Scientific Poster Design

How to keep your poster from resembling an “abstract painting”
A poster can be better than giving a talk

More efficient because:

- you totally bomb at giving talks
- can be viewed while you nap
- can hang in the department for years
- can reach folks not in your field of research
Posters serve as...

An advertisement of your hard work

Kool, wow!, check this out!, you must be smart!
It’s just an illustrated abstract
Is my abstract effective?

- Why should anyone care?
- What am I adding to current knowledge?
- Do I need to explain methods?
- Have I told them what I found and recommend?
A portrait of a grad student
@#&%!@#$, I have 12 hours to throw this thing together and get it printed before it’s due.
How do I get months and years of research onto my poster?

• Your poster is a short story

• Describe a few major points

• Arouse the reader’s interest to read on

• Limit it to 250 words
Recite after me, Less is is best!
Simplify your paper into poster format

Find out the size required!
Who’s my audience?
Remember, most of these “scientists” come for the free booze.
Start putting together your 2 main elements
1) Simple, effective data displays

Don’t make them stand on their heads to read your data!
Keep it simple but effective
2) Small blocks of supporting text

The need for chairs in front of your poster will not go over well.
I could actually read this
Your copy should answer...

Why?

Methods?

What do I recommend?

What am I adding?

What did I find?
Where do I start?
Pick a software program

Although you’ll probably gravitate towards PowerPoint, consider a true design program.

www.postersw.com for free poster programs
PowerPoint

- OK, but the colors will suck
- Easy to use
- Inflexible
- Designed for low resolution
Adobe Illustrator or InDesign

- Excellent
- More difficult to learn
- What you see is what you get
- Others: Canvas, Publish-It, Corel Draw, LaTeX, etc.

www.postersw.com for free poster programs
Let’s build a poster!
Your poster title:

Think BIG! Really Big!

Your biggest impact!

**Boldface** type
Not all caps!

Group authors names and affiliations
The Secrets of Killer Body Text:

EFFECT OF X ON Y CELLS

INTRODUCTION

RESULTS

CELL COUNTS

MICE

DOSE RESPONSE

conclusions

Large type states methods, not results

Results artfully buried in a methods description

Carefully omits interpretations
• Leave breathing space around your text
• Plain fonts
• Same size and style
• Left-aligned
Hi there, my name is Mitch Collinsworth and I would like to tell you about myself and how I got this job at Cornell. Well you see, my uncle had a friend who knew my cousin on the other side and his daughter worked for facilities. I was down on my luck and my sister told me she knew a guy who’s nephew’s wife’s kid worked for this guy’s father and what can I say, he hired me with no questions asked and just told me to keep my mouth shut. So here I am at CCMR.
Hi there, my name is mitch collinsworth and I would like to tell you about myself and how I got this job at cornell. Well you see, my uncle had a friend who knew my cousin on the other side and his daughter worked for facilities. I was down on my luck and my sister told me she knew a guy who’s nephew’s wife’s kid worked for this guys father and what can I say, he hired me with no questions asked and just told me to keep my mouth shut. So here I am at CCMR.
Conclusions first!

- Put the most important part first!
- Short and to the point!
- Upper left hand corner
Easy for the eye to follow

Utter chaos will make folks dizzy!
Can anyone read your body text?
Title: 85 point
Authors: 56pt
Sub-headings: 36pt
Body text: 24pt
Captions: 18pt
Images and graphs say much more than words.
Keep posters visual!
Picture perfect photos

• Avoid resolution overkill!
  At least 150 dpi, but no more than 350 dpi

• Save photos as jpg or png
  Line art as a png (graphs)

• Web images are usually poor resolution
Your cool images mean nothing without a scale bar or description.
Don’t forget your funding acknowledgements

CNF-NSF-BMR, etc
Your department can provide you with the required wording
Your contact info!!!

Without it you’ll become
“ya know, those guys with the awesome poster”

Include all contact info:
• Mail address
• Phone
• E-mail
Using color to engage your readers

2-3 colors, no more!

Dark type on light color background
Whoa! Where’s my sunglasses?

