HOW TO: DEVELOP AND DELIVER A POSTER PRESENTATION

Tulane PRC/MCHLT Communication Seminar, in collaboration with I2PH

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Tulane Maternal & Child Health Leadership Training Program
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Why do we present?

- Get our ideas into the world
- Network and get feedback
- Share what works
- Contribute to body of evidence
- Practice communication
- Funding opportunities
Poster + You = Poster Presentation
What is your message?

• Before you start laying things out on the page, think about what message you want people to take away from your poster.
• Sum up the point of your poster in a sentence or two, and then use that to guide you through the rest of the process.
• Not everything has to be on the poster. That’s why you stand with it.
How can you support the guiding message of your poster?

- **Title**: What is a simple and intriguing way to say what your project is about?
- **Intro/background**: What basic things will the visitor need to know to understand your project? Give some context.
- **Materials and methods**: How was your project set up? Are there any visuals/photos that can help the visitor better understand or be more interested?
- **Results**: What happened? What figures and tables can help depict that? (Make sure to include captions, so the visitor can understand the depiction.)
• **Discussion**: What do your results mean?

• **Conclusions and significance**: What conclusions did you reach, based on your results? What is the significance of them? What might be future research in this area?

• **Other important stuff**: What literature did you cite? Who would you like to acknowledge for their help and/or funding?
How to emphasize your message

• Design for three audiences.
• Layout in column format.
• Use headers and fonts (without getting crazy) to guide visitors.
  – How is it organized?
  – What is important?
• Differentiate data, summaries and conclusions.
• Keep it simple.
• Use the graphics when you talk.
## Design for three audiences

<table>
<thead>
<tr>
<th>Rabid competitors</th>
<th>Workers in your general area</th>
<th>Workers outside your area</th>
</tr>
</thead>
<tbody>
<tr>
<td>not your main audience</td>
<td><strong>are your main audience</strong></td>
<td>are a “bonus” audience</td>
</tr>
<tr>
<td>will come regardless of how well or how badly you present your work.</td>
<td>They can be attracted to an accessible presentation.</td>
<td>They can be attracted by an accessible message.</td>
</tr>
<tr>
<td>do not require special efforts to attract.</td>
<td>They will know your general area and can provide valuable suggestions.</td>
<td>They can provide valuable insights and links to distant fields.</td>
</tr>
<tr>
<td>are therefore not your main audience.</td>
<td>They require that you supply context for your work.</td>
<td>They require you to explain the problem and the solution.</td>
</tr>
</tbody>
</table>
What to include
(not all will apply for every poster)

- Title
- Authors’ names
- Institution(s)
- Abstract
  - Introduction / Background
  - Significance / Context
- Methods
- Results
- Lessons learned
- Recommendations
- Conclusions and significance
- Literature cited
- Acknowledgments
- Direction to further information

- Photographs
- Figures/Tables
- Quotes
- Logos
Poster = Aid

Practice using your poster as an aid to:
• identify the big problem,
• explain why it is important, and
• tell what you did to answer it.

You should:
• Know your figures and graphics
• Make eye contact
You
Practice

• A 2-minute synopsis of your work
• A 5-minute talk
• Potential questions, including those asked mid-presentation
Your presentation

• Personal appearance
• Handouts
• Cards
• Demeanor
Nitty Gritty Details
Where to Print

• City Blueprint & Supply Co.
• APHA service - [www.research-posters.com/apha/](http://www.research-posters.com/apha/)
  - $154 for 48” x 72” poster ($90 for 36” x 54”)
  - Prices go up October 23
• FedEx Office or other similar store, including the one on the Uptown Campus
Size

• You will be creating a single large slide in PowerPoint. The boards at APHA are 6 feet wide by 4 feet tall. However, before you set your slide dimensions to 72 by 48 inches, check with the printer regarding the size of the paper available.
  • If planning to have handouts on 11 by 8.5 inch size paper, may want to adopt that scale and size the poster to 60.5” x 46.75” (or smaller, depending on printer specifications).
Construction

