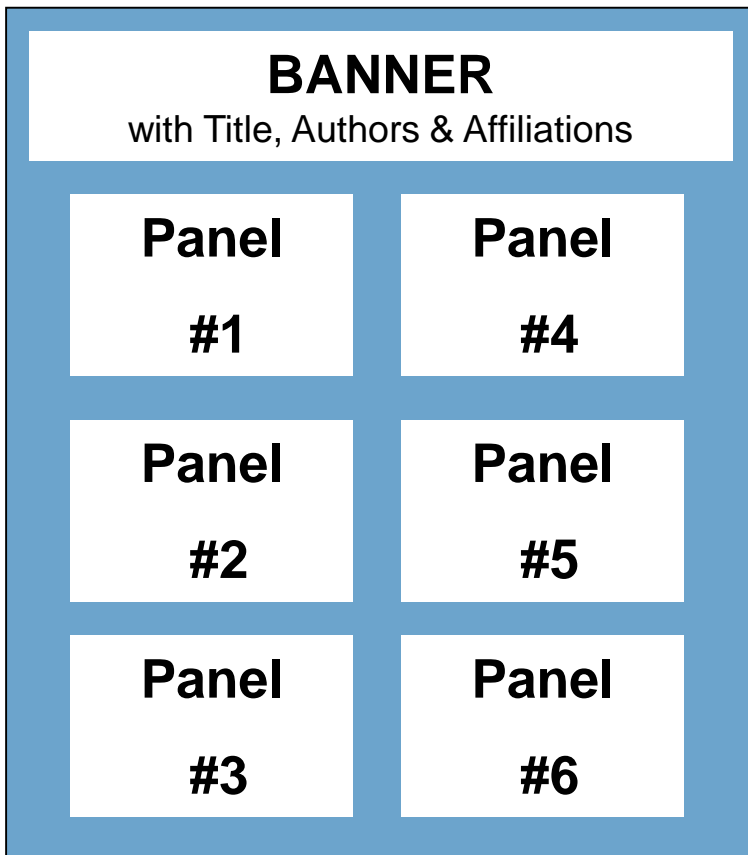
## SINGLE PANEL POSTER

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*

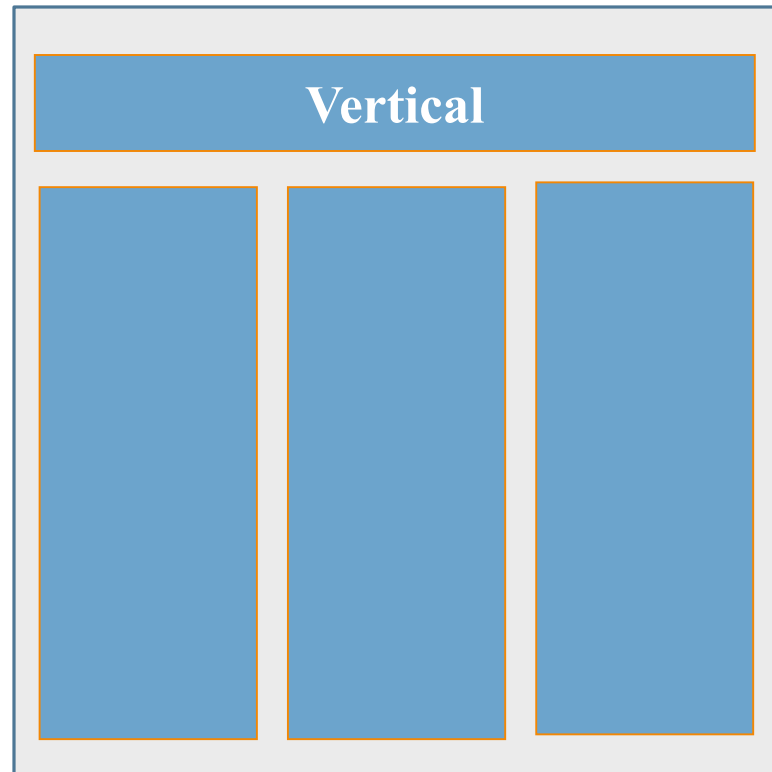
# Tips for Effective Posters

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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

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Read over your work for errors and omissions

Use the spell check feature on your computer





# POSTER PRINTING

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**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.

***CNMS Research Graphics 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. It is a good idea to pick it up at least a couple of days before the Summer Undergraduate Research Fest to avoid problems.

# Steps to a Poster Session

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1. Conduct Research
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**PRACTICE YOUR  
PRESENTATION**

# Presenting the Poster

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- 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

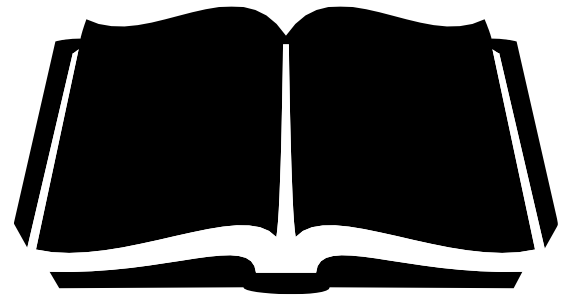
---

- Dress in business attire (no jeans)
- Please no chewing gum
- 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 ...

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- 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



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# What to Expect at SURF

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**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...





Make eye contact with all visitors...to let them know that you appreciate talking with them.



# Important Notes

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Participants will use the SURF website to register for the CNMS Summer Undergraduate Research Fest at UMBC. Abstracts must be reviewed and submitted **before the submission deadline.**

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Research Mentors, UMBC faculty and all guests are asked to use the website to register their planned attendance as soon as possible.

# Important Notes

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## **UMBC Summer Undergraduate Research Fest**

**Location:** 3<sup>rd</sup> Floor of University Center, Ballroom

**Free Parking:** Lot #22

**Website:** [surf.umbc.edu](http://surf.umbc.edu)

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

# Finally

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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!**