This attracts attention but wears out the eye.
Be careful with the primary colors
Blue on Red appears blurry to the human eye.

Yellow on white is hard to read

Red on Blue appears blurry to the human eye.
Be aware of busy backgrounds

**PROPOSED OBJECTIVE**

To create a useful tool for assessing potential stocking habitats based on degree of variability in water quality.

- Snook are a popular game fish found in the estuarine creeks of Florida.
- Snook population has been on the decline due to overfishing and habitat degradation.
- Numerous stock enhancement endeavors are currently underway without sufficient preliminary research.
- Abiotic variability is a prominent feature of these estuaries.
- Temperature, dissolved oxygen and salinity might play influential roles in the survivorship of the juvenile snook.

**RESULTS**

North Creek Lower (High Variability)
- Dissolved Oxygen (mg/L): 0.22
- Salinity (ppt): 2.21
- Temp (°C): 25-34

North Creek Middle (Medium Variability)
- Dissolved Oxygen (mg/L): 1.6
- Salinity (ppt): 16-20
- Temp (°C): 31-38

North Creek Upper (Low Variability)
- Dissolved Oxygen (mg/L): 1.4
- Salinity (ppt): 16-30
- Temp (°C): 26-33

**STUDY SITES**

**METHODS**

1. Snook are caught in Alafia River (100-200 mm) in the northern Florida
2. All fish are fed with proprietary growth supplements
3. Fish are placed in tanks with varying temperatures
4. Fish are weighed and measured for growth

**CONCLUSION**

- Snook exhibit increased growth in habitats with a medium degree of abiotic variability.
- Stock enhancement projects will be more efficient by releasing juvenile snook primarily in nursery habitats with a medium degree of abiotic variability.
Southern Flounder Exhibit Temperature-Dependent Sex Determination

J. Adam Luckenbach*, John Godwin and Russell Brooks
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Introduction

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

Objective

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

Methods

- Southern flounder broodstock were reared at a density of 1 fish per liter using natural feeds until sexual maturation at an average age of 10 months.
- Fish reached an average length of 40 mm, the permitted flounder size recorded at age.
- Temperature was maintained at three temperatures: 15°C, 23°C, or 28°C for 285 days.
- Ovaries were preserved and histology sections were stained.
- Sex determination was observed using histological analysis of gonad tissue.

Results

- Sex was discernible in test fish greater than 120 mm total length.
- High (28°C) temperature produced 44% females.
- Low (15°C) temperature produced 22% females.
- Mid-range (23°C) temperature produced 44% females.
- Fish reared at high or low temperatures showed reduced growth compared to those at the mid-range temperature.

Conclusions

- These findings indicate that sex determination in southern flounder is temperature-sensitive and temperature has a profound effect on growth.
- A mild-range rearing temperature (23°C) appears to maximize the number of females and promote linear growth in a young southern flounder.
- Although females are known to grow larger than males, no difference in growth between sexes occurred in age-0 to 5-year southern flounder.

Acknowledgements

The authors acknowledge the support rendered by the Southern Regional Aquaculture Center (SRAC) and the National Science Foundation's DOSE program. Special thanks to Wes Wolfe for fish care during the work.
Even better!

Southern Flounder Exhibit Temperature-Dependent Sex Determination

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Introduction

Southern flounder (Paralichthys lethostigma) 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

* Juvenile flounder (40-60 mm) were shipped in 40 L of seawater to collect eggs and sperm for in vitro fertilizations.
* Hatched larvae were reared in a natural diet (phyto- and zooplankton) high protein alfalfa pellets and fed until settlement at least twice daily.
* Upon reaching a mean total length of 40 mm, the juvenile flounder were split at random into one of three temperatures 18, 22, or 26°C for 240 days.
* Females were separated and maintained at 24°C for 240 days.
* Sex distinguishing markers were used to distinguish males (hypermethanogenosis) from females (cytogenetics).

