

# **Agonistic Behavior in *Betta splendens*:**

## **Poster Symposium**

At most professional scientific symposia, the majority of research findings are presented in the form of a poster. A scientific poster has specific format and rules, and because many of you will be presenting your work in this form at some point in the future, it's a good idea to learn the right way to do it now.

A poster presentation can actually be an excellent way to present your findings, especially if you're not particularly good at public speaking. The poster should speak for itself, even when you are not present to explain it, and it can be designed to reach a wide audience, from those who are your direct competitors to others who are not in your area of research at all. The best posters are designed to SHOW, not TELL, to that diverse audience.

### **I. The Purpose of a Poster**

You should already know what an abstract is. It's an overview/brief summary of the entire content of a scientific paper, usually placed under the title of the paper in publication. A poster presentation is a sort of abstract on steroids. It should distill your research findings to their essence and be well illustrated for maximum clarity and impact. Your poster should include rationale/reasons for your research, how your findings add to research already done in the area, how you did your work, and what you can conclude from your results.

A poster should consist primarily of your RESULTS. It should not go into painstaking details about methods, though a brief overview of your protocol must be included. The best posters are short, clear, enticing to readers, and should be no longer than 200-300 words.

### **II. Creating Your Poster**

The physical aspects of your poster should make it easy to read. Here are some tips.

#### **A. Poster Size**

Poster sizes and formats may vary from one symposium/society to the next. Always be sure you know the requirements of your particular meeting before you begin to create your masterpiece. Your BIL 161 Behavior Symposium poster must be 36" tall by 48" wide.

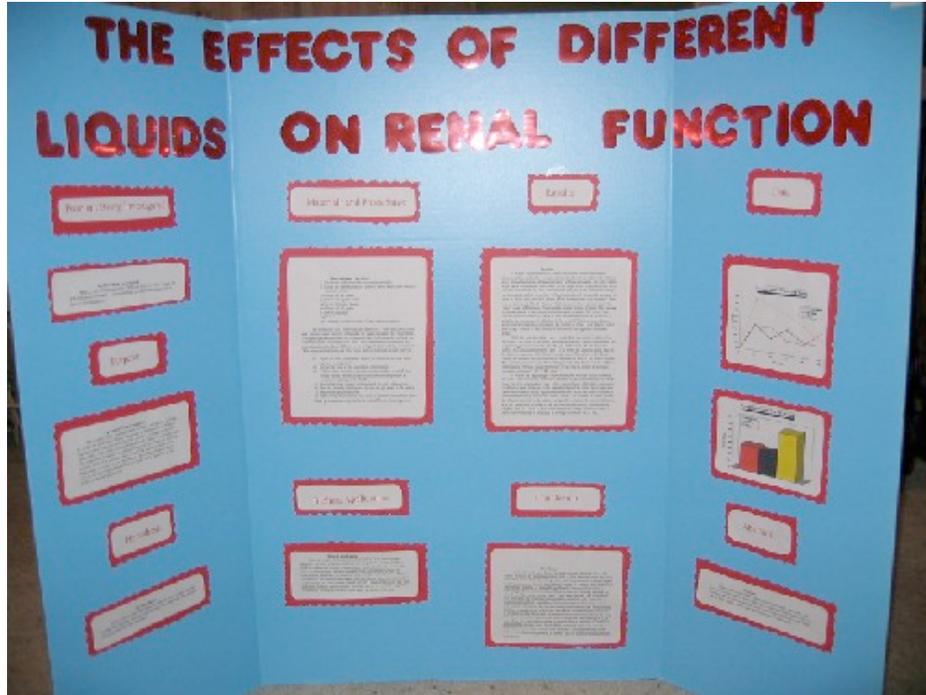
While you can have a poster this size professionally printed, it is usually somewhat expensive (\$30 at the low end). Alternatively, you can create a poster of the proper size by **tiling**: creating an entire, large document out of smaller, 8.5" x 11" pages, or "tiles". Instructions for this technique can be found here:

<http://helpx.adobe.com/acrobat/kb/print-posters-banners-acrobat-reader.html>

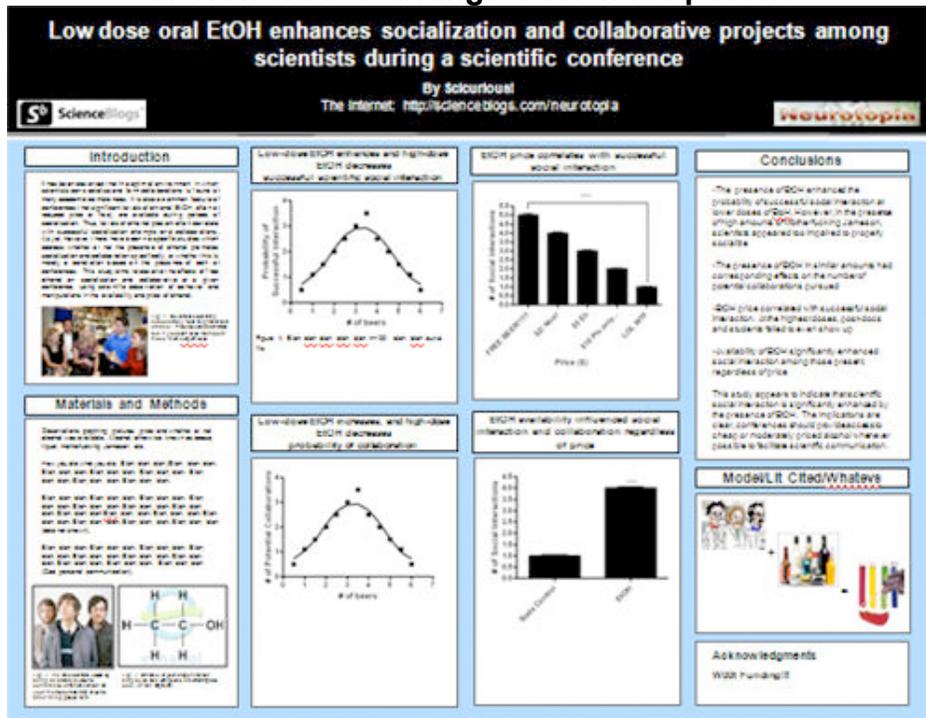
You will need a relatively recent version of Adobe to create a tiled poster. If your own computer doesn't have sufficiently updated software, the computers in the Biology Department Computer Lab (Cox 108) and in the Richter Library do.

## B. Poster Content

Forget everything you learned about scientific poster construction from your middle school science fair. The image in Figure 1a is exactly what you do NOT want to see at a scientific symposium. Instead, aim for the style shown in Figure 1b.



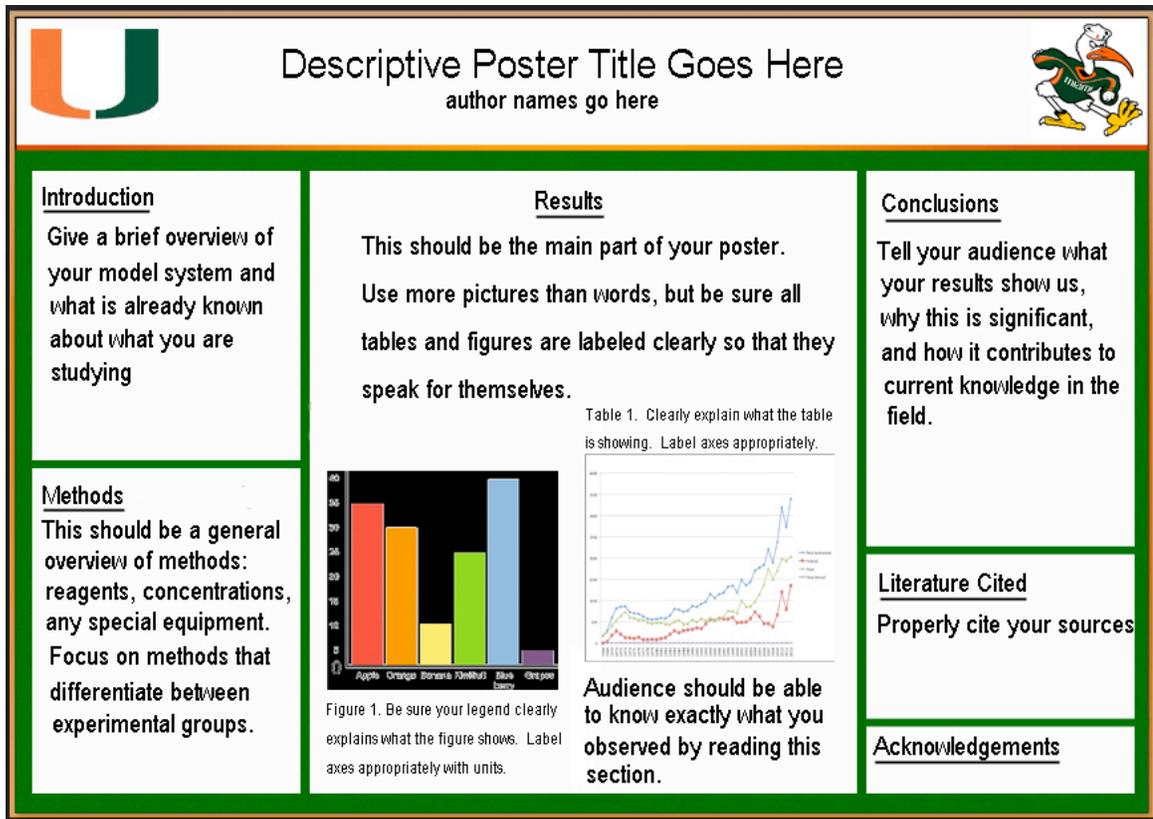
a. How NOT to arrange a scientific poster.



