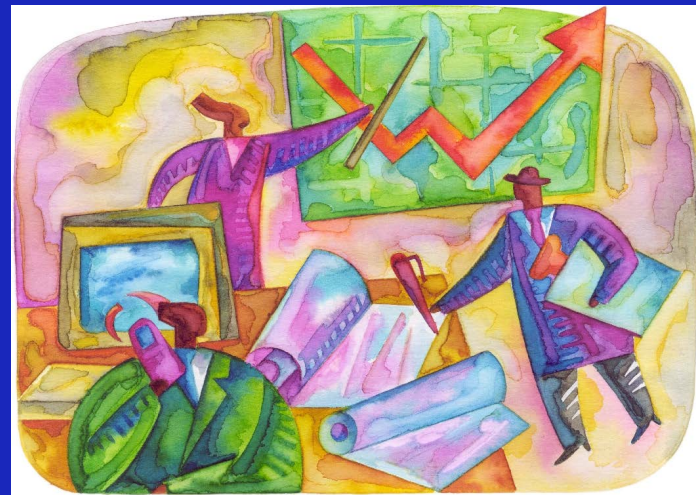


Scientific Poster Design

How to keep your poster from resembling an “abstract painting”



CCMR

Cornell Center for Materials Research

Cornell University, Ithaca, NY

<http://www.ccmr.cornell.edu>

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!

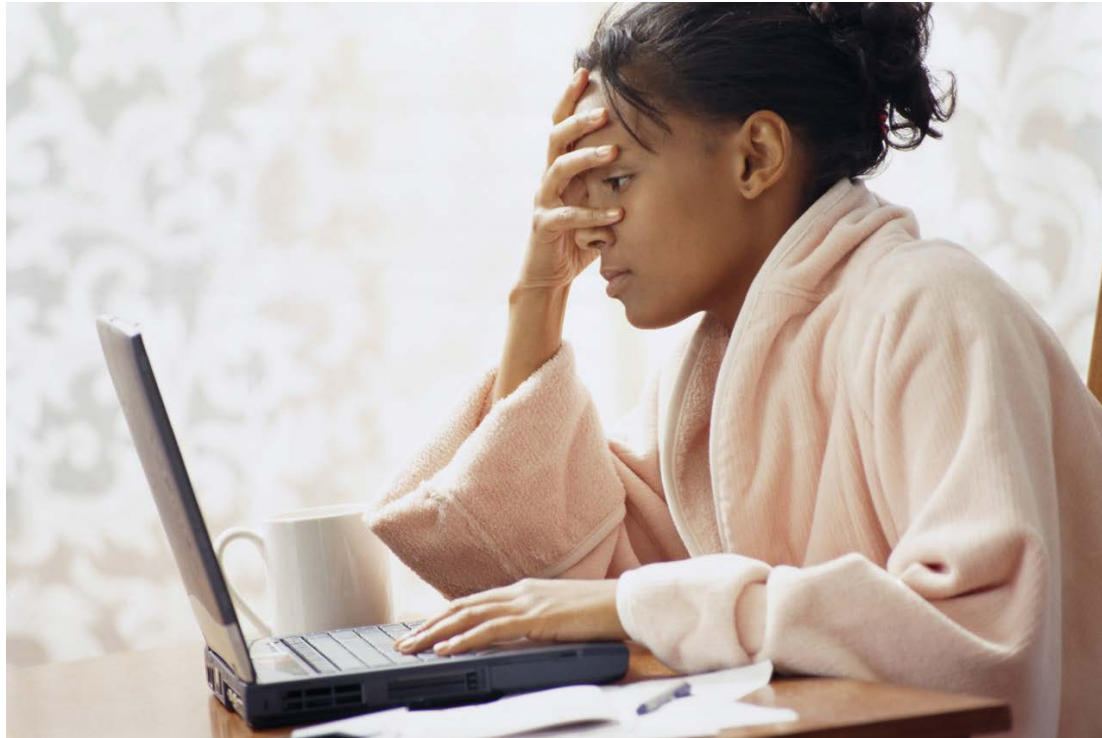
[illegible]

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

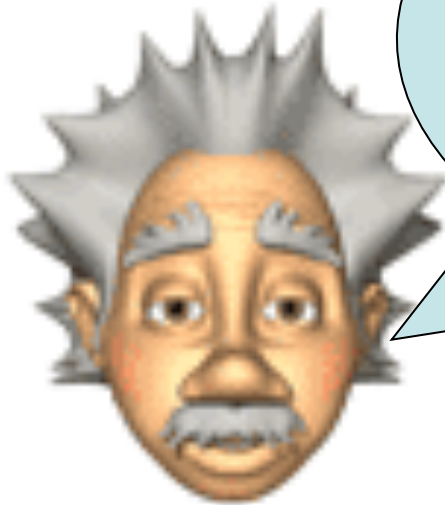


@#&%!@#\$, I have 12 hours to throw this thing together and get it printed before it's due.

How do I get months and years of research onto my poster?

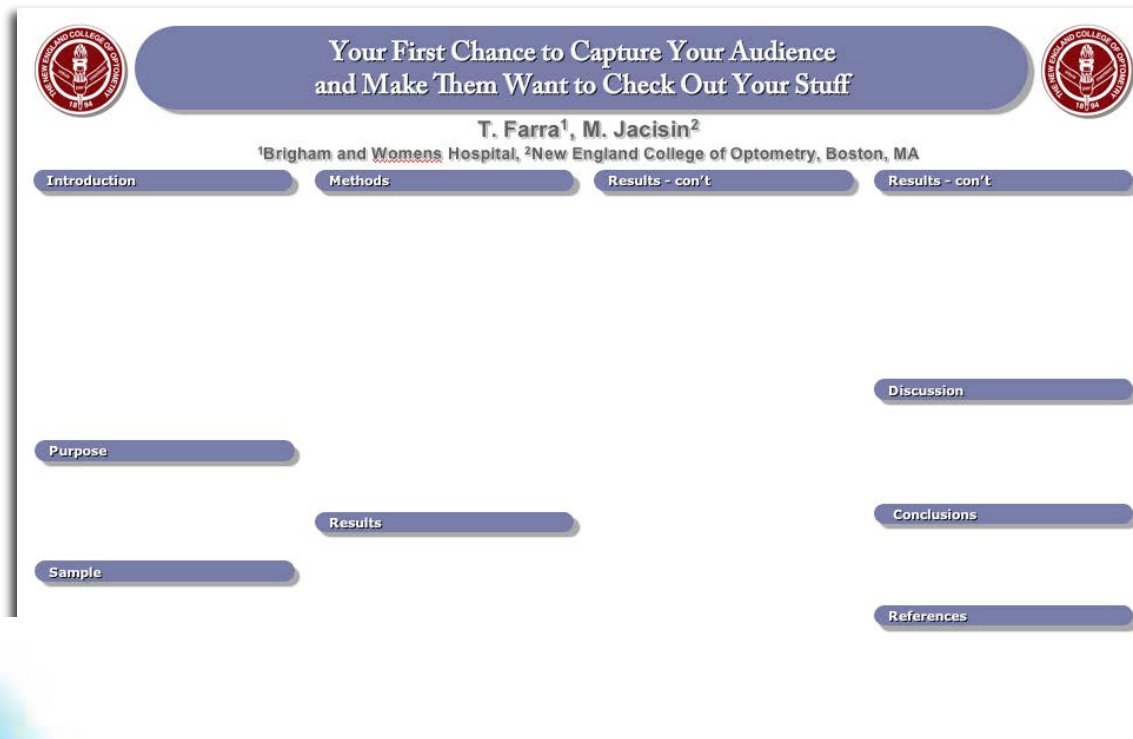


- Your poster is a short story
- Describe a few major points
- Arouse the reader's interest to read on
- Limit it to 250 words



Recite after me,
Less is best!

Simplify your paper into poster format



The poster template is a rectangular layout with a white background. At the top, there is a blue header bar with the Cornell University logo on the left and the NSF logo on the right. The title "Your First Chance to Capture Your Audience and Make Them Want to Check Out Your Stuff" is centered in the header. Below the title, the authors "T. Farra¹, M. Jacisin²" are listed, followed by their affiliations: "¹Brigham and Womens Hospital, ²New England College of Optometry, Boston, MA". The main body of the poster is divided into sections by blue bars with white text. The sections are: Introduction, Methods, Results - con't, Results - con't, Purpose, Results, Discussion, Conclusions, Sample, and References. The sections are arranged in a grid-like fashion, with some sections having more space than others.

 Your First Chance to Capture Your Audience
and Make Them Want to Check Out Your Stuff 

T. Farra¹, M. Jacisin²
¹Brigham and Womens Hospital, ²New England College of Optometry, Boston, MA

Introduction Methods Results - con't Results - con't

Purpose Results Discussion

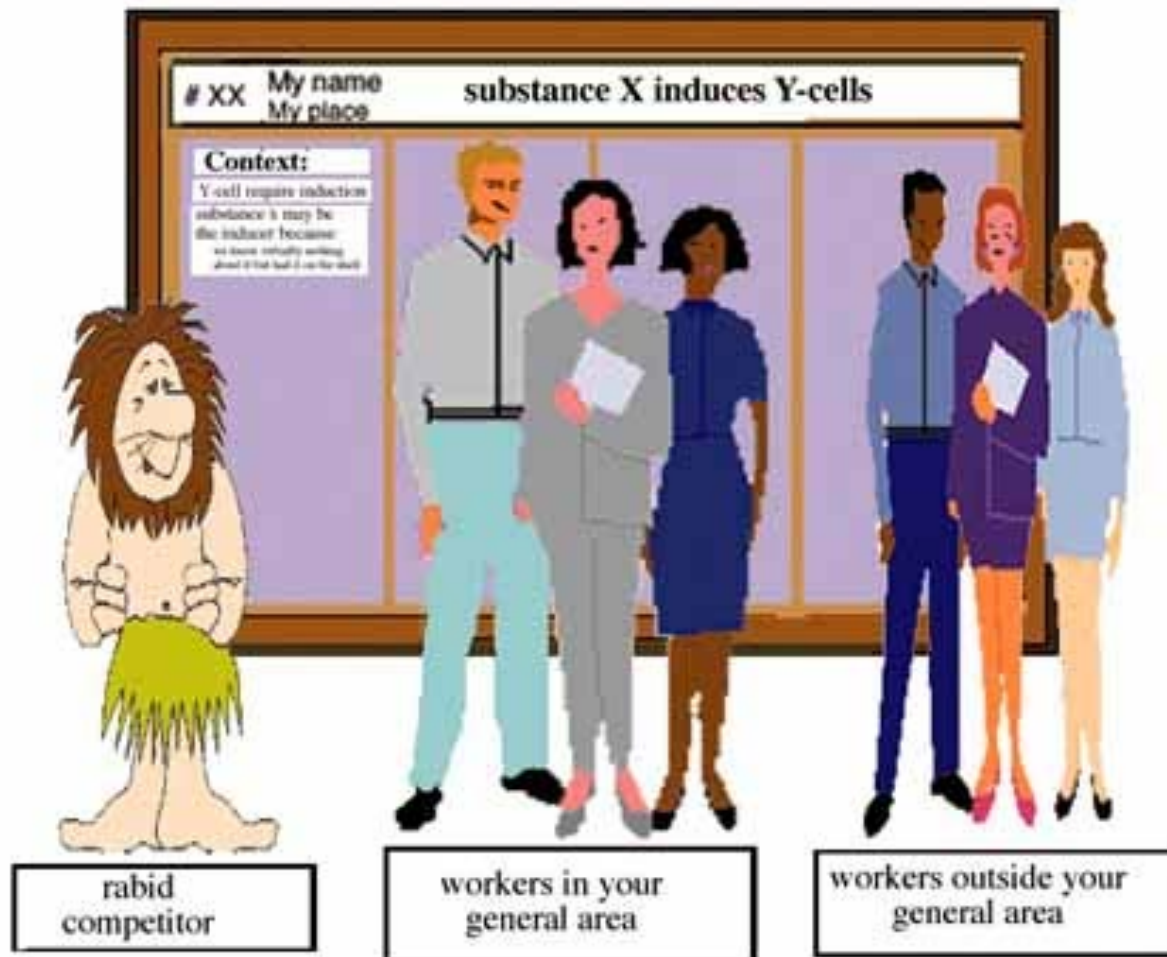
Sample Conclusions

References



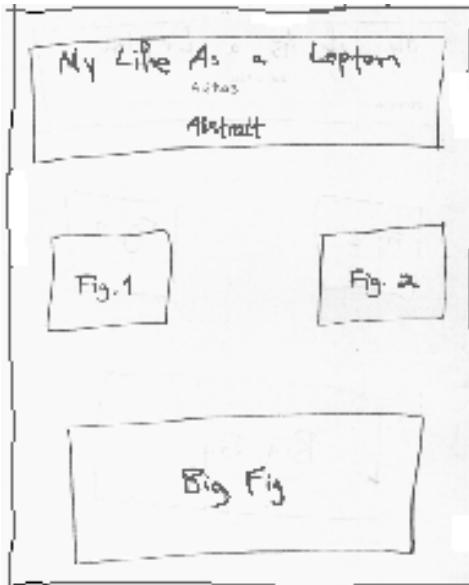
Find out the size required!

Who's my audience?



[illegible]

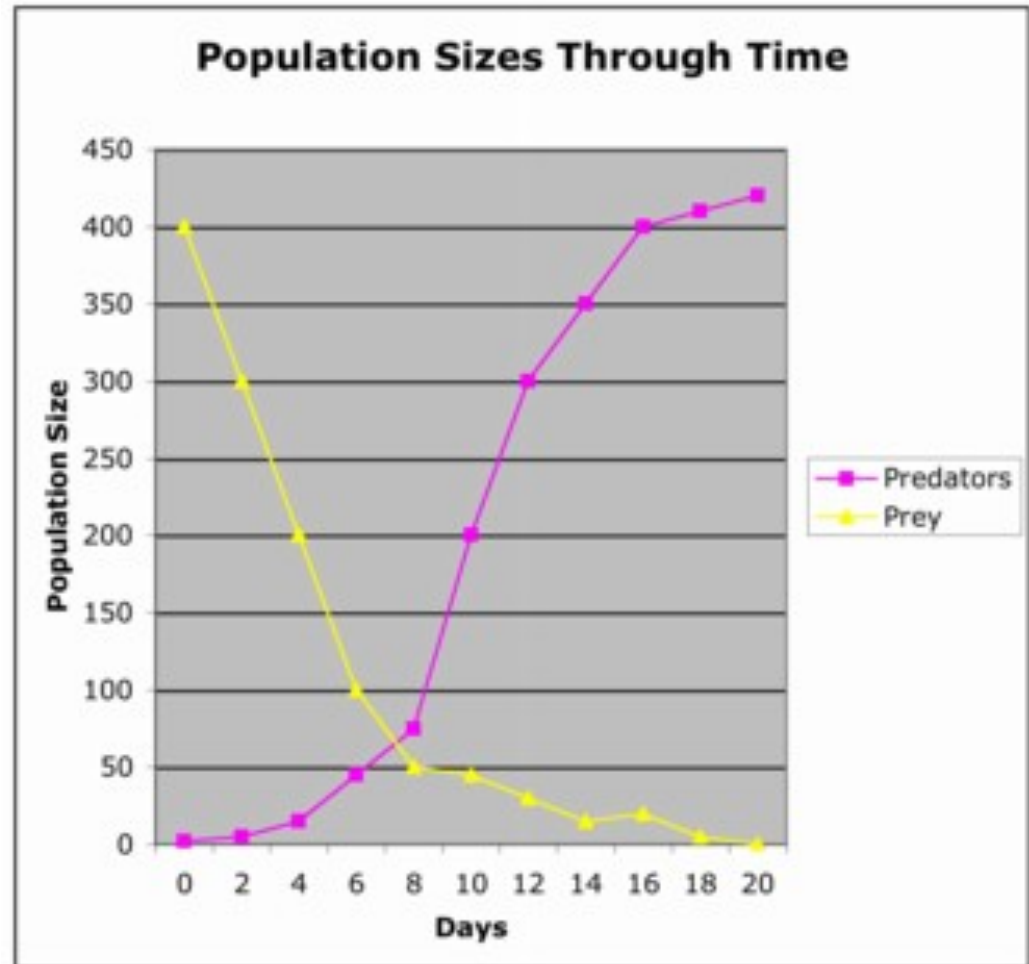
Carefully
omits
interpretations

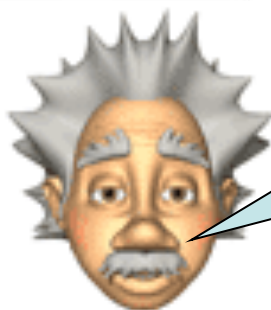
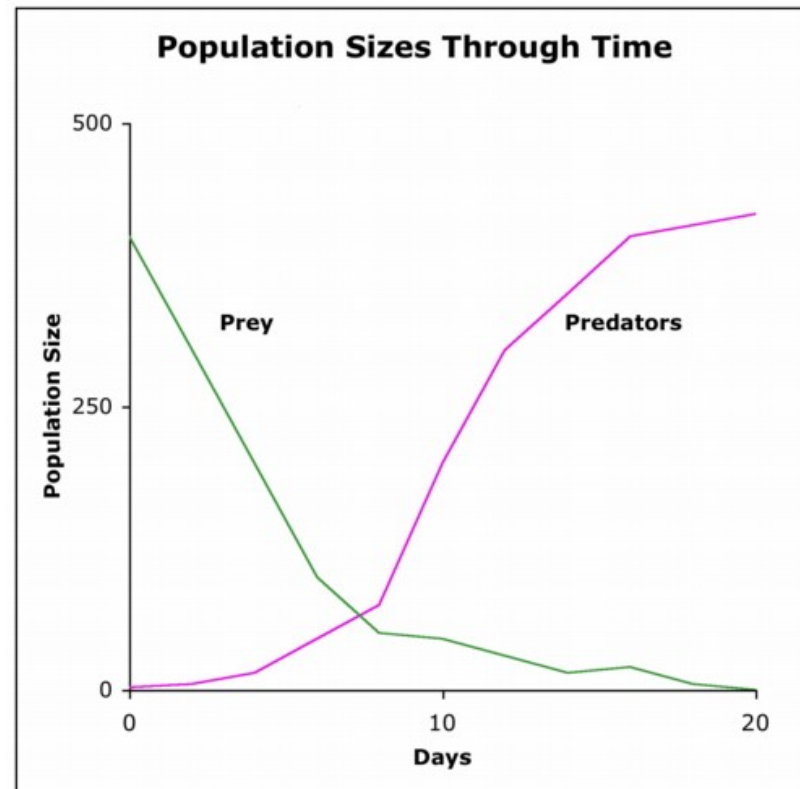
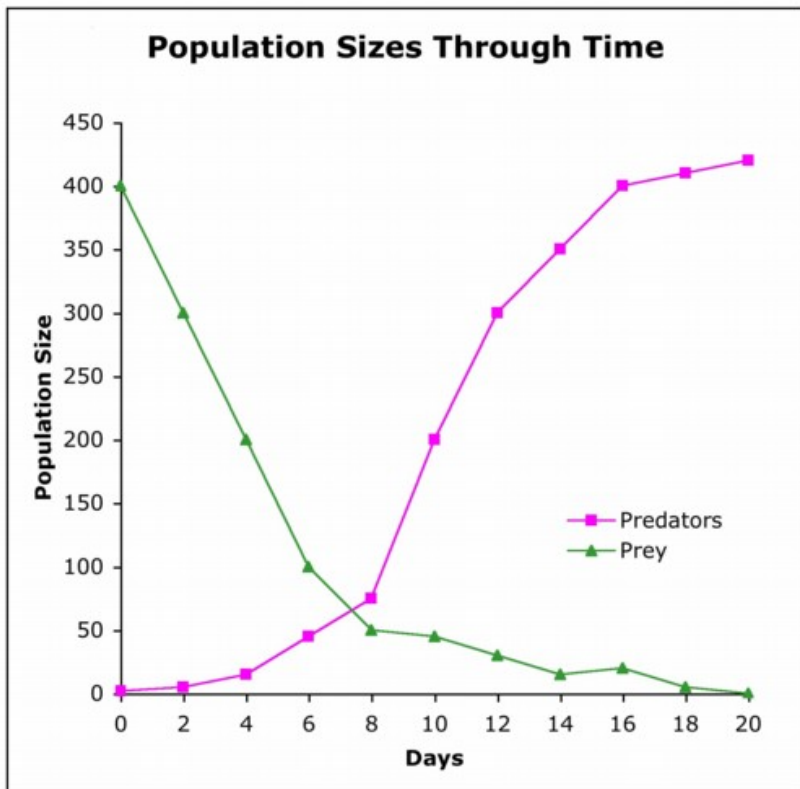


Start putting
together your
2 main elements

1) Simple, effective data displays

Don't make them stand on their heads to read your data!

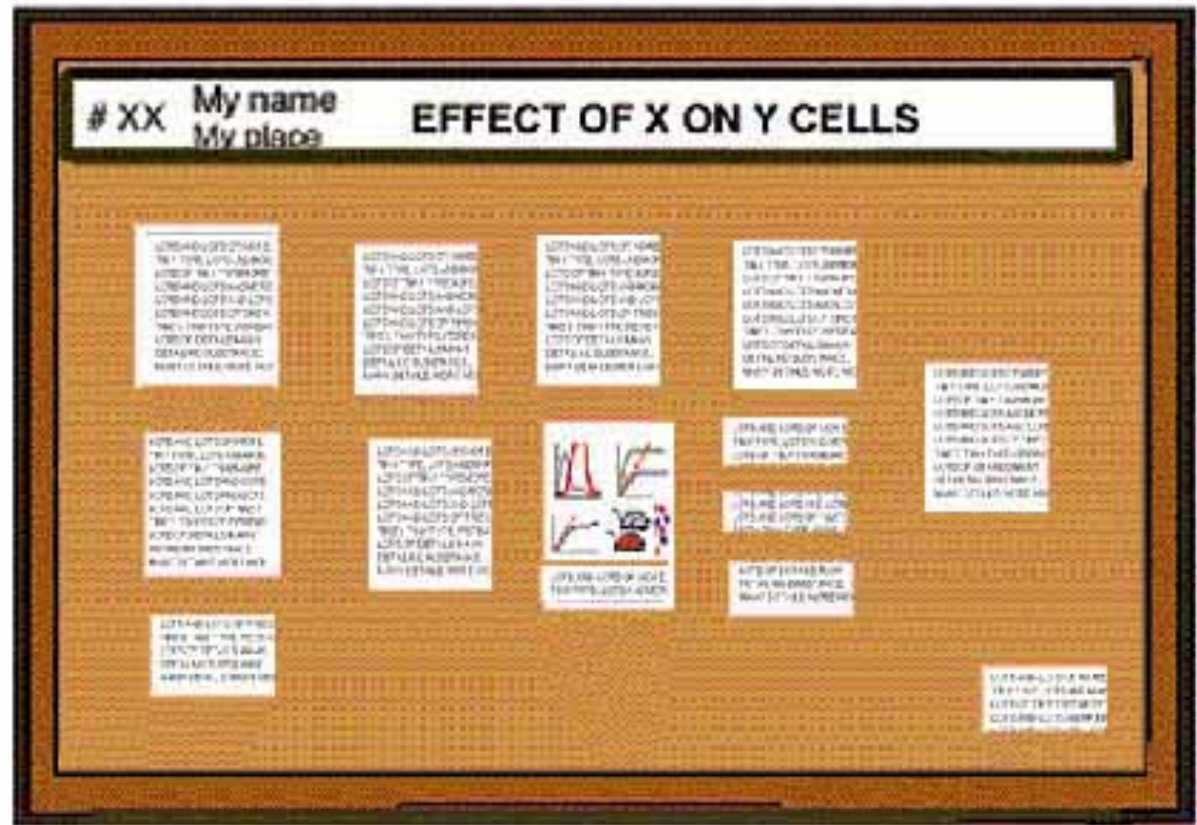




Keep it simple
but effective

2) Small blocks of supporting text

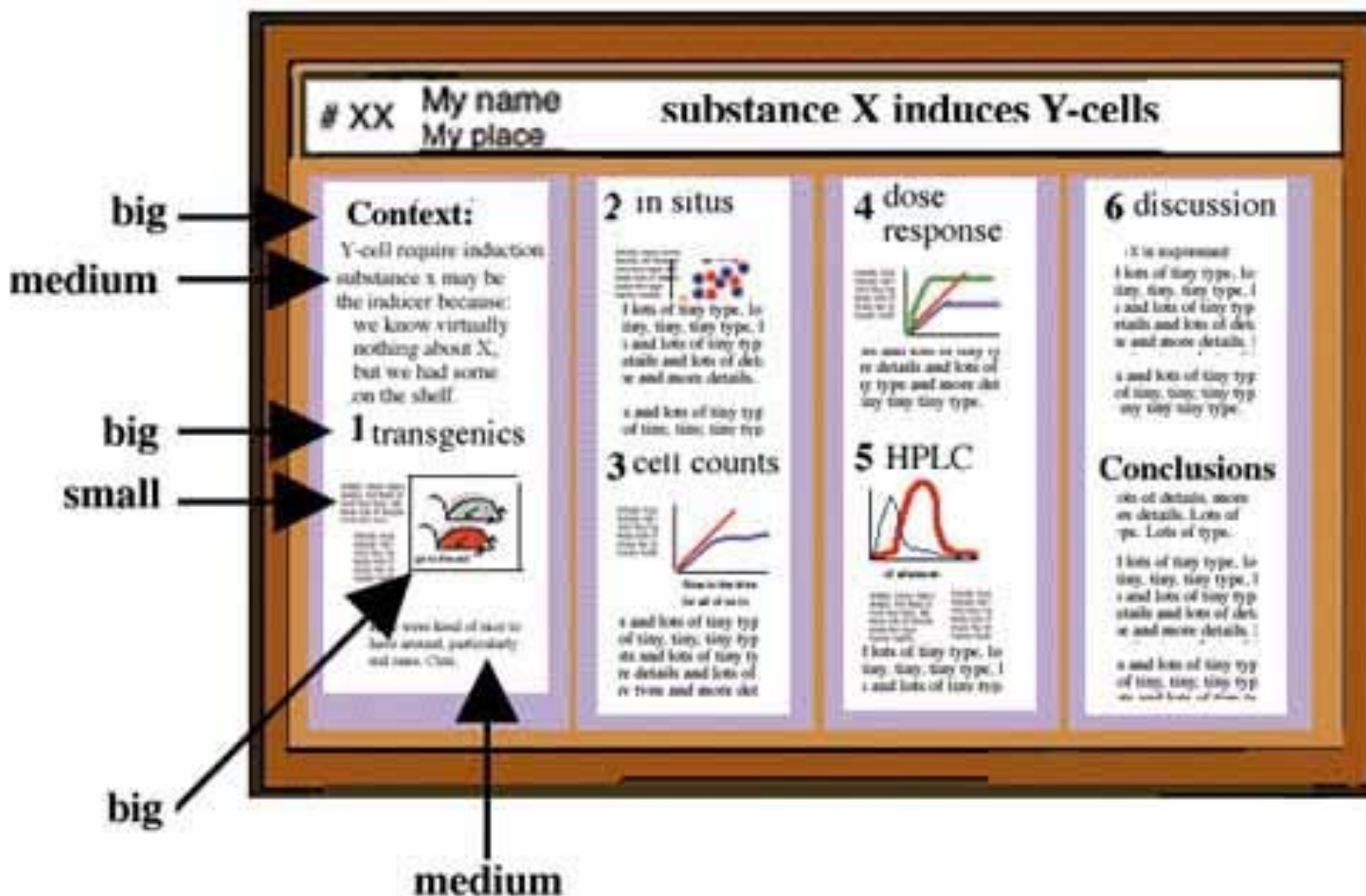
The need for chairs in front of your poster will not go over well

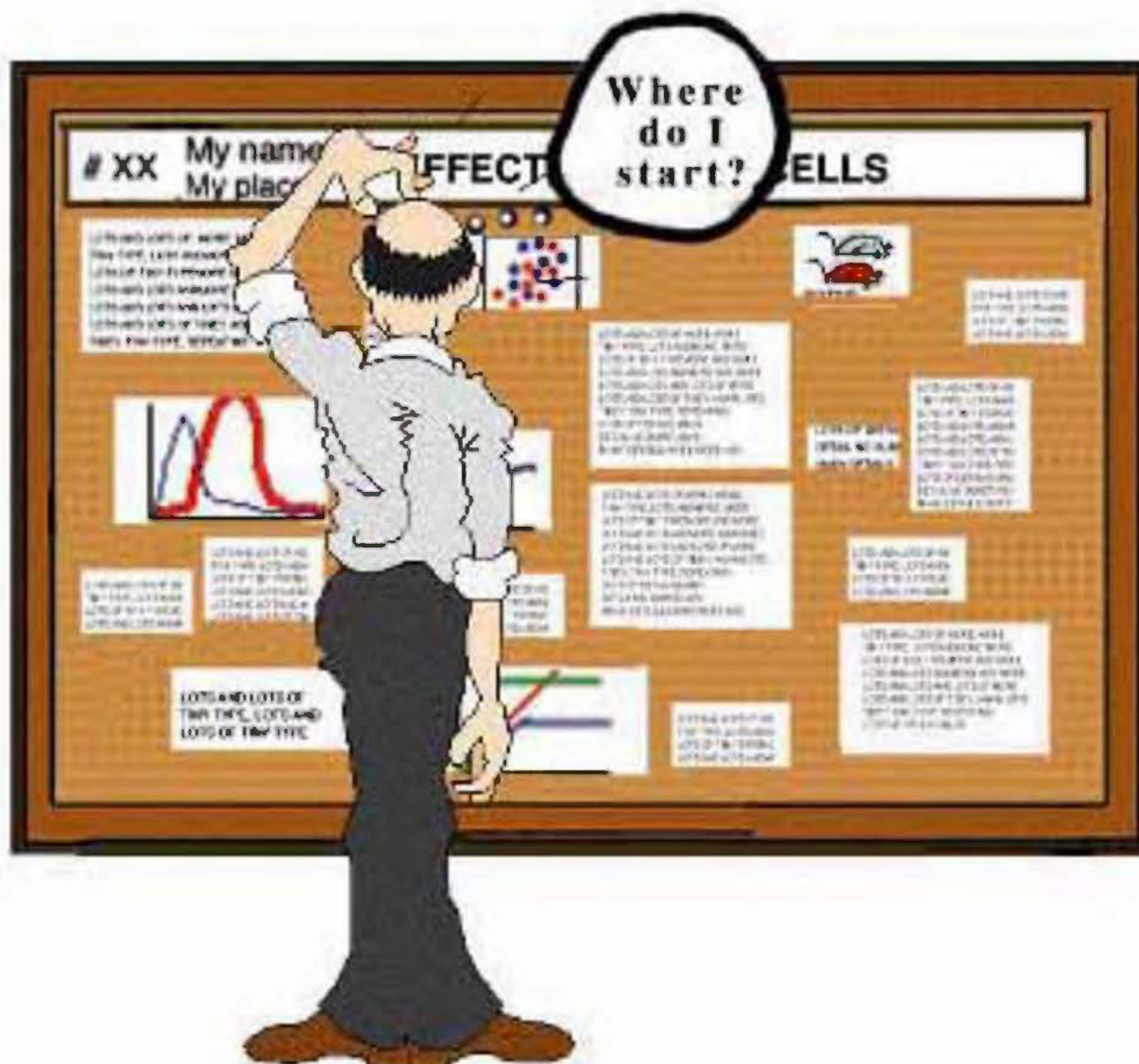


Your copy should answer...

# XX	My name My place	EFFECT OF X ON Y CELLS
Why?	Methods?	What do I recommend?
What am I adding?	What did I find?	

I could actually read this







Pick a software program

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

PowerPoint



- OK, but the colors will fool you
- Easy to use
- Inflexible
- Designed for overhead projection

Adobe Illustrator or InDesign



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



Let's design a poster!



Author's Name/s Goes Here, Author's Name/s Goes Here, Author's Name/s Goes Here

Address/es Goes Here, Address/es Goes Here, Address/es Goes Here

The Secrets of Readable Text:

**# XX My name
My place**

EFFECT OF X ON Y CELLS

INTRODUCTION

LOTS AND LOTS OF
TINY TYPE, LOTS AND
LOTS OF TINY TYPE

LOTS AND LOTS OF MORE MORE
TINY TYPE, LOTS AND MORE MORE
LOTS OF TINY TYPE AND MORE
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RESULTS

HPLC

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LOTS OF TINY TYPE

CELL COUNTS

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LOTS OF TINY TYPE

MICE

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LOTS OF TINY TYPE

DOSE RESPONSE

LOTS AND LOTS OF
TINY TYPE, LOTS AND
LOTS OF TINY TYPE

conclusions

LOTS AND LOTS OF
TINY TYPE, LOTS AND
LOTS OF TINY TYPE

**Large type
states methods,
not results**

**Results
artfully buried in a
methods description**

**Carefully
omits
interpretations**

Poster title goes here, containing strictly only the essential number of words...

[illegible]

- Leave breathing space around your text
 - Plain fonts even serif here
 - Same size and style
 - Left-aligned
- The reason is...



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



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

Your Ingenious Teaser Right Here to Woo Them Down to the Body

Therapeutic Neuroscience Department

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 second's reading! Use active voice when writing the text. **Text size: 34 pt regular**

used on a 2000 Karolinska Institutet poster

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 needs to be eye-catching and straight to the point. You only have seconds, or at best 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 [Mediahuset](#) at University Library for help with layout and image enhancement. For printouts and professional photographers contact [Björkstam](#). For more information: [www.bjorkstam.se](#)

Always write a description of the caption 20 regular

Always write a description of the caption 20 regular

Tips:
 The best font for text blocks that are as short as they should be on a poster is a Sans Serif typeface family. Therefore, use sans serif fonts such as Arial or ~~Mungo~~ 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 her/him with more detailed information in the form of handouts or printed articles. Include references on your handout instead of your poster.

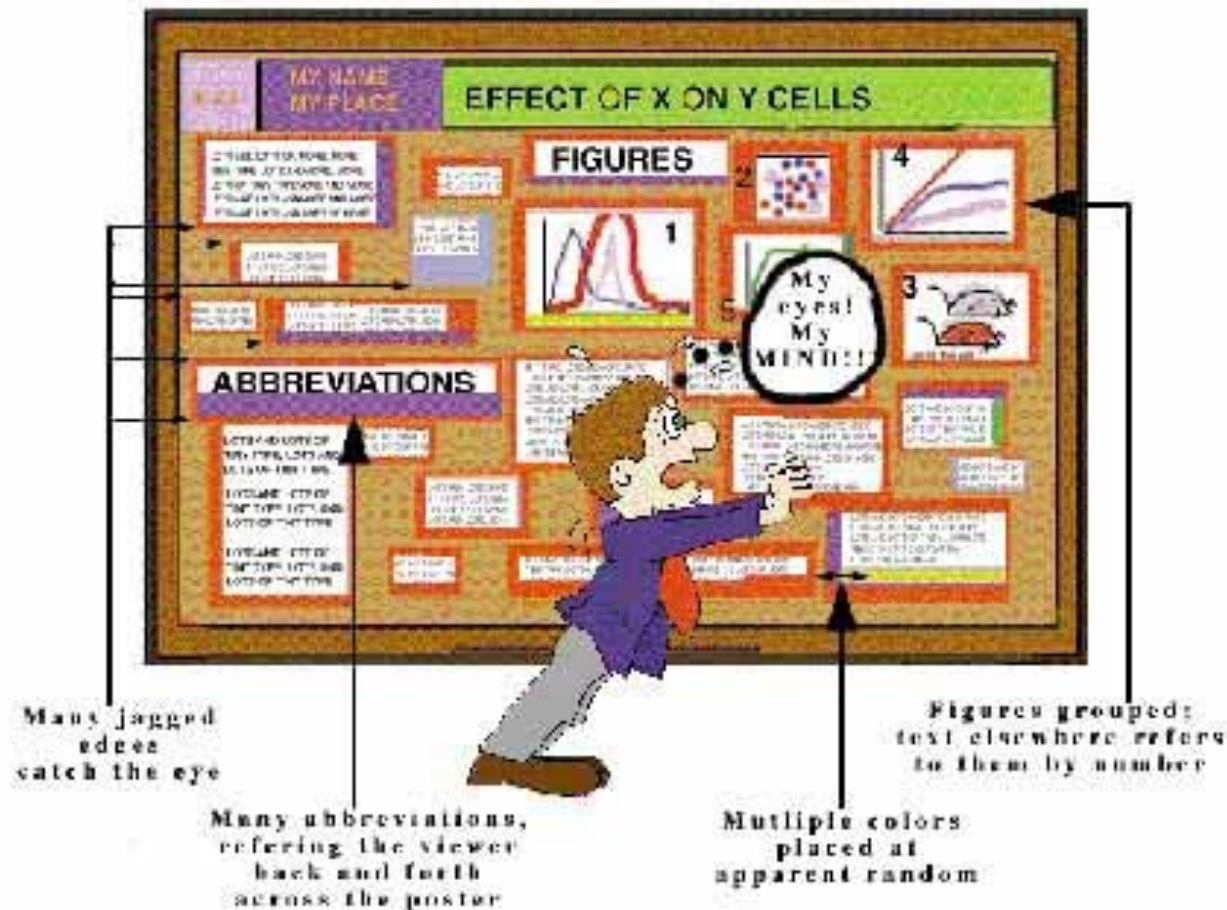
It is always nice to put in a picture and write some few short notes of what's going on in the future. Put handouts, business cards, nearby - on a table or in an envelope hung with the poster.

Karolinska Institutet, Stockholm
 Telefon: 08 4412100
 Fax: 08 4412101

Mediska Bild och Bild
 Telefon: 08 4412100
 Fax: 08 4412101

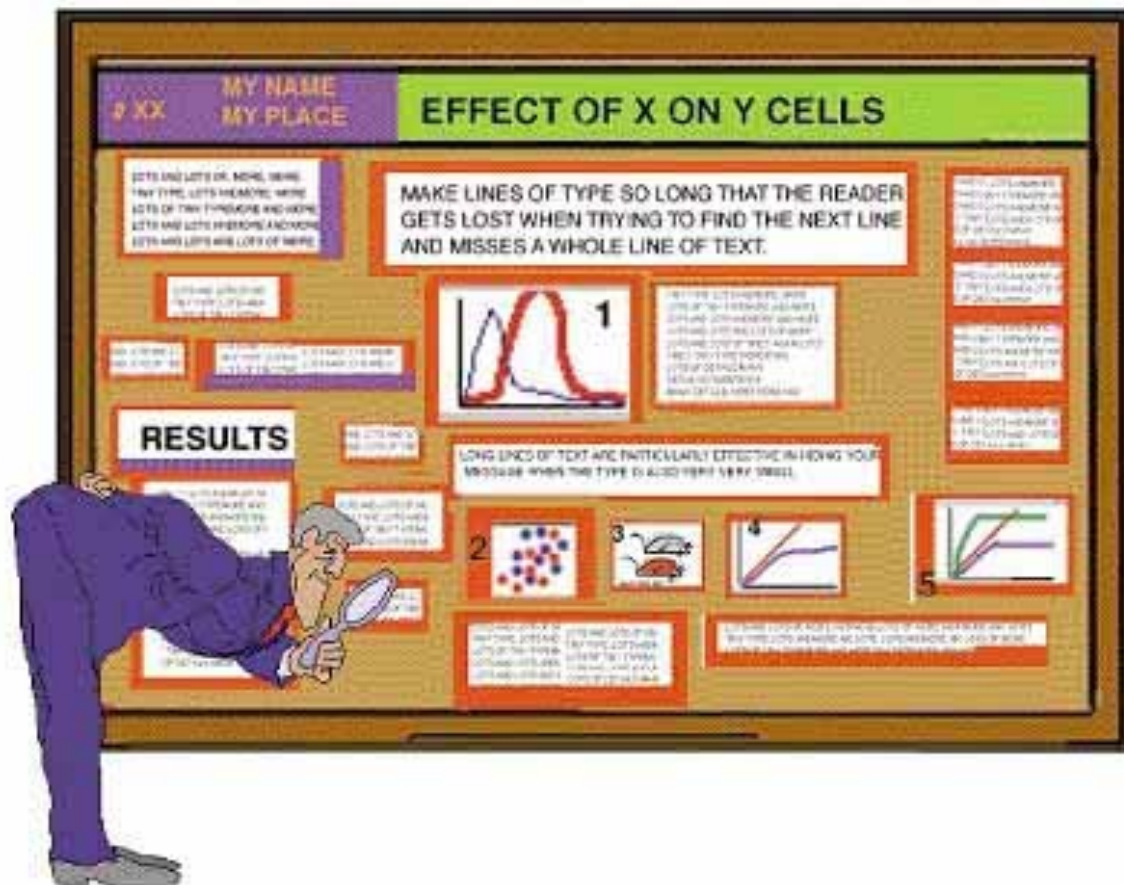
Mediska Bild och Bild
 Telefon: 08 4412100
 Fax: 08 4412101

Easy for the eye to follow



Utter chaos will make folks dizzy!

Can anyone read your body text?



Text sizes:

Title: 85 point

Authors: 56pt

Sub-headings: 36pt

Body text: 24pt

Captions: 18pt

Your Ingenious Teaser Right Here to Woo Them Down to the Body

The name of the poster 24pt regular

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 second's reading! Use active voice when writing the text. textsize: 34 pt regular

Introduction

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Always write a descriptive caption 24pt regular

Tips:

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Handouts

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Use pictures or illustrations! Image caption 24pt regular

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.

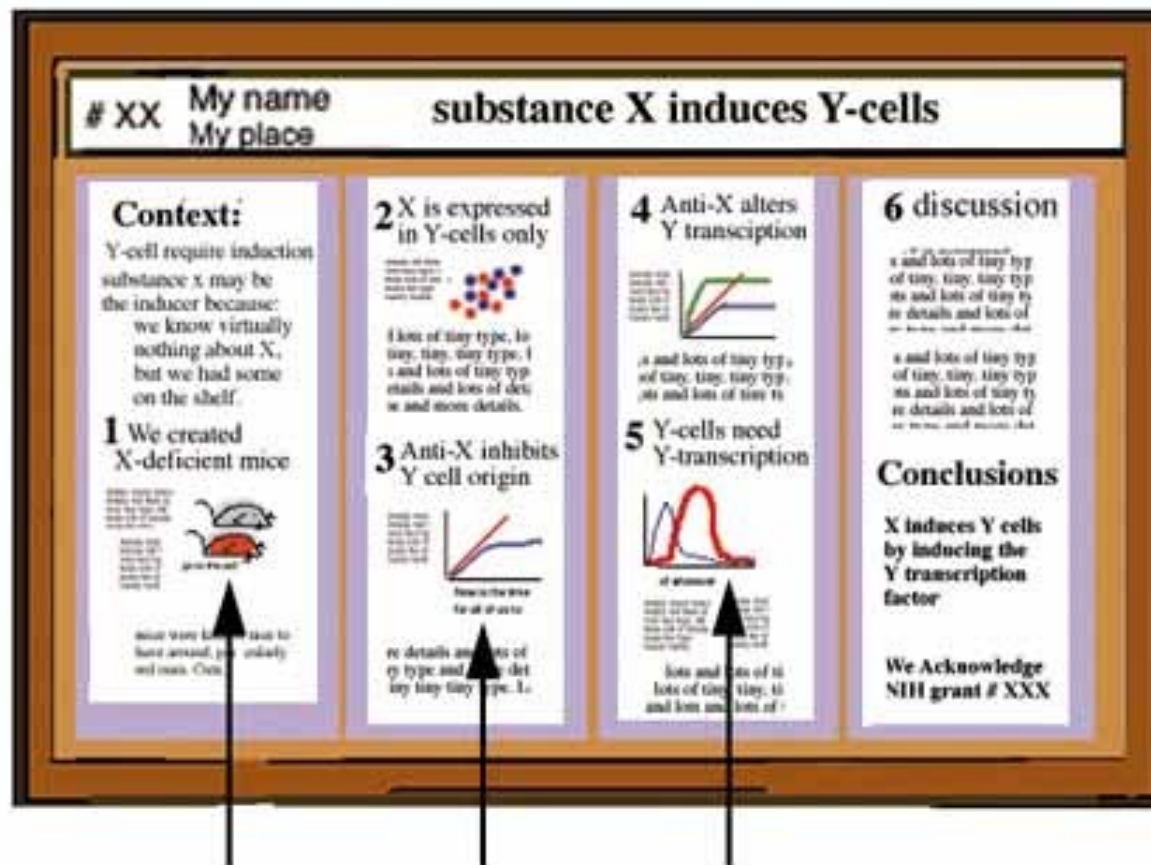
Karolinska Institutet, Huddinge
Forsknings- och Utvecklingsavdelningen
S-141 86 Huddinge, Sweden

Välkommen till Karolinska Institutet
För information om konferenser
och aktiviteter, kontakta
Karolinska Institutet

Telefon 08 63 63 20
Fax 08 63 63 63

Webb: [www.ki.se](#)
E-post: [info@ki.se](#)

Images and graphs say much more than words



BIG figures that use color

DOI: 10.1002/for



Southern Flounder Exhibit Temperature-Dependent Sex Determination

J. Adam Luckenbach*, John Goswin und Russell Booski

Department of Zoology, Box 7517, North Carolina State University, Raleigh, NC 27695



Introduction

Reaches a floriferous (flowering) stage before sexual maturity, support valuable fisheries and show good promise for aquaculture. Female florider is known to grow faster and reach larger adult sizes than males. Therefore, information on sex determination that might increase the ratio of female florider is important for aquaculture.

Objective

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

Methods

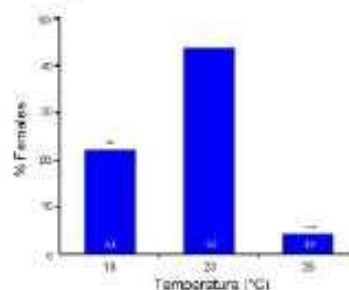
- Southern flounder broodstock were strip-spawved to collect eggs and sperm for *in vitro* fertilization
- Fertilized larvae were reared from a natural diet (centricarpotenoid) to high protein pelleted feed and fed until saturation at least twice daily
- Upon reaching a minimum length of 40 mm the juvenile flounder were stocked at equal densities into one of three temperatures (K 23, or 28°C for 245 days)
- Crustaceans were preserved and later soaked in 2-6 microns
- Sex-distinguishing markers were used to distinguish males (upermotogenesis) from females (oostegia)

Histological Analysis

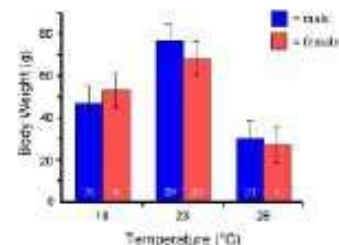
**Media Contact:** Media@hawaii.edu

Keywords: Differential Equations

Temperature Affects Sex Determination

^c***P < 0.01 and ****P < 0.001 represent significant differences from a = 1 male (male sex ratio).

Growth Does Not Differ by Sex



Results

- Sex was discernible in most fish greater than 120 mm long.
- High (28°C) temperature produced 0% 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.
- Between 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 (24°C) appears to maximize the number of females and promote faster 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 to age-3 (year) southern flounder.

Acknowledgements

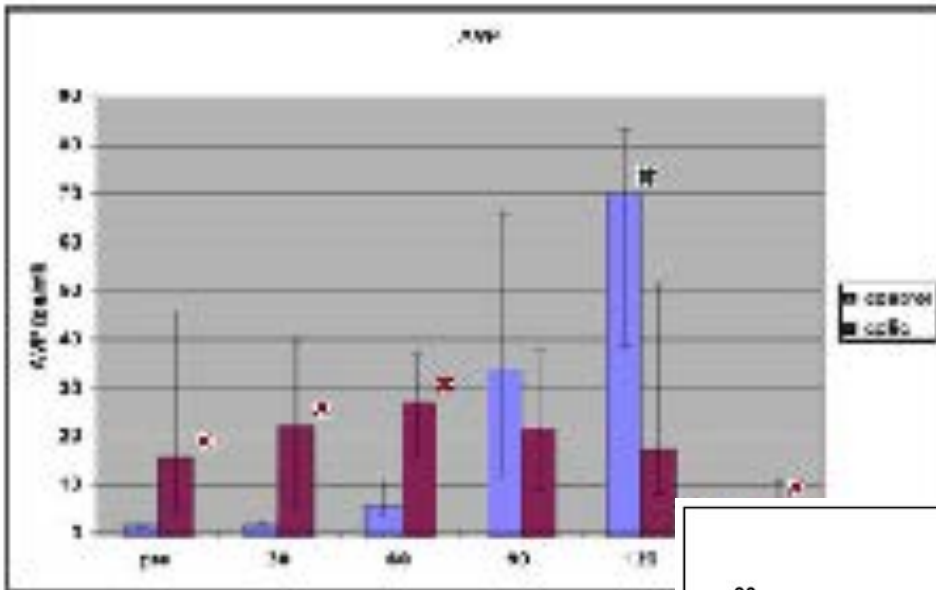
The authors acknowledge the Advanced Research Program of the National Human Resources Service and the University of North Carolina for their Culture Program for funding this research. Special thanks to the trainees and both writers for help with the work.

Picture perfect photos

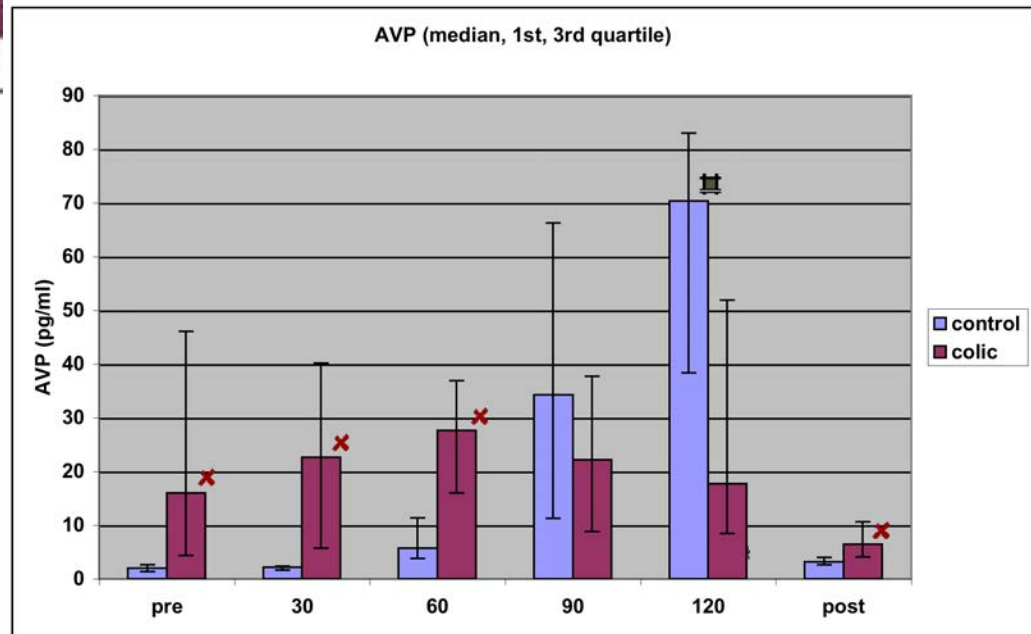
- Avoid resolution overkill!
At least 150 dpi, but no more than 300 dpi
- Save photos as jpg or png
Line art as a png (graphs)
- Web images are usually
poor resolution

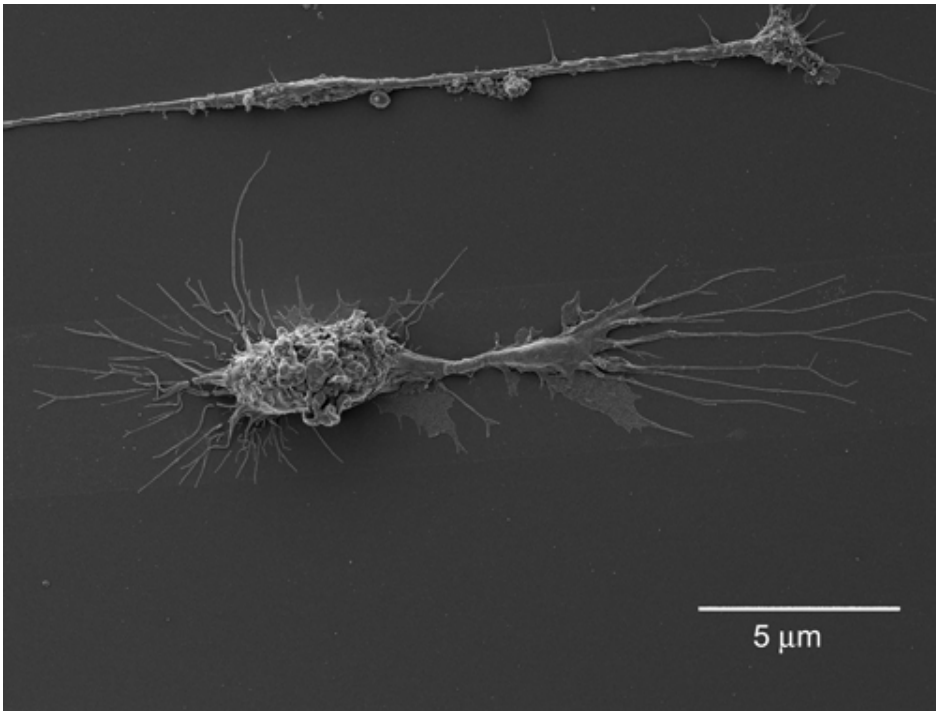


jpg



png

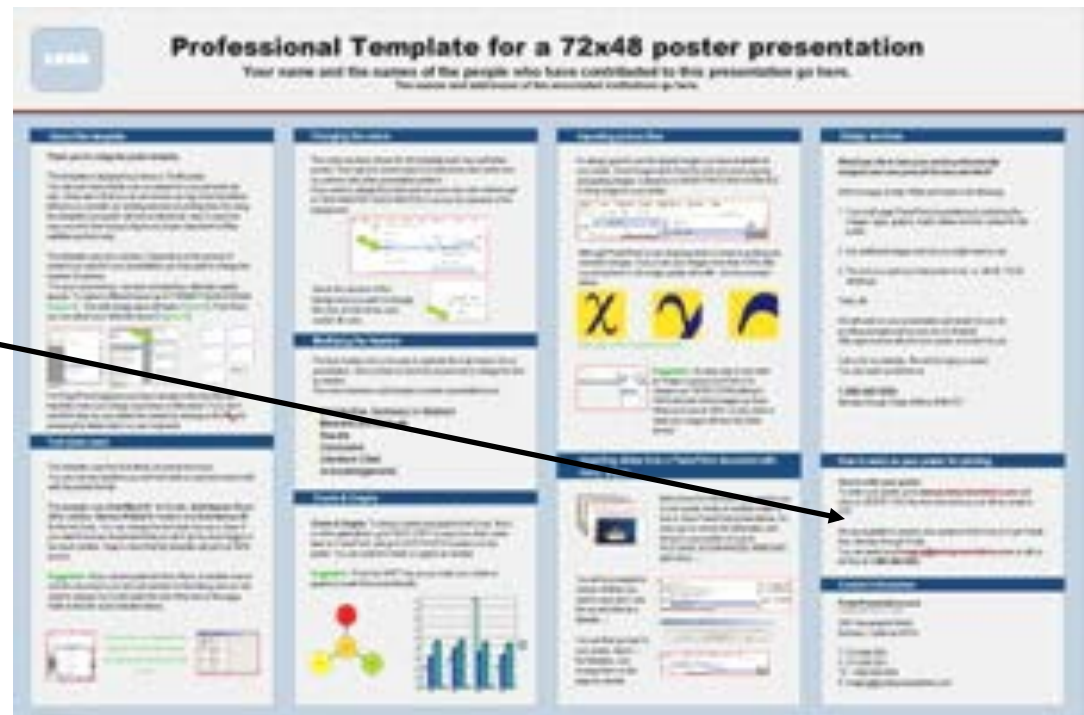




Your cool images
mean nothing
without a
scale bar or
description

Don't forget your funding acknowledgements

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



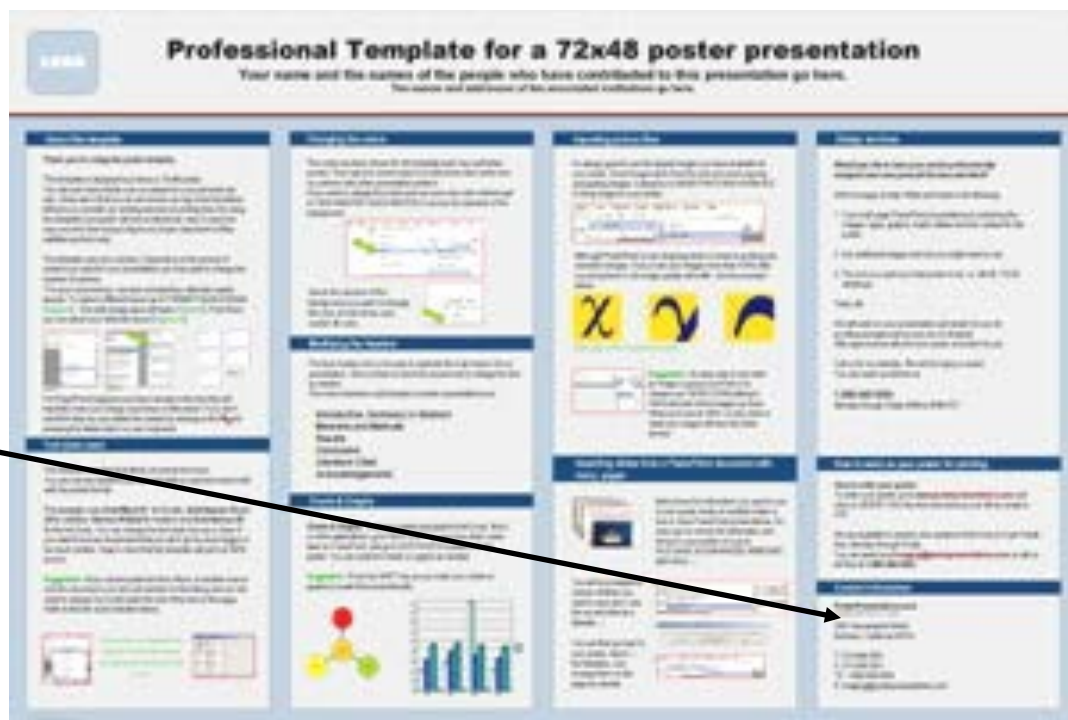
Your contact info!!!

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



Poster title goes here, containing strictly only the essential number of words...



Author's Name/s Goes Here, Author's Name/s Goes Here, Author's Name/s Goes Here

Address/es Goes Here, Address/es Goes Here, Address/es Goes Here

Introduction

Plot ...

Check with conference organizers on their specifications of abstracts and posters before you submit your poster. eg. make sure poster size and layout are correct and suitable.

The poster size is 36 inches wide by 48 inches high. The poster can be scaled to a smaller or larger size when printing. You need a different poster size when a portrait vertical or a landscape poster template.

Be sure to use a good quality printer and paper. The poster should be printed on a good quality paper. The poster should be printed on a good quality paper. The poster should be printed on a good quality paper.

Method

Tips for making a successful poster ...

- Read your paper in poster format. eg. ...
- Headings of more than 6 words should be bold and use lower case for all capitals.
- Use a good quality printer and paper. The poster should be printed on a good quality paper. The poster should be printed on a good quality paper.
- When laying out your poster leave breathing space around your text. Don't overcrowd your poster.
- Try using photographs or colored graphs. Avoid long numerical tables.
- Spill check and get some more design programs.

Figure 1: A typical poster layout. The poster is 36 inches wide by 48 inches high. The poster can be scaled to a smaller or larger size when printing. You need a different poster size when a portrait vertical or a landscape poster template.

Results

Importing the results ...

Images such as photographs, graphs, diagrams, logos, etc. can be added to the poster.

To make a good poster, you need to use a good quality printer and paper. The poster should be printed on a good quality paper. The poster should be printed on a good quality paper.

Be aware of the image size you are importing. The average color photo (13.5 x 18 cm) would be about 3MB. (Note: 1MB is 1,000,000 bytes.) Call the printer.

Do not use images from the web.

Figure 2: A typical poster layout. The poster is 36 inches wide by 48 inches high. The poster can be scaled to a smaller or larger size when printing. You need a different poster size when a portrait vertical or a landscape poster template.

References and Limitations

Once you have completed your poster, bring it to the printer. Make sure you have a good quality printer and paper. The poster should be printed on a good quality paper. The poster should be printed on a good quality paper.

Do not use images from the web.

Cost ...

For poster printing and limiting charges contact the printer.

Aim

How does the poster template ...

Simply highlight the essential aspects of your work. The poster should be printed on a good quality paper. The poster should be printed on a good quality paper.

The poster should be printed on a good quality paper. The poster should be printed on a good quality paper.

Conclusion

For more information on poster design, scanning and digital photography, and image resolution.

Contact:

Medical Illustration Unit

Phone: 607/255-1234

Email: info@medillustration.cornell.edu

Website: <http://www.medillustration.cornell.edu>

Acknowledgements

Just highlight the essential aspects of your work. The poster should be printed on a good quality paper. The poster should be printed on a good quality paper.

References with your list.

Whoa! Where's my sunglasses?

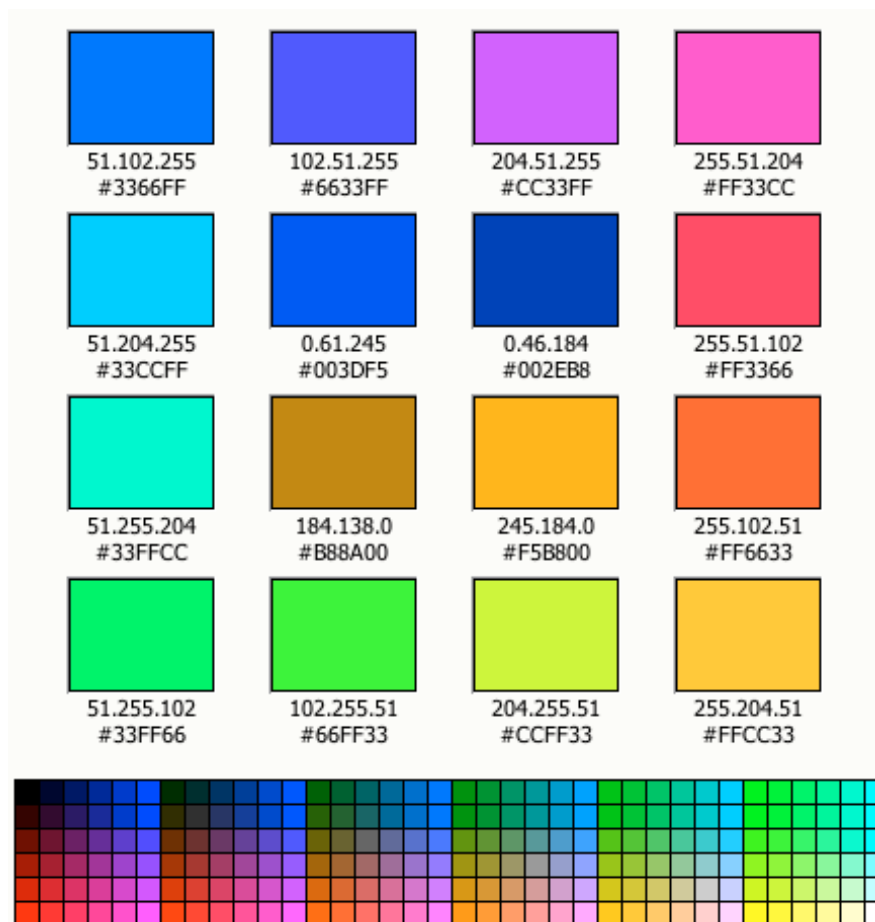
POSTER TITLE GOES HERE, CONTAINING STRICTLY ONLY THE ESSENTIAL NUMBER OF WORDS...

Author's Name/s Goes Here, Author's Name/s Goes Here, Author's Name/s Goes Here
 Address/s Goes Here, Address/s Goes Here, Address/s Goes Here

Introduction Plot ... Check with conference organisers on their specifications of size and orientation before you start your poster. eg. maximum poster size and aspect ratio. The page size of this poster template is A0 (841x1189mm) landscape (horizontal) format. Do not change the page size. You can scale up to a smaller or larger size when printing. You need a different up poster with either a portrait (vertical) or a square poster template. Be aware that you cannot use the template with space allocated by some conference organisers (eg. 841x1189mm). Do not make your poster bigger than necessary (just will not fly). Check with conference organisers on their specifications of size and orientation before you start your poster. eg. maximum poster size and aspect ratio. The page size of this poster template is A0.	Method Tip for making a successful poster ... • Rewrite your paper in poster format. eg. Simply everything and state overall. • Headings other than Section should be upper and lower case post capitals. • Have a wide margin in capitals or underlines. Press your paper in bold characters. • When laying out your poster leave breathing space around you text. Don't overcrowd your poster. • Try using photographs or diagrams. Avoid long numerical lists. • Split headings and sections into sub-headings. Diagram of a cell. The cell is a sphere with a diameter of 10 micrometres. It is composed of a nucleus and a cytoplasm. The nucleus is a smaller sphere with a diameter of 5 micrometres. It contains a nucleolus and is surrounded by a nuclear envelope. The cytoplasm is the fluid-filled space between the nucleus and the cell membrane.	Results Importing images/files ... Images such as photographs, graphs, diagrams, logos, etc. can be added to the poster. To insert scanned images into your poster go through menus as follows (from 'Insert' from the 'File' menu on your computer, add to your poster). The scanned images will be inserted as JPEG or TIFF. JPEG is the preferred format. Be aware of the image size you are importing. The image should be about 10cm wide and 10cm high. Do not use images from the web. Inserting photographs ... For simple graphs use MS Excel or other graphing software in Power Point. Graphs with a scientific graphing program (eg. Sigma Plot, Origin, etc.) should be saved as JPEG or TIFF if possible. For more information see MUI. Diagram of a cell. The cell is a sphere with a diameter of 10 micrometres. It is composed of a nucleus and a cytoplasm. The nucleus is a smaller sphere with a diameter of 5 micrometres. It contains a nucleolus and is surrounded by a nuclear envelope. The cytoplasm is the fluid-filled space between the nucleus and the cell membrane.	Printing and Laminating Once you have completed your poster bring it to the MUI for printing. We will provide a laser proof and you will be able to print it. The final poster will be printed and laminated. How to print your poster until the conference. Allow at least 2 weeks for printing and delivery. Please contact MUI. Cost ... For poster printing and laminating charges contact MUI.
Notes Just highlight the text and replace it ... Simply highlight the text and replace it by typing in your own text or copy and paste your text from a MS Word document or a Power Point presentation. The sub-headings can be moved up or down by clicking on the 'Move' button in the 'Format' menu. The 'Move' button is located in the 'Format' menu. The body text can be moved up or down by clicking on the 'Move' button in the 'Format' menu. The 'Move' button is located in the 'Format' menu. Keep your text to a minimum. Just what you need. The order of the text on the poster background can be changed by clicking on the 'Move' button in the 'Format' menu. The 'Move' button is located in the 'Format' menu.	Conclusion For more information Poster Design, Scanning and Digital Photography, and Image Files. Contact: Medical Illustration Unit University of Wales Hospital PO Box 2000 Email: mu@uwm.ac.uk Website: http://www.uwm.ac.uk	Acknowledgements Just highlight the text and replace it with your text. Replace it with your text.	

This attracts attention but tires 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.



• aeiko



• Peach Green & Seeds



• Rust

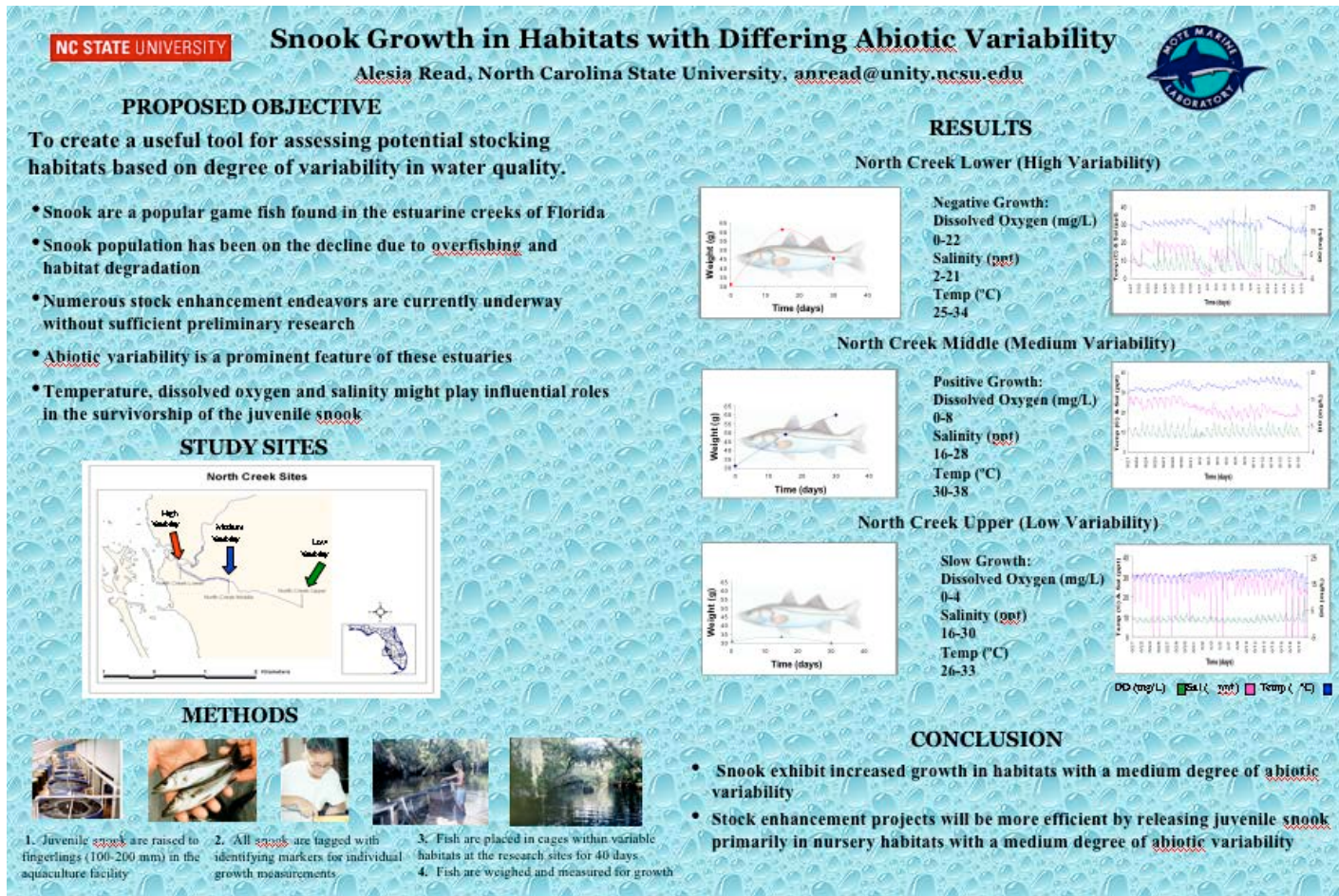


• dollar



<http://www.colorschemer.com/online.html>

Be aware of busy backgrounds





Southern Flounder Exhibit Temperature-Dependent Sex Determination

J. Adam Luckenbach*, John Godwin and Russell Boeski

Department of Zoology, Box 7617, North Carolina State University, Raleigh, NC 27695



Introduction

Southern flounder (*Paralichthys lethostigma*) support variable behavior 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 may help increase the ratio of female flounder in 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.

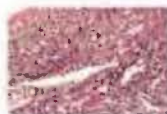
Methods

- Southern flounder broodstock were strip-spawned to collect eggs and sperm for *in vitro* fertilization.
- Fertilized larvae were reared from a natural diet (rotifers *Artemia*) to high protein (protein-based food) and fed until saturation in larval rearing (20%).
- Upon reaching a mean total length of 40 mm, the juvenile flounder were stocked at equal densities into one of three temperature (18, 23, or 28°C) for 245 days.
- Flounder were preserved and later sectioned at 2- μ m sections.
- Sex-distinguishing markers were used to distinguish males (gonatogenesis) from females (gonadosis).

Histological Analysis

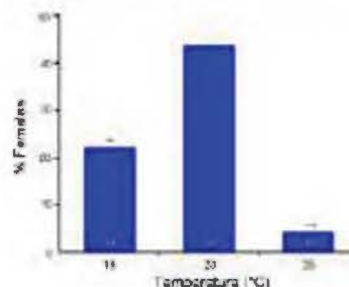


Male Differentiation



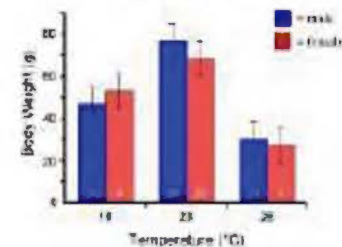
Female Differentiation

Temperature Affects Sex Determination



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

Growth Does Not Differ by Sex



Results

- Sex was discernible in most fish greater than 120 mm long.
- High (28°C) temperatures produced 5% females.
- Low (18°C) temperature produced 22% females.
- Mid-range (23°C) temperature produced 48% females.
- Flounder at high or low temperatures showed reduced growth compared to those at the mid-range temperature.
- Up to 245 days, no difference 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 to 1 year southern flounder.

Acknowledgements

The authors acknowledge the following: Kenneth Johnson of the National Marine Fisheries Service and the University of North Carolina Sea Grant College Program for funding this research. Special thanks to Lee Wilson and Beth Starnes for help in the work.

A little different!

NC STATE
UNIVERSITY

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 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.

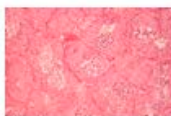
Objective

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

Methods

- Southern flounder ~~hatched~~ were strip spawned to collect eggs and sperm for *in vitro* fertilization.
- Hatched larvae were weaned from a natural diet (~~zooplankton~~) to high protein ~~pellets~~ 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 28°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

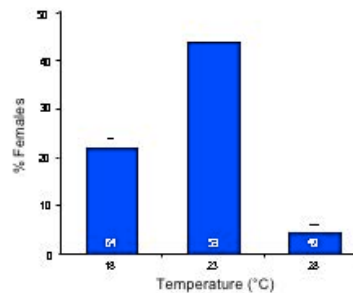


Male Gonad section



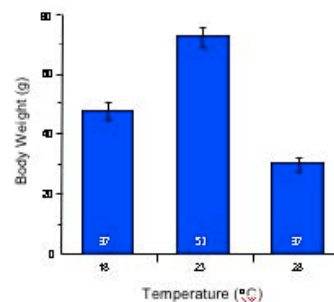
Female Gonad section

Temperature Affects Sex Determination

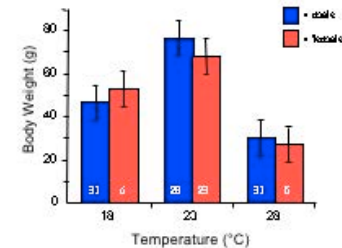


(** P < 0.01 and *** P < 0.001 represent significant deviations from a 1:1 male:female sex ratio)

Rearing Temperature Affects Growth



Growth Does Not Differ by Sex



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.

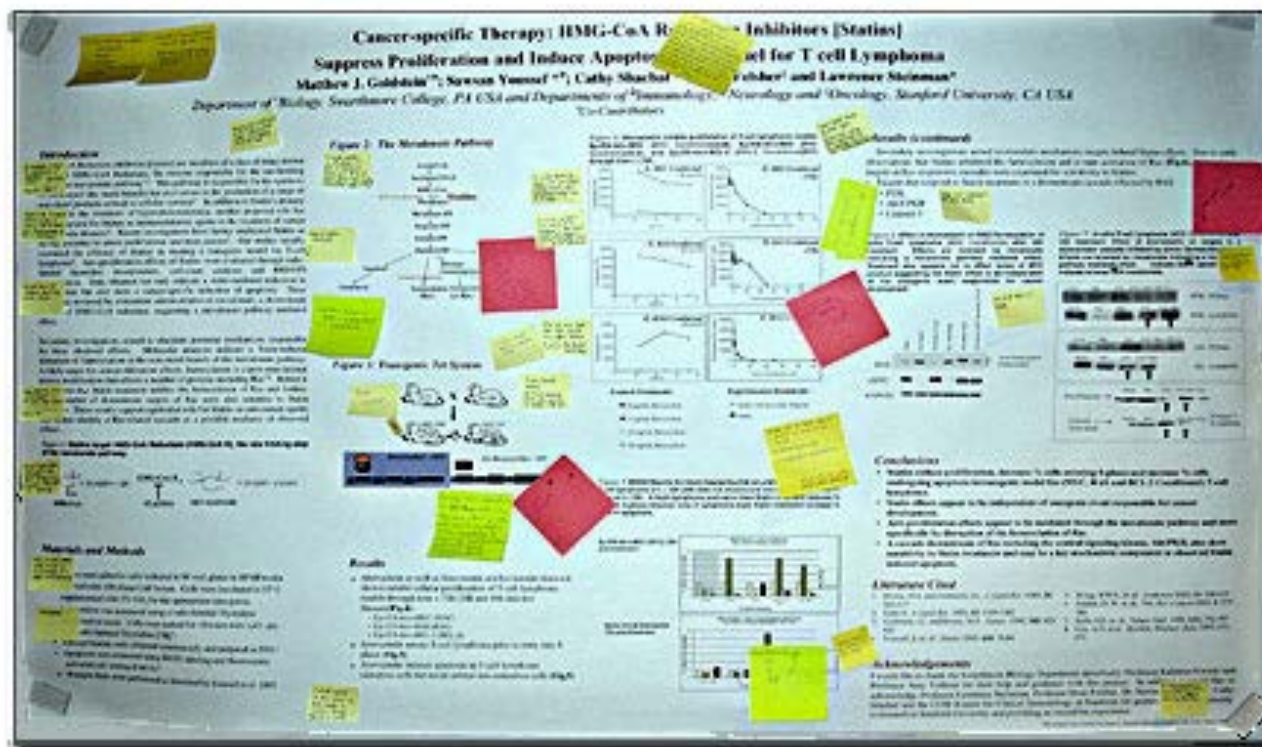
Conclusions

- 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

This research was supported by the National Science Foundation (NSF) Grant #1555555. We thank the following for their assistance: Dr. John Godwin, Dr. Russell Borski, and the staff of the North Carolina State University Aquaculture Research Station.

Edit, Edit, Edit and Evaluate!



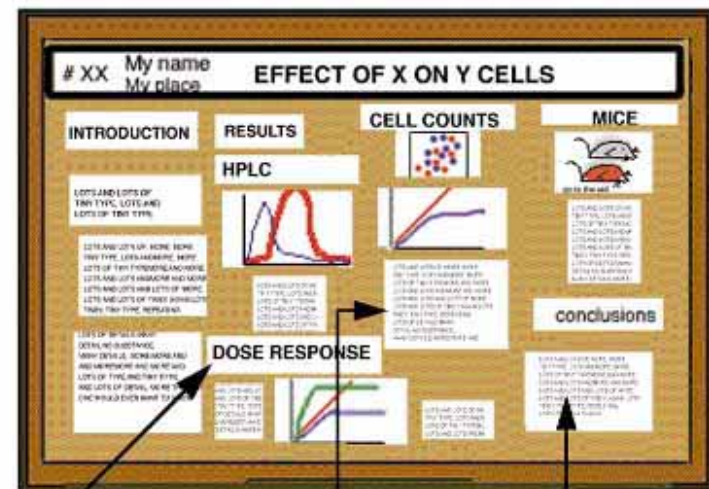
Print out a letter size draft

Can you read the type?

Are these the colors you really want?

Does it look too busy?

Do my main points pop?



Large type
states methods,
not results

Results
artfully buried in a
methods description

Carefully
omits
interpretations

CCMR has 2 poster printers!

Our wonderful computing facilities offers
state of the art poster printing



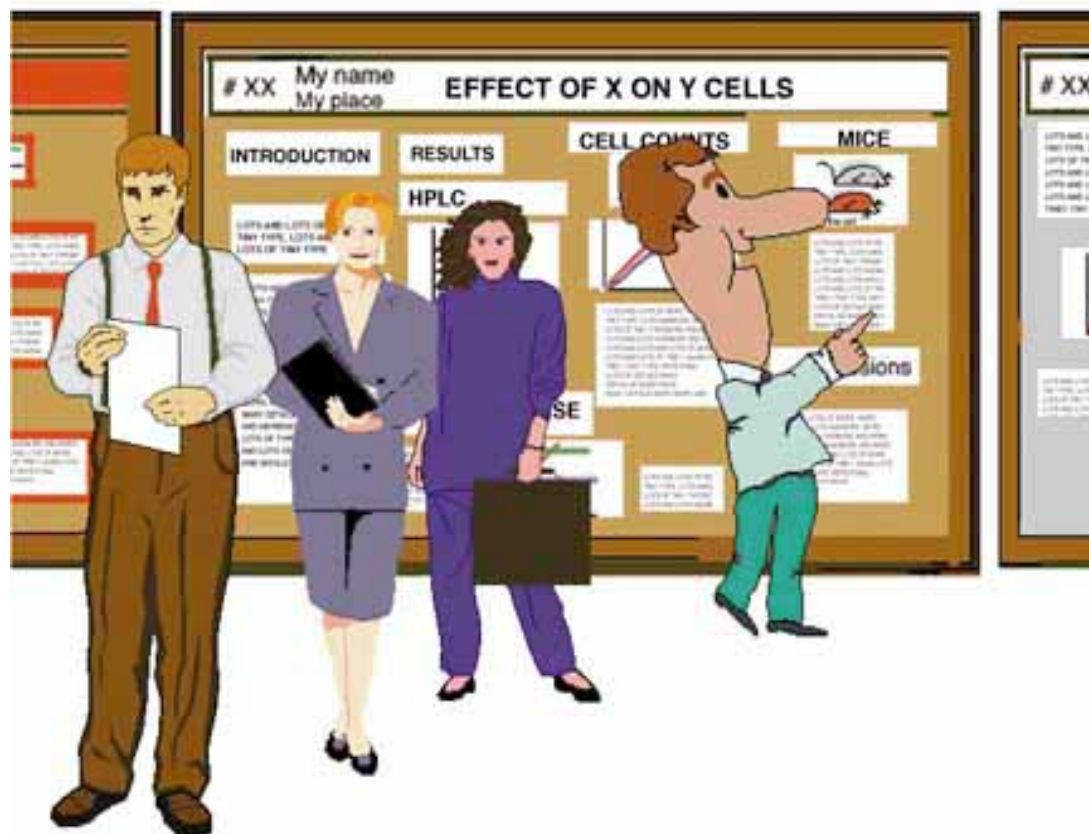
The secret of a good poster:
“Ugly design print ugly poster”

http://cf.ccmr.cornell.edu/cf_newsite/poster_print/index.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

Using a Windbreak Habitat Model Across Broad Landscapes: The Effect of Local Landscape Composition and Geographic Location

George Hess¹, John Poulsen², Raymond O'Connor³, Jeff Bay³

1. Windbreaks as Habitat

Agricultural lands — fields, pastures, and orchards — are managed to produce food and fiber for people. In the U.S. Great Plains, an extensive agricultural landscape, windbreaks have been planted to protect fields, crops, livestock, and livestock from the prevailing wind. Windbreaks provide some of the most needed habitat for birds and other wildlife that people have come to value. Windbreaks make up about 25% of the wooded cover in Nebraska, much of the other wooded cover in surrounding countries.

Although they protect soil from wind erosion and provide habitat for some species, windbreaks also contribute to the fragmentation of prairie grasslands. Prairie grasslands regularly support prairie wildlife such as prairie prairie chickens, upland sandpeps, and prairie dogs.

2. Regional Evaluation of Windbreaks

The Environmental Monitoring and Assessment Program's Agricultural Land Use Group — charged with assessing the ecological condition of U.S. agricultural lands — undertook a pilot study to evaluate the habitat value of windbreaks on a regional basis. We decided to use a bird species richness index to measure the habitat value of individual windbreaks.

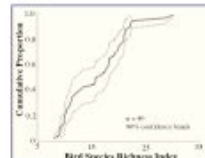
We selected a random sample of 40 windbreaks in Nebraska, based on a screening question on a USDA National Agricultural Statistics Service agricultural survey. In July 1994, field crews measured attributes of 40 windbreaks (see list of the farmers who participated). The data were used to estimate the value of windbreaks in breeding bird habitat in Nebraska.

3. Bird Species Richness Index

We used the U.S. Fish and Wildlife Service's Bird Species Richness Index (BSRI), which estimates the number of breeding bird species a single windbreak can support based on four windbreak attributes.

- Area has the greatest impact on bird diversity; larger windbreaks support more species. Area was measured by calculated per acre.
- Height: Taller windbreaks provide more niches. Height was measured by photographic analysis.
- Vertical Structure: A more structurally complex windbreak provides more habitat niches measured by point sampling.
- Shape: Irregular shapes provide more niches. Shape was measured.

- Forty windbreaks were sampled using a single sampling with a frame stratified by intensity of cultivation.
- Most sample windbreaks 100 to 200 years old.
- Habitat characteristics of each windbreak were measured in 1994.
- Thirty-five farmers allowed windbreaks to remain in 1994.



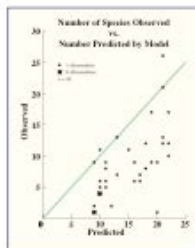
- Using regression factors associated with each sample, we estimated the habitat value of windbreaks for the region (graph left).
- We estimated that half of Nebraska's windbreaks support fewer than 10 breeding bird species (graph left).
- We also estimated that between 87% and 98% of windbreaks are smaller than 1.5 hectares (data not shown), suggesting that few Nebraska windbreaks provide habitat for forest interior or area sensitive birds.

4. Validating BSRI Model

In 1995, a team of three ornithologists revisited 35 of the 40 windbreaks (3 farmers refused further visits between July and early May).

Each windbreak was visited two times. Data were collected between one full hour before and one hour after sunrise. All observed birds were identified to species and recorded using spot mapping techniques. Two ornithologists visited the same windbreak only were placed on the field past through the windbreak for each visit.

Because the windbreaks were new, we assumed all species were detected.



5. Results of Validation

The model overestimates the number of bird species in the Nebraska windbreaks (graph left). However, the relative qualitative ranking of windbreaks is generally preserved. A total of 31 species were observed.

For strong, significant relationships were found between deviation of observed from predicted number of species and any windbreak attributes or the geographic location of individual windbreaks.

Forest interior, area sensitive, and forest edge species occurred in the larger, taller, more complex windbreaks.

Openland and grassland species occurred in the smaller, shorter, less complex windbreaks.

6. Failure of the Model

There are several possible explanations for the failure of the model to predict accurately the number of bird species in the windbreaks.

- 1) Geographic differences in species richness. The model was developed in Kansas, which has 5-20 more species of bird than Nebraska. Breeding Bird Survey species (Brewer's map of North America).
- 2) Dependence on different windbreak characteristics. The number of species in Nebraska's windbreaks depends differently on windbreak characteristics than did for species in Kansas.
- 3) Dependence on landscape-scale characteristics. The number of species in Nebraska's windbreaks depends on characteristics of the surrounding landscape.

7. Local Landscape-Scale Effects

Land cover data were collected for the quarter-section (360 acres) of the containing the sample windbreak. Cover categories were: tree, wooded, crop, grass/forbushes, forest, non-forested, and water. Forest and water were also recorded present (absent).

Landscape metrics computed included relative cover distributions, total edge length, edge:area ratio, number of patches, mean patch size, mean perimeter per patch, and size of largest field.

The relation between observed and predicted number of species was not significantly related to any of the landscape metrics. This suggests that neither a region's number of species using a windbreak depends primarily on landscape attributes.

8. Conclusions

- 1) The Bird Species Richness Index for windbreaks cannot be considered simple to describe species richness or large regional needs without either a preliminary explicitly in adding areas that account for differences in regional species pools.
- 2) Local landscape-scale composition and structure do not explain the failure of the model.
- 3) The presence of species pools in windbreaks is, therefore, probably may be explained by windbreak size and complexity. The model may be used as a tool for predicting the presence or absence of species pools that are producing the most number of species present.

Acknowledgments: This work could not have been done without the many dedicated people at the National Agricultural Statistics Service who helped place and maintain the 1994 data collection effort, the field crews who allowed us to survey their windbreaks, the 100 windbreaks who spent six weeks traveling around Nebraska, and many other people from the University of Nebraska, U.S. Fish and Wildlife Service, Natural Resources Conservation Service, and the Environmental Protection Agency. Funding was provided by the Environmental Protection Agency and the USDA Agricultural Research Service.

1. North Carolina State University, Forestry Department, Raleigh, NC
2. University of Maine, Department of Wildlife Ecology, Orono, ME
3. North Carolina State University, Statistics Department, Raleigh, NC



A bit text heavy
but not too bad.



Determining the Wear Resistance of Occlusal Splints in a Prospective Clinical Study

P. Ottl, P. Schmelz, A. Piwowarczyk, H.-Ch. Lauer

Dept. of Prosthodontics, School of Dentistry (Director: Prof. Dr. H.-Ch. Lauer), ZZMK (Carolasana), J. W. Goethe University, Frankfurt, Germany

Objective

- To determine quantitatively the wear resistance of a newly developed light-curing splint resin over a period in situ of six months.

Materials and Methods

Patients

n = 20 consecutive patients
(mean age: 34.7 years; 12 F, 8 M)

Inclusion criteria

- Natural dentition/fixed denture
- Complete dentition to at least the 1st molar and

for the **stabilization splint sample**:

- Insufficient occlusal support
- Increased occlusal loss of dental hard tissue

for the **distraction splint sample**:

- TMJ pain and
- Complete anterior dislocation of the disk without reduction with terminal reduction
- TMJ osteoarthritis



Fig. 1: Stabilization splint in situ

Resin splint material (Fig. 1)

- Light-curing (400–500 nm) resin made of high-molecular dimethacrylates with organic and inorganic fillers
- Does not contain methyl methacrylate

Study design

- Duration: 6 months
- Types of splints (maxilla, n = 10 each): stabilization splints, distraction splints
- Splint wear mode: 24 hours
- Examinations: before insertion (BI), at 4 weeks (4W), at 3 months (3M), at 6 months (6M)
- Occlusal adjustments were restricted to the time before 4W.

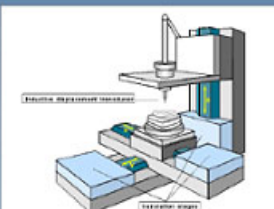


Fig. 2: Test setup

Measuring technology (Fig. 2)

- Vibration-isolated table framework
- 3 translation stages (for directions x, y, and z) (DC-Motor) (PI, Waldborn)
- DV 4 stereomicroscope (Zeiss, Oberkochen)
- WA 20 inductive displacement transducer/Spider8 digital 8-channel measurement unit/Catman 32 software V2.1 (HBM, Darmstadt)
- Local coordinate storage for occlusal contacts during baseline measurements
- Ten measurements each in regions 13, 23, 16, 26 (BI, 4W, 3M, 6M)
- Splint repositioned on remount cast

Results

- The medians of the occlusal vertical gaps/losses (wear, resin loss, water sorption, etc.) are shown in Fig. 3 (stabilization splints) and Fig. 4 (distraction splints).

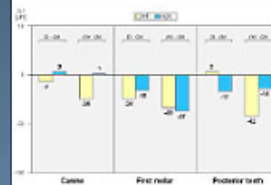


Fig. 3: Occlusal vertical gaps/losses (mm) of the teeth in situ over a period in situ of six months (n = 10 stabilization splints)

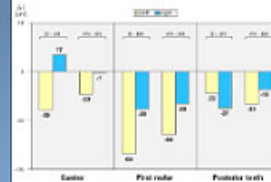
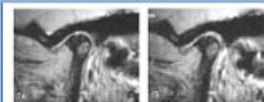


Fig. 4: Occlusal vertical gaps/losses (mm) of the teeth in situ over a period in situ of six months (n = 10 distraction splints)

- Statistical analysis (Mann-Whitney U-test, $p \leq 0.05$) showed no significant differences when comparing the corresponding results of stabilization and distraction splints.



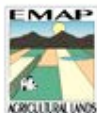
Figs. 5a and b: Lingual edge (maxilla) of the occlusal base with and without splint (Fig. 5a) and with distraction splint inserted (Fig. 5b) following six months of wearing.

Conclusions

- The present study *clinically* confirms the good wear resistance results of the new resin splint material obtained in a previous *in-vitro* study [OTTL et al., Dtsch Zahnärztl Z 52, 342 (1997)].
- Good wear resistance is of great importance for maintaining the therapeutic mandibular position during the treatment period (Figs. 5a and b).



Nice poster



A Framework for Assessing the Condition of Agricultural Lands

George Hess¹, Anne Hellkamp², Mike Munster³, Steve Peck³, Lee Campbell¹, Betty McQuaid⁴, Steve Shafer^{3,5}

Mission: To develop indicators of the condition of agricultural lands within an ecological framework, and to monitor and evaluate this condition on a regional basis.



Sustainable agriculture has been discussed, defined, and discussed in countless papers.

Definitions tend to be broad and encompass ecological, economic, social, and even policy dimensions. Although these dimensions are universal, each may be examined independently.

In our efforts, we sought methods to examine only the ecological aspects of sustainability.

The ecological condition of agricultural land is defined by its productivity and the degree to which valued things and abiotic resources are conserved and protected.

Agricultural land in good condition is productive and does not compromise valued resources. Sustainability is the ability to maintain good condition over time.



Indicators were selected to reflect crop productivity and land stewardship.

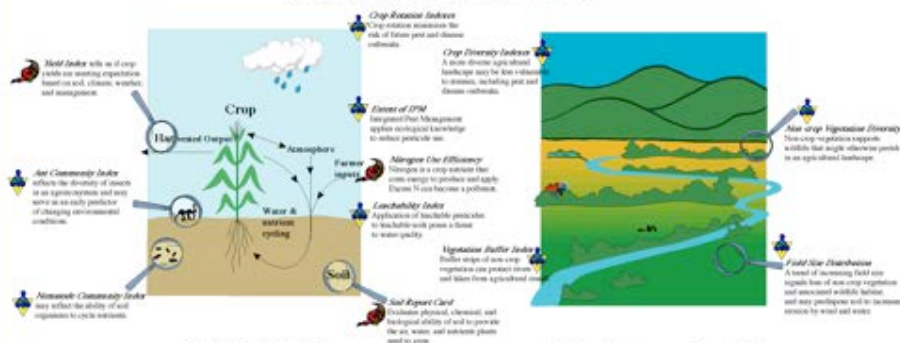
In making an assessment, condition is reported for each indicator. An overall condition may also be reported, but depends critically on the relative weighting of the goals for agricultural lands.

For sustainability, one can examine trends in crop productivity and stewardship practices.

Potential Indicators for Annually Harvested Herbaceous Cropland

As a starting point, we chose to concentrate our efforts on developing indicators for **annually harvested herbaceous cropland** — **land planted with crops that are harvested every year** whether the plants are annual or perennial. Common examples are corn, wheat, soybeans, alfalfa hay, and sorghum.

We also endeavored to supplement, rather than duplicate, existing efforts. Our conceptual framework is flexible enough to incorporate indicators based on data from other monitoring efforts. For example, an erosion indicator could be developed using the USDA Natural Resources Conservation Service's National Resource Inventory data.



Fields are for crops . . .

. . . but landscapes are for all of us.

Acknowledgements: The EMAP Agricultural Lands Resource Group thanks the many individuals and organizations that made this effort a success. The individuals are too numerous to mention, but organizations include the USDA's Agricultural Research Service, Forest Service, National Agricultural Statistics Service, and Natural Resources Conservation Service; the U.S. Environmental Protection Agency; North Carolina State University; University of Maine; Oregon State University; University of Nebraska; and, with 1 given the list of organizations is pretty long, too. Thanks to all!

1. North Carolina State University, Forestry Department, Raleigh NC;
2. Duke University Medical Center, Durham NC;
3. North Carolina State University, Department of Plant Pathology, Raleigh NC;
4. USDA Natural Resources Conservation Service, Raleigh NC;
5. USDA Agricultural Research Service, Raleigh NC.



Where do I begin?

PREVALENCE OF OBESITY AMONG INNER CITY LATINO CHILDREN AND ADOLESCENTS

Nazrat M. Mirza MD, ScD, Jill Merchant MS, Leslie Beker, PhD

Children's National Medical Center and George Washington University School of Medicine and Health Sciences, Washington, DC

Background: Obesity is a multi-causal and public health problem facing children and adolescents in the U.S. Of particular significance is the increasing prevalence of obesity and its complications among the Latino population. Among this ethnic group there is a strong sense of family and children are a priority. Because of the pressures placed on children, they may be a misplaced emphasis that children should not be denied food or other favorite meals at TFC. Obesity in children and adolescents is concerning not only because of the associated health and psychosocial consequences, but also because obese children tend to become obese adults. Since obesity is associated with being chronic disease, it will have no insurance impact on the healthcare system.

Purpose of Study: To estimate the extent of obesity among inner city Latino children and adolescents with the overall goal of assessing the need for an obesity intervention program.

Study Design: Cross-sectional and descriptive study of children and adolescents aged 4 to 17 years were randomly selected from well-child visits to Children's Hospital's Latino Medical Clinic for the calendar year 2006. The study was an attempt of 80% to present a healthy, representative sample of Latino children, predominantly from El Salvador. Information collected from the study included height, weight, blood pressure, Tanner classification, history, and physical findings consistent with obesity complications. Height (Leslie Beker, MD) was measured from stadiometer and weight (Jill Merchant, MD) was measured using BMI measure.

Results: The distribution of the study sample is shown in Table 1. About 50% were females. The mean age was 10.4 years with a SD of 3.5 and a range of 4.0 to 17.0 years. The mean BMI was 20.8 with a SD of 3.4 and a range of 13.1 to 31.0. Overall 40% of the children and youth were overweight (BMI ≥ 25 percentile) or at risk for overweight (BMI ≥ 10th percentile), with an almost equal distribution between the two categories. Table 2: Males were more overweight and at risk for overweight than females, but the gender difference was not statistically significant. The prevalence of overweight was highest for girls ages 10 to 17 years.

Table 1 - Population statistics

Variable	Frequency (%)
Gender	
Male	46.4
Female	53.6
Age Categories (years)	
4-5	10.1
6-8	22.4
9-10	27.4
11-12	19.4
13-15	10.4
16-17	10.4
18-19	9.2

Results continued: Table 3 shows the distribution of overweight and at risk for overweight by age category. There did show that prevalence of overweight and at risk for overweight is high in children as young as 4 to 5 years. Although the prevalence of overweight and at risk for overweight was lower in the age group 16-17 years, the difference was not statistically significant (Fisher's Exact test p=0.84 and p=0.10 respectively).

Anthropometry was higher among the overweight than the non-overweight children and youth (p<0.001). Fisher's Exact Test. There was no difference in the frequency of occurrence of other signs such as hypertension, diabetes, asthma, sleep apnea, learning difficulties, behavior problems, osteoporosis, and ADHD between the overweight and non-overweight group. Only 7% of all the overweight children had their cholesterol levels checked. The cholesterol levels ranged from 132 to 300 mg/dL. The percent of the children and their parents who were high school educated, and the range was 17.0 to 77.0%. There was no significant association between overweight and parents or children's school parents in this study overall. Only 20% of the overweight children and youth were diagnosed and had been seen in their study regarding their overweight status by their health care providers. There were no referrals for overweight interventions noted within the study.

Table 2 - BMI distribution

BMI Category	Frequency (%)
At Risk for overweight (BMI 15-24.9)	
1. Male (n=121)	20.8
2. Male (n=70)	22.4
3. Female (n=47)	19.4
Overweight (BMI ≥ 25.0) (Percentiles)	
1. Male (n=121)	22.4
2. Male (n=70)	18.1
3. Female (n=47)	20.8

Table 3 - At Risk for Overweight and Overweight by Age Category

Age Category (Years)	At Risk for Overweight (%) (BMI 15-24.9)	Overweight (%) (BMI ≥ 25.0)
4-5 (n=10)	10.0	10.0
6-8 (n=22)	36.4	22.4
9-10 (n=27)	9.3	18.5
11-12 (n=19)	16.3	27.9
13-15 (n=19)	21.1	21.1
16-17 (n=10)	20.0	10.0

Conclusions & Recommendations: The prevalence rate for overweight and at risk for overweight among children and youth in this inner city Latino community is more than twice the national average. Primary health care providers need to acknowledge and accept the presence of obesity and overweight in children and adolescents to study and provide appropriate management of the problem. Targeted intervention and prevention strategies for overweight and obesity in children and adolescents are urgently needed for this population.



I'm feeling sleepy

Kyphoplasty is an important treatment option that provides immediate mobility and return to activities of daily living to patients with acutely painful vertebral body compression fractures secondary to osteoporosis. Kyphoplasty facilitates fracture reduction and deformity correction. While reduction is more likely in acute fractures (four months or less), it has been seen in fractures over one year old. Kyphoplasty also provides rapid pain relief in the nearly all patients, and this result is independent of fracture reduction. The safety profile of Kyphoplasty compares favorably to the published safety profile of vertebroplasty.



OK, but
which way
do I go?



Just highlight text and replace with your own text.
Replace this with your text.



Perfect!

中國社會科學院
中國社會科學院
中國社會科學院

Sistema de gestión pública

- Participación
- Transparencia
- Responsabilidad
- Eficacia y Eficiencia
- Equidad

Diagnóstico
Identificación de problemas y necesidades
Análisis de la situación actual

Planificación
Definición de objetivos y metas
Elaboración de planes de acción

Implementación
Ejecución de las acciones planificadas
Monitoreo y control del proceso

Evaluación
Medición de los resultados
Análisis de la efectividad y eficiencia



WHICH IS MORE IMPORTANT: NUMBER OF PATCHES OR CONNECTIVITY?

Derm Kalisak, PES Student

Contact: dkalis@cornell.edu

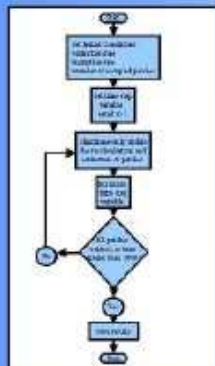
INTRODUCTION AND OBJECTIVES

Metamaterials made of randomly distributed inclusions could benefit from a clear understanding of the effects of different random distributions so that the metamaterial has been able to respond to the stimulus. In patches, a large number of randomly distributed patches is expected to be effective. It is unclear to them what configuration strategy is more effective, is a better approach to add new patches to the existing patches, or is a better to replace the effect of existing patches with new patches?

It is well known, in a random effect, the most likely to have is a random distribution. In patches, if the connections between the inclusions are not random, it could lead to a more effective response. In patches, if the connections between the inclusions are not random, it could lead to a more effective response. In patches, if the connections between the inclusions are not random, it could lead to a more effective response.

In patches, if the connections between the inclusions are not random, it could lead to a more effective response. In patches, if the connections between the inclusions are not random, it could lead to a more effective response. In patches, if the connections between the inclusions are not random, it could lead to a more effective response.

THE PROGRAM



ASSUMPTIONS AND LIMITATIONS

Additional random patches were added to a system which had the number of patches to be added. The number of patches to be added was determined by the number of patches to be added.

Adding patches to the existing patches was done by adding new patches to the existing patches. The number of patches to be added was determined by the number of patches to be added.

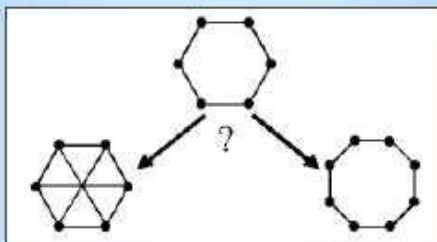
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THE ISSUE



A metamaterial is a collection of discrete patches, in which individual patches are typically periodic and are connected. In the long-term, the connectivity of the metamaterial is improved more by adding new patches or by increasing the number of connections between existing patches?

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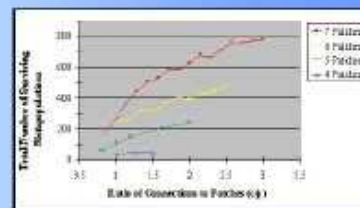


RESULTS

Tracked the results by making histograms which represent the population

- number of patches (N) 4, 5, 6, and 7
- randomly connected to randomly connected population
- the effect of adding patches to the existing patches
- the effect of adding patches to the existing patches
- the effect of adding patches to the existing patches

The overall connectivity of the network was tracked by the number of connections between the patches. The number of connections between the patches was tracked by the number of connections between the patches. The number of connections between the patches was tracked by the number of connections between the patches.



CONCLUSIONS

The number of the total patches that were added, adding patches to the existing patches was done by adding new patches to the existing patches. The number of patches to be added was determined by the number of patches to be added.

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Nice flow,
but too
metallic

Fusing ^{18}F FDG-hybrid PET To CT Images Significantly Alters Treatment Planning In The Radical Treatment Of Non-Small Cell Lung Carcinoma

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Abstract

A prospective clinical study was conducted to determine the impact of integrating PET/CT and CT images on the treatment planning of non-small cell lung carcinoma. Twenty-two patients were included in the study. The primary endpoint was the change in the volume of the gross tumor volume (GTV) and the volume of the planning target volume (PTV) when PET/CT was integrated with CT. The results showed that the integration of PET/CT significantly altered the treatment plan in 100% of cases.

Potential of ^{18}F FDG-hybrid PET for Radiation Therapy Planning

"Fluoro-deoxyglucose (FDG) is a glucose analogue that is metabolically trapped in cells. Many malignant lesions are associated with increased glycolysis and thus demonstrate increased uptake of FDG. In lung cancer staging, FDG-PET has proven to have greater sensitivity and specificity than CT." In radiation planning, it may help to distinguish between those other processes such as inflammation. As a functional imaging modality, FDG-PET may complement the anatomic data from CT.



Figure 1. FDG-PET provides functional information which complements anatomic information obtained from CT. Images are shown in axial view. The PET scan is shown on the left and the CT scan on the right.

Study Objective: To determine the impact of integrating ^{18}F FDG-hybrid PET images with CT planning images on treatment planning of patients with NSCLC.

Problem

Lung cancer with radical radiation therapy for non-small cell lung carcinoma (NSCLC) is often poor. Time escalation with FDG-PET has the potential to improve outcome. The evidence base with any dose escalation approach is the ability to accurately define the gross tumour volume (GTV). With increasing imaging techniques such as PET or MRI, it is often difficult to distinguish malignant from normal tissues, particularly when anatomic, parametric, or normal tissue displacement occurs. CT and MRI are also not well suited to the determination of, e.g., metastatic lymph nodes are involved. A combined PET image sensitive to lymph node involvement would help guide treatment strategies.

Prospective Study Design

Imaging: in treatment position and same day

FDG-hybrid PET

- Minimum 1 hour before PET
- 4 - 10 mCi ^{18}F FDG injected
- Image 1 hour 1 hour's PET/CT scan
- Minimum 30 min before PET
- 10 - 15 mCi single intravenous injection
- Scan on 4.0 x 4.0 x 4.0 cm

CT simulation

- Right 1 mm axial slices
- Minimum 10 mm CT
- Repeat CT with same slice thickness and same slice interval
- Scan on 4.0 x 4.0 x 4.0 cm

Image Registration

The CT and PET-PET scans were co-registered using a 3D rigid body translation, rotation program and rigid internal markers. All registrations achieved a composite deviation of less than 1 mm.

Patient Selection

- confirmed for radical radiation therapy
- able to be in treatment position for 30 minutes
- appropriate for advanced consent
- preclinical selection for poorly defined tumours on diagnostic CT

Treatment Planning

- GTV localized using CT only and then with PET/CT by each of 3 physicians
- separately plans generated for the CT based PTVs and PET/CT based PTVs
- AP-PV, AP-PV for 30 Gy and oblique-lateral fields for 30 Gy to the tumours
- Chest dose restricted to 40 Gy
- DVHs generated for PTVs and cord

Impact of FDG-hybrid PET on Patient Management

- In 5/26 (19%) patients, radiation therapy was changed from radical to palliation intent.

Figure 2. Two examples where therapy was changed from radical to palliation intent because of the integration of PET/CT data. In PET/CT scans, the gross tumor volume (GTV) and the planning target volume (PTV) are shown in red. The CT scan is shown in gray. The PET scan is shown in blue. The PET scan shows a large area of increased uptake (red) in the right lung, which was not visible on the CT scan.



Impact of Co-registered FDG-hybrid PET on PTV Coverage

- In 9/23 (39%) patients, the volume of PTV_{CT/PET} receiving at least 90% of the prescribed dose with the CT only based plan was less than 90%.



Figure 3. Two examples in which the volume of PTV_{CT/PET} receiving at least 90% of the prescribed dose with the CT only based plan was less than 90%. In PET/CT scans, the gross tumor volume (GTV) and the planning target volume (PTV) are shown in red. The CT scan is shown in gray. The PET scan is shown in blue. The PET scan shows a large area of increased uptake (red) in the right lung, which was not visible on the CT scan.



Figure 4. Coverage of PTV_{CT/PET} based on the CT only plan. The results on the coverage of PTV_{CT/PET} in 23 cases, less than 90% of the PTV_{CT/PET} received at least 90% of the prescribed dose (red) when the CT only plan was used. In 9 cases, the coverage was less than 90% of the prescribed dose (red) when the CT only plan was used.

Impact of FDG-hybrid PET on Spinal Cord Dose

- In 10/23 (43%) cases, the maximum cord dose was reduced by more than 200 cGy with CT-FDG data.

Figure 5. The maximum dose to the spinal cord in the CT only and CT-FDG plans are shown for each patient. The results on the average of the physician plans. A dose reduction of > 200 cGy was achieved in 10 cases, when PET data were added to the CT.



Discussion

The impact of integrating PET/CT with CT simulation was assessed in terms of patient management. PET coverage, and maximum dose to spinal cord, in 10% of patients. PET/CT findings resulted in a change in management in 10% of cases. The CT based plan would have resulted in significant geographic miss, and in 10% of cases the cord dose was reduced by 200 cGy or more. The impact was most significant in those with reduction of previously unrecognized metastases. For the former group, others have reported changes in field size when using PET/CT data.¹ In this study, plans were generated separately for the CT/PET localized independently to the physician and results based on the average. Radiation therapy planning requires the integration of PET/CT data into the planning process. PET/CT can play a role in reducing physician variation in localization.

Conclusions

The finding of PET/CT hybrid PET images in CT planning images significantly altered treatment plans in 100% of cases. Integration of PET/CT hybrid PET into treatment planning increases the probability of geographical misses and thereby is a fundamental step in PET/CT for lung cancer.

References

1. Wang Y, et al. J Clin Oncol 2005; 23: 175-179.
2. Caldwell CB, et al. J Clin Oncol 2005; 23: 175-179.
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Authors Acknowledgements

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I' ve fallen,
and I can' t get up



LESSONS LEARNED FROM AIRWAY PRESSURE RELEASE VENTILATION (APRV)

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INTRODUCTION

Airway Pressure Release Ventilation (APRV) (a.k.a. BiPAP) has been previously demonstrated to be a useful modality to manage patients with acute lung injury (ALI) or the acute respiratory distress syndrome (ARDS). As this is a fundamentally different mode than conventional cyclic ventilation, we required a single institution's experience with APRV to determine safety, complication detection, and efficacy at resolving hypoxemia and hypercarbia.

METHODS

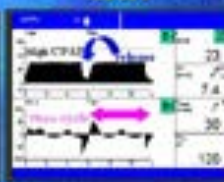
Consecutive patients transitioned from either volume or pressure targeted ventilation to APRV (Dräger Esch 4 Pulmonary Wocklation) at a University hospital surgical ICU were retrospectively reviewed. Patients initially ventilated with APRV were excluded. Initial APRV settings to correct hypoxemia ($pO_2 \leq 60$ torr or $FIO_2 \geq 0.9$) were a P_{high} at the prior plateau pressure, a T_{high} of 6.0 sec and a T_{low} of 0.8 sec. Hypercarbia ($pCO_2 \geq 55$ torr and $pH \leq 7.3$) patients were set at a T_{high} of 5.0 sec and a T_{low} of 1.0 sec. Settings were adjusted to resolve hypoxemia and hypercarbia. IRB approved abstracted data included principal diagnoses, ventilation parameters, laboratory values and ventilator associated complications. Data before and after APRV were compared using a two-tailed paired t-test or Chi-square as appropriate; significance was assumed for $p < 0.05$ (^{1,2}).

RESULTS

Demographics

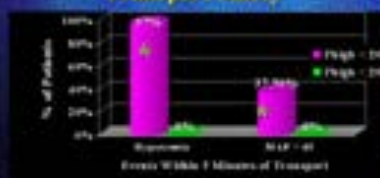


APRV

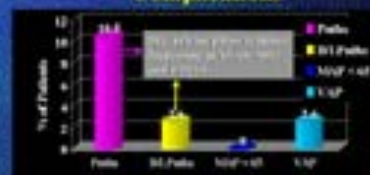


Element	Value
% Hypoxemia	88%
% Hypercarbia	12%
Time to $SpO_2 \geq 92\%$	7 ± 4 min
Time to $FIO_2 \leq 0.6$	5.2 ± 0.9 hr
Time to $pCO_2 \leq 40$ torr	42 ± 7 min
Time to max ΔpCO_2	76 ± 12 min
Mean change in V_E	-3.5 ± 0.9 L/min ³

Transport Safety



Complications



CONCLUSIONS