Histological Analysis

* Macrokeitosis
* Testa differentiation

Temperature Affects Sex Determination

* F: 0.001 and 0.003 (Kolmogorov-Smirnov normality test, 1 and 2.5°C reared, respectively)

Growth Does Not Differ by Sex

* Sex was discernible in most fish greater than 12.0 mm long
* High (26°C) temperature produced 50% females
* Low (18°C) temperature produced 25% females
* Mid-range (22°C) temperature produced 45% females
* Fish raised at high or low temperatures showed reduced growth compared to those at the mid-range temperature.
* Up to 240 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 (22°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.

Acknowledgments

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* JG (313622-113, 313622-114, 313622-116)}
A little different!

Southern Flounder Exhibit Temperature-Dependent Sex Determination

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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 (TDS), and if growth is affected by rearing temperature.

Methods
- Southern flounder fry were fed a diet 30% casein, 25% vegetable oil and 45% fish meal, 50% for 14 weeks.
- Fry were reared in tanks (100L) containing water aerated and cooled to 20°C.
- At 8 weeks, fish were fed a diet 30% casein, 25% vegetable oil and 45% fish meal, 50% for 14 weeks.
- Fish were used to assess size and sex differences at 14 weeks.

Results
- Most fish were male (70%), with a few smaller females (30%).
- Temperature significantly affected sex determination (p<0.05).
- Growth did not differ by sex.

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 differences in growth between sexes occurred in age 1+ year southern flounder.

Acknowledgements

*Acknowledgments to...*
Edit, Edit, Edit and Evaluate!
Print out a letter size draft

Can you read the type?
Are these the colors you really want?
Does it look too busy?
Do my main points pop?

Keep it simple
CCMR has new poster printers!

Our wonderful computing facilities offers state of the art poster printing

The secret of a good poster: "Ugly layout print ugly poster"

http://cf.ccmr.cornell.edu/posters.html
You’re not done yet...

Prepare a 3-5 minute verbal explanation

Is he ever going to SHUT UP???
Prepare mini size poster handouts

• Provides a written record for interested folks

• Makes you look together

• Be sure to include complete contact information

• Might even get you a job!
Let’s judge some designs and see what you’ve learned
A bit text heavy but not too bad.
Where do I begin?
I’m feeling sleepy
OK, but which way do I go?
Perfect!
Oh my gawd!
Nice flow, but too metallic
I’ve fallen, and I can’t get up
Your Ingenious Teaser Right Here to Woo Them Down to the Body

Conclusions first: 44 pt bold
Always put the most important part - your conclusions - first! Place your conclusions in the upper left hand corner of your poster.
Prepare your material from the reader's perspective. What was done, by who and your conclusion has to be understood within a couple of seconds' reading! Use active voice when writing the text. (Active: 34 at regular)

Introduction
Posters are primarily visual presentations. Your poster should be dominated by self-explanatory illustrations such as graphs and pictures while the amount of text should be kept to the minimum.

Your aim
Your poster is an advertisement for your research and as such it should be eye-catching and straightforward. You only have seconds, or at least a few minutes to attract the attention of the visitor to a poster session. Keep your message short and clear.

Your message
Keep your message clear and your text concise. Decide what is relevant for this poster and try to get your message across to your target group.

Layout, photos and print
Contact Mediterranean Art Library for help with layout and image arrangement. For printouts and professional photographers contact Mediterranean. For more information, Mediterranean. It's easy to produce good posters.

Tips:
The best font for text blocks that are as short as they should be on a poster is a sans serif 'helvetica family'. Therefore, use sans serif fonts such as Arial or Myriad sans, rather than serif fonts like Times or Courier. AVOID CAPITAL LETTERS IN TEXTS THAT ARE LONGER THAN ONE LINE, SINCE THEY ARE MORE DIFFICULT TO READ.

Handouts
If you succeed in getting the reader's attention, provide him with more detailed information in the form of handouts or printed articles. Include references on your handout instead of your poster.

It is always nice to put in a picture and write some few short notes of what's going on in the future. Put handouts, business cards, nearby - on a table or in an envelope hung with the poster.
Welcome to the 80's
Fer sure!
This works!
Helpful sites on poster presentations:

http://www.ncsu.edu/project/posters/IndexStart.html

http://www.swarthmore.edu/NatSci/cpurrin1/posteradvice.htm
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