b. Ahhh. That's better.

Figure 1. The good, the bad, and the ugly.

Because a poster is essentially an expanded abstract, it will not be constructed exactly the way a scientific paper would be. An example of a possible poster layout can be seen in Figure 2. Yours may differ. Ask your lab instructor if s/he has specific requirements for your poster session.



**Figure 2. A sample poster layout. The dimensions of your poster should be 48” wide by 36” tall.**

## 1. Title

The title should be large (boldface type, but NOT all caps!) and readable from a distance of 20 feet. A title is usually more effective if it states your results. For example,

“Colchicine arrests mitotic cells in metaphase.” (Oo! Really? Tell me more!)

is more informative and engaging than

“The effect of colchicine on mitotic cells.” (Do I have to guess? yaaawwwn...)

Authors names should be listed below the title. The principle investigator is listed first, with secondary authors listed in the appropriate order of “intellectual ownership” of the material. In our symposium, everyone probably did about the same amount of work. So we will leave it up to each team to decide how authors should be listed. Alphabetical is always a good fallback.

## **2. Results**

*Show, don't tell.* One figure is worth a thousand words.

The results section will be the focal point of your poster. Start by designing and creating your most relevant figures and tables (including appropriate legends and axes labeling), and then build the rest of your poster around those items. Do not include raw data! All figures and tables should reflect finished calculations.

Your figures and tables should be large, clear, and easy to read. Use different colors appropriately: they should allow the reader to tell the difference between treatment and control groups or otherwise differentiate data. Color is not just for aesthetics; it should help you convey information more clearly.

If you are using text to support your figures and tables, keep them concise. Use large, clear font.

## **3. Introduction and Purpose**

Your audience will want to know why you did this study, what is its significance, and why they should care. What is already known in the field? How will your work add to what is known?

## **4. Conclusions**

Although the results should allow the audience to draw their own conclusions, you must still include your team's analysis of your observations. Do your results suggest a practical application? If so, make a recommendation. Be clear, concise, and to the point. (NOTE: Some prefer to place conclusions at the beginning of the poster, to emphasize what could arguably be considered the most important part of the work.)

## **5. Literature Cited**

If you refer to other investigators' work, be sure to cite them. If you don't remember the proper format, then here's a handy guide:

<http://classweb.gmu.edu/biologyresources/writingguide/LitCited.htm>

## **6. Acknowledgements**

If you did this work with a grant from NIH or NSF or mom and dad, don't forget to give credit to those who made your work possible.

## **C. Choosing the Right Software**

Powerpoint is usually the "go to" software for poster presentations, since one need only create a poster slide template to begin. It is easy to use, but doesn't allow much leeway for creativity. On the plus side, the poster is actually designed for overhead projection. For instructions on how to create a poster in PowerPoint, visit:

<http://faculty.washington.edu/robinet/poster.html>

Other software you might use to create a poster require training. But if you are already adept at Adobe InDesign, Illustrator, or even Photoshop, you might consider using those. The files you create generally will be larger than those you would create in PowerPoint, but their formatting options are more flexible.

## **D. Tips and Tricks for an Effective Presentation**

A good poster is visually interesting, clear, and minimalist. Here are some Rules of Thumb that will help.