• Before adding any content to your slide, go to Design: Page Setup (or File: Page Setup) and change the height and width

• Once you have the proper size, you may begin adding content to your poster. You may do this by inserting textboxes, images, graphs, etc

• If you change the page size after you already have content, you will distort all of the objects on the page
Visual tips

• Posters with 800 words or less are ideal
• Use your white space
• Avoid titles with colons
• Format the title in “sentence case”
• Use a **non-serif font** for title and headings and a **serif font** for body text
• Larger font size and bolding are sufficient for indicating section headers
• *Italics* are preferable to **underlining**
• Left justification is easier to read than full justification
• Photographs should have a thin gray or black border to make them more visually appealing
Margins and Grid

• It is essential to leave at least a 1 inch margin around the edges of the poster
• Use gridlines to make sure that everything is appropriately aligned
  • View: Ruler, Gridlines, Guides
  • Or right-click and select Ruler and Grid and Guides
Background

- It is essential that the background of your slide uses light colors.
- To use a different color background from the default white, go to Design, then Background Styles, then Format Background (or right-click on your slide and choose Format Background.... In the color dropbox, select More Colors....)
- White is the center of the wheel. The best colors to use are the ones immediately around the white center. If you stray too far away from the center (i.e. more than two shades), your background will be too dark to print.
Fonts – Titles and Headers

- **Title**: font size 72-120 points (or ≥1 inch high)
- **Subtitles** (authors' names, school name, etc.): font size 48-80 points
- **Section headers** (Abstract, Introduction, Results, etc.): font size 36-72 points, or ~ 50% larger than the body text

Consider using a large, bold san-serif font, such as **Arial Black**, **Franklin Gothic Heavy**, **Tahoma**, **trebuchet**, or **Verdana**.
Fonts

- **Body text**: font size 24-48 points.
- Make sure that the body text is the same font throughout the entire poster.
- Familiar fonts are easier for your audience to read and for other computers to print.
- DON'T USE ALL CAPS for any portion of your poster. It is hard to read and it looks like you are shouting.
- For reference, a 100 point font is about an inch high.

Choose a serif type that is very readable, like Times New Roman, Garamond* Book Antiqua or Bookman Old Style.

*Garamond italics are difficult to read.
Southern Flounder Exhibit Temperature-Dependent Sex Determination
J. Adam Luckenbach*, John Godwin and Russell Borski
Department of Zoology, Box 7617, North Carolina State University, Raleigh, NC 27695

Introduction
Southern flounder (Paralichthys lethostigmus) support valuable fisheries and show great promise for aquaculture. Female flounder are known to grow faster and reach larger adult sizes than males. Therefore, information on sex determination that might increase the ratio of female flounder is important for aquaculture.

Objective
This study was conducted to determine whether southern flounder exhibit temperature-dependent sex determination (TSD), and if growth is affected by rearing temperature.

Methods
- Southern flounder broodstock were stripped spawned to collect eggs and sperm for in vitro fertilization.
- Hatched larvae were weaned from a natural diet (not/era/Arenia) to high protein pelleted feed and fed until satiation at least twice daily.
- Upon reaching a mean total length of 40 mm, the juvenile flounder were stocked at equal densities into one of three temperatures 18, 23, or 20°C for 245 days.
- Gonads were preserved and later sectioned at 2-6 microns.
- Sex-distinguishing markers were used to distinguish males (spermatogenesis) from females (oogenesis).

Histological Analysis

Temperature Affects Sex Determination

% Females

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>0</th>
<th>10</th>
<th>20</th>
<th>30</th>
<th>40</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>94</td>
<td>35</td>
<td>75</td>
<td>55</td>
<td>25</td>
</tr>
<tr>
<td>23</td>
<td>45</td>
<td>55</td>
<td>65</td>
<td>70</td>
<td>80</td>
</tr>
<tr>
<td>28</td>
<td>55</td>
<td>45</td>
<td>35</td>
<td>25</td>
<td>15</td>
</tr>
</tbody>
</table>

**P < 0.01 and ***P < 0.001 represent significant deviations from a 1:1 male:female sex ratio.

Rearing Temperature Affects Growth

Body Weight (g)

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>18</th>
<th>23</th>
<th>28</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>12</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Female</td>
<td>20</td>
<td>25</td>
<td>27</td>
</tr>
</tbody>
</table>

Growth Does Not Differ by Sex

Body Weight (g)

<table>
<thead>
<tr>
<th>Temperature (°C)</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>18</td>
<td>12</td>
<td>20</td>
</tr>
<tr>
<td>23</td>
<td>14</td>
<td>25</td>
</tr>
<tr>
<td>28</td>
<td>20</td>
<td>27</td>
</tr>
</tbody>
</table>

Results
- Sex was discernible in most fish greater than 120 mm long.
- High (28°C) temperature produced 4% females.
- Low (18°C) temperature produced 22% females.
- Mid-range (23°C) temperature produced 44% females.
- Fish raised at high or low temperatures showed reduced growth compared to those at the mid-range temperature.
- Up to 245 days, no differences in growth existed between sexes.

Conclusions
- These findings indicate that sex determination in southern flounder is temperature-sensitive and temperature has a profound effect on growth.
- A mid-range rearing temperature (23°C) appears to maximize the number of females and promote better growth in young southern flounder.
- Although adult females are known to grow larger than males, no difference in growth between sexes occurred in age 0 (< 1 year) southern flounder.

Acknowledgements
The authors acknowledge the Substantive-Kennedy Program of the National Marine Fisheries Service and the University of North Carolina Sea Grant College Program for funding this research. Special thanks to Les Ware and Beth Stamps for help with the work.
Southern Flounder Exhibit Temperature Dependent Sex Determination

Positive Points

• The title conveys the main message instantly
• Context and objectives are made clear
• Methods are concise
• Graphs are interpreted by their titles.
• Results and conclusions are concise and relate back to objectives
• Color scheme is very simple and pleasing
• Font is large enough everywhere, including figures

Negative Points

• Results and conclusions do not relate back to context (Introduction)
• Title could be more direct: "Temperature Determines Sex of Southern Flounder"
• Title font could be larger
• Some viewers have felt there is too much white space between the columns. It could be reduced somewhat, but not too much
Can Suburban Greenways Provide High Quality Bird Habitat?

George R. Hess :: NC State University :: Department of Forestry & Environmental Resources :: Raleigh NC 27695-8002 USA :: george_hess@ncsu.edu
Christopher E. Moorman, Jamie H. Mason, Kristen E. Sinclair, Salina K. Kohut :: NC State University :: Department of Forestry & Environmental Resources
www4.ncsu.edu/~grhess/GreenwaysForWildlife

Birds of Conservation Concern in Decline
- Many bird species of conservation concern including neotropical migrants, insectivores, and forest-interior specialists decline with increasing human development
- Greenways might mitigate this effect
- Habitat patch size, vegetation composition & structure, and landscape context are key factors
- Standards are lacking for designing and managing suburban greenways as high quality habitat

Objective: Greenways for the Birds
- Determine how development-sensitive forest birds are affected by
  - forested corridor width
  - adjacent development intensity
  - vegetation composition & structure
- Develop recommendations for greenway designers and planners

Study Design & Independent Variables
- Sampled 34 - 300m corridors in Raleigh & Cary, NC, USA
- Sampled range of
  - Forested corridor widths (20 – 1,200m)
  - Adjacent density (low density residential–office/commercial)
- Additional measures
  - Vegetation composition & structure in corridor
  - Land cover in 300m x 300m adjacent to corridor (context)
- Measured richness & abundance of
  - Breeding birds
  - Neotropical migrant birds during stopovers
  - Mammal nest predators

Breeding Birds of Concern More Common in Wider Greenways with Less Managed Area Surrounded by More Forest Canopy
- 8-minute, 50m point counts at center of corridor
- Revisited 4 times during breeding season

Nest Predators Less Common in Wider Greenways with Narrower Paths
- Five baited scent stations along each greenway segment
- Observed for 5 nights each
- Significant Predictors for Predator Abundance
  - Corridor width
  - Building density
  - Mature forest
  - Ground cover
  - Vine cover

Greenways for Development-Sensitive Forest Birds Might Conflict with Intense Recreational Use
- People & Managers Prefer ...
- Forest Birds Prefer ...
- Significant Predictors for Spring Migrant Abundance
  - Greenway: (+) % Hardwoods
  - Canopy Height
  - Adjacent Landscape: (-) Bare Earth

Spring Neotropical Migrant Stopovers More Common in Wider Greenways with More, Taller Hardwood Trees
- 200m x 25m transects along one side of greenway path
- Revisited sites for two spring seasons and one fall season
- Width not significant, but trend consistent with other findings

Potential Solution: Wide Corridor, Trail Near Edge
- Make corridors at least 50m wide; wider is better
- Don’t split forested corridor
- Keep trails as narrow as possible
- Avoid wide grassy areas along trails within forested corridor
- Locate trails near the edge of forested corridors

http://www.ncsu.edu/project/posters/NewSite/examples/BirdsInGreenways/
# Can Suburban Greenways Provide High Quality Bird Habitat?

## Positive Points
- The title asks an interesting question
- The headings provide a brief description of the poster
- Methods are concise
- The poster is quite visual - nice images
- Results and conclusions are concise and relate back to objectives
- Color scheme is very simple and pleasing
- Font is generally large enough (too small in figures)

## Negative Points
- Poster appears crowded, lacking white space
- Heading blocks:
  - were not helpful in providing direction about what was in each section
  - some are too long
  - were not helpful in directing the viewer where to read for what information
- The graphs - especially the four scatter plots - are too small and have fonts that are too small
Gene Flow in Lions

Introduction
- One of the greatest dangers to small populations is related to gene flow
- Deleterious alleles can crop up and spread throughout a small population, pushing the population towards extinction
- It may be possible, as conservationists, to use gene flow in small populations to our advantage, by introducing beneficial genes into a small population, perhaps by transplanting animals with desired traits
- In either case, it is essential to know how fast the new gene, whether beneficial or detrimental, will effect the population
- Because of their unusual social structure and endangered species status, lions present an interesting and informative model of gene flow in small populations

Objectives
- Determine what kinds of detrimental genes are likely to threaten a small population.
- Predict the speed with which a beneficial gene will spread throughout the population

Methods
- I developed a stochastic model that followed the fate of 10 lion pride, month by month, over a period of 60 years.
- I modeled nine different effects of genes on survival:
  - Gene Effect 1 - Control
    - Initial population - random, about 68% heterozygous
    - Effect on survival - none
  - Gene Effect 2 - Harmful recessive gene
    - Initial population - RR with one Rr adult female
    - Effect on survival - 10%
  - Gene Effect 3 - Beneficial recessive gene
    - Initial population - RR with one Rr adult female
    - Effect on survival - 10%
  - Gene Effect 4 - Harmful dominant gene
    - Initial population - rr with one RR adult female
    - Effect on survival - 10%
  - Gene Effect 5 - Beneficial dominant gene
    - Initial population - rr with one RR adult female
    - Effect - 10%
  - Gene Effect 6 - Very harmful recessive gene
    - Initial population - RR with one Rr adult female
    - Effect on survival - 50%
  - Gene Effect 7 - Very beneficial recessive gene
    - Initial population - RR with one Rr adult female
    - Effect on survival - 50%
  - Gene Effect 8 - Very harmful dominant gene
    - Initial population - rr with one RR adult female
    - Effect on survival - 50%
  - Gene Effect 9 - Very beneficial dominant gene
    - Initial population - rr with one RR adult female
    - Effect on survival - 50%

Results
- Recessive genes had little effect, no matter how beneficial or detrimental.
- Harmful dominant genes quickly eradicated themselves, and had little effect on the resulting population size.
- Introductions of beneficial dominant genes resulted in small, quick increases in the prevalence of the beneficial allele, followed by a slower decrease.
- Gene effect 9, the very beneficial dominant gene, was the only effect I modeled that had any real positive effect on the final population size.

Discussion
- If we are to attempt to use relocation as a way to "beef up" the genetics of small populations of lions, we must try to make sure the gene we wish to introduce is a dominant one. Also, relocating just one animal is unlikely to be enough to spread the gene in a reasonable amount of time.
- My model could easily be modified to simulate the introduction of multiple animals.
- Spontaneous mutations are unlikely to be a problem in lion populations; recessive genes do not have a large enough effect to be dangerous, at least in the relatively short term of 60 years, and dominant genes eradicate themselves quickly.

http://www.ncsu.edu/project/posters/NewSite/examples/GeneFlowInLions/
Gene Flow in Lions

Positive Points

• Nice, attention-grabbing graphic (the lion)
• Large title
• Font is easy to read, even in figures
• Headings everyone will understand - clear organization
• Author identified with complete contact information (lower left corner)

Negative Points

• Text heavy and unbalanced
• Hard to read text over lion graphic
• Poster title and titles on graphics not very informative
• Could have put the pertinent text near each graph
• "Lessons Learned" section might give perspective
• What is the graphic in the lower right?
• Author’s name should have appeared more prominently under the title
Title that hints at the underlying issue or question

Your name(s) here
Your address(es) here

Introduction

This template has column widths and font sizes optimized for printing a 36 x 48" poster—just replace the "*imp*" and "blah,blah,blah" reveal motifs with actual content, if you have it. Try to keep your total word count under 500 (readily). More tips can be found at "Designing conference posters at http://colinpurrington.com/tips/academic/posterdesign"

To see examples of how others have used this template to fit their presentation needs, perform a Google search for "colin purrington poster template".

Your main text is easier to read (if you use a "serif" font such as Palatino or Times, i.e., people have done experiments and found this to be the case). Use a non-serif font for your title and section headings.

Materials and methods

Be brief, and say why the photographs or drawings whenever possible to illustrate organism, protocol, or experimental design. Viewers don’t want to read about the genome database details, however, you might find them useful.

Figure 2. Illustration of important piece of equipment, or perhaps a flow chart summarizing experimental design. Seenest, hand-drawn illustrations are usually preferable to computer-generated ones. Just bribe or flirt with an artist to get them to help you out.

Results

The layout for this section should be modified from this template to best show off your graphs and other results-related illustrations. You might want a single, large column to accommodate a big map. Or perhaps you could arrange 6 figures in a single in the center of the poster. Do whatever it takes to make your results graphically clear. And, for the love of God (or whoever), make your graphs big enough to read from 6" away.

Paragraph format is fine, but sometimes a simple list of "bullet" points can communicate results more effectively:

- 9 out of 12 brainstem-injured rats survived (Fig. 3a)
- Brainstem-injured rats ate less (Fig. 3b)
- Control rats completed maze faster, on average, than rats with brains (Fig. 3c) (t(8) = 4.82, p < .05) (Fig. 3d)

Figure 3. Make sure legends have enough detail to explain to the viewer what the results are, but don’t go on and on. Don’t be tempted to reduce font size in figure legends, axes labels, etc.—your viewers are probably most interested in reading your figures and legends, not your text.

Often you will have some more text-based results between your figures. This text should explicitly guide the reader through the figures.

Figure 4. Label the lines manually (as above), and delete the silly key provided by your charting software. The above figure should also be greatly improved if it had the ability to show which figure, which content just looks bad, too.

Figures are preferred but tables are sometimes unavoidable. A table looks best when it is first composed within Microsoft Word, then "inserted" as an "Object." If you can add small drawings or icons to your tables, do so!

Figure 5. You can use connector lines and arrows to visually guide viewers through your results. Adding emphasis this way is much better than making the point with words in the text section. Especially useful when you cannot be at poster to guide viewer.

Conclusions

You can, of course, start your conclusions in column #3 if your results section is "data light.

Conclusions should not be mere reiterations of your results. Instead, you want to guide the reader through what you have concluded from the results. What is the broader significance? Why should anyone care? This section should rely back, explicitly, to the "burning issue" mentioned in the introduction. If you didn’t mention a burning issue in the introduction, go back and fix that — your poster should have made a good case for why you did what you did. A good conclusion will also refer to the literature on the topic — how does your research add to what is already published on the topic?

Figure 1. Photograph or drawing of experiment, chemical structure, or whatever...that might help lure people to your poster. Yes, I raised my life getting this photograph.

[Image of a scientific experiment]

**Literature cited**


Acknowledgments

We thank I. Green for laboratory assistance, Mary Ana for seeds, and H.H. Smith for greenhouse care, and M.J. Moler for outstanding cost accounting. Funding for this project was provided by the Department of Entomology, the Marx summer stipend, and the person who claims she's my mom. [Note that people’s titles are optional. Titles are TMI.]

For further information

Please contact email (blankspace@space). More information on this and related projects can be obtained at www.procambium.org (give the URL for your website, too). A link to an online PDF version of the poster is nice, too.
Introduction

This is a Microsoft PowerPoint template that has column widths and font sizes optimized for printing a 36 x 36” poster—just replace the “tips” and “bullet” points with actual content, if you have. To try to keep your total word count under 300 (this suggestion applies to everyone, even you). More tips can be found at the companion site, “Advice on designing scientific posters,” at the Swarthmore College Biology Department web site. This paragraph has “justified” margins, but he also shows that simple left-justification (other paragraphs) is infinitely better if your font doesn’t “space” nicely when fully justified. Sometimes spacing difficulties can be fixed by manually inserting hyphens into longer words. (Powerpoint doesn’t automatically hyphenate, by the way).

Your main text is easier to read if you use a “serif” font such as Palatino or Times (i.e., people have done experiments and found this to be the case). Use a non-serif font for your title and section headings.

Materials and methods

Be brief, and opt for photographs or drawings whenever possible to illustrate your protocol, organized, or experimental design. Viewers don’t actually want to read about the same details, however fascinating you might find them.

Blah, blah, blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah, Blah.

APHA specifics

• Poster Session presenters can upload their handouts prior to the Annual Meeting so that they will be a permanent part of the Online Program, visible to everyone. The handouts will be available by hyperlink from the Online Abstracts.
APHA poster session logistics

• Poster sessions consist of 10 poster boards numbered 1 through 10 (session numbers will be indicated at the end of each row of boards) and will be held in the Public Health Expo at the Convention Center. There will be approximately 28 poster sessions scheduled concurrently, so be sure to identify the correct row of boards for your session as well as the appropriate board number as indicated in the program before arranging your poster.

• Posters may be set up ½ hour before the start of the session. To locate your assigned poster board, look for the 4-digit session number to which your abstract was assigned. Presentations should be taken down within 30 minutes after the session ends. Display materials not removed following the conclusion of the session will be discarded.

• The poster board will be 4 feet tall by 6 feet wide, mounted on stands.

• Thumbtacks will be available onsite for mounting the displays.

• A chair will be provided for each Poster Session presenter.
References and More resources

- abacus.bates.edu/~bpfohl/posters/
- www.soe.uoguelph.ca/webfiles/agalvez/poster/
  - www.soe.uoguelph.ca/webfiles/agalvez/poster/poster_making/entry.htm
  - www.soe.uoguelph.ca/webfiles/agalvez/poster/poster_making/good1_text.htm
- colinpurrington.com/tips/academic/posterdesign
- www.ncsu.edu/project/posters/
- libguides.tulane.edu/content.php?pid=171214&sid=1441608
And even more…

Tomorrow: Wednesday, October 1
12 -1 pm
Hands-on Workshop with Elaine Hicks
Room 1714

**Bring:**
- An abstract in a Word document
- Some images to describe your project, including a photo of yourself (headshot)
- Citations to document that your work is scholarly and builds on other scholarship related to the topic.
- Acknowledgements
Tulane Maternal and Child Health Leadership Training Program

Shokufeh Ramirez, MPH
Program Manager
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