- For headings (Introduction, Methods, Results, etc.), use **bold** font that is larger than the rest of the text.
- Use a readable font. Serif fonts are usually easier to read than sans serif fonts.
- Use the same font throughout the poster.
- Use the minimum number of sizes and font styles possible.
- Align font to the left, and do NOT “justify”. Justified font spacing is difficult to read.
- Do not use ALL CAPS.
- Don’t use more than three colors for the entire poster.
- Use gentle colors. Neon colors are fun art, but they are painful to read on a poster.
- Consider the human visual system when you combine colors:
  - Blue on red or red on blue will look blurry.
  - Green on red (or vice versa) just HURTS.
  - Yellow or other light color on white is hard to read.
  - Test your color scheme on friends and get their opinions on readability.
- Avoid busy backgrounds.
- Use dark font on a light background. (The reverse is hard to read and expensive to print.)
- Organize your paper in a sensible way, similar to the poster shown in Figure 1b.
- Leave space around your text. It improves readability
- If you are including photographs, resolution should be about 150dpi. More than 300dpi is overkill.
- Photos look best as .jpg files. Line figures (graphs) are better as .png files.
- Photos need legends, too. They’re useless without description.
- When you think you’re done, print a draft on 8.5 x 11 paper.
  - How do the colors look?
  - Are the fonts readable?
  - Are the figures clear and understandable?
  - Do your main points pop out of the page?

For a nice overview of the “do’s” and “don’ts” of poster creation, please visit:

<http://www.bio.miami.edu/ktosney/file/PosterHome.html>

## **E. Symposium Day**

A poster symposium allows more in-depth discussion between investigator and audience than a lecture presentation does. The symposium should last about 90 minutes, depending on how many posters there are. This will give you time to have a turn presenting your poster to symposium attendees, and also to view and critique all the other teams’ posters in both laboratory rooms.

## 1. Setting Up

Six to 12 easels and 36" x 48" foam core boards will be available in each lab room. On the day of the symposium, your team will have about 30 minutes to attach its poster to the board and mount it on the easel. **NO TAPE, GLUE OR ANY OTHER PERMANENT ATTACHMENT OF POSTERS TO BOARDS IS ALLOWED.** Similarly, teams are NOT ALLOWED to bring a 4' x 3' poster with the presentation already permanently attached. *Pre-mounted, permanent posters will be ineligible for the symposium and receive a ZERO. (Why? Think: GREEN.)*

## 2. Presentation Teams

Your teams of four will divide into presentation teams of two for the symposium. For the first half of the actual symposium, two team members will stand beside the poster to explain it to visitors and to field questions. When your lab instructor indicates it's time to switch, the other two team members will take over the job.

Because you will be talking to visitors, it's important for your team to prepare a brief, oral presentation of your poster. You need not give the talk to every visitor, but it will prime your team members to understand the main points of your presentation and be able to field questions in a professional manner.

When you are not attending your own poster, you are free to enjoy the symposium. Wander from poster to poster, studying your colleagues' work. Don't confine yourself only to your own lab room. Go through the Cox lobby to the lab on the other side and see how the other teams did, too. **(DO NOT use the hallway between the labs.)**

At most professional symposia, prizes are given (\$\$) for the best student posters. Marvel at that. Now that you've seen your competition, consider at how much better yours could have been if your team hadn't waited until a few hours ago to put the poster together. It doesn't have to be that way.

## 3. Evaluating Your Colleagues' Work

It's not enough to be able to do good research on your own. The ability to logically analyze and critique the work of colleagues is an important skill any scientist must acquire. You will start now by choosing FIVE of the posters at your symposium and completing the poster evaluation form linked to the syllabus at

[http://www.bio.miami.edu/dana/151/151F13\\_poster\\_rubric.pdf](http://www.bio.miami.edu/dana/151/151F13_poster_rubric.pdf)

for each of those five. You will turn in the evaluation forms to your lab instructor, and your critique may be used as part of your symposium grade (not the grades of those whose posters you are evaluating).

## 4. Your Team's Research Evaluation

As you grade your colleagues, your lab instructor will also be attending the symposium and evaluating everyone's work. Before you create your poster, have a look at the **grading rubric** your lab instructor will be using to rate your work.

[http://www.bio.miami.edu/dana/151/151F13\\_project\\_evaluation.pdf](http://www.bio.miami.edu/dana/151/151F13_project_evaluation.pdf)

Consider each item on the rubric before you assemble the parts of your poster, and use the rubric as a guide. There's no reason you can't create a professional poster of which your team can be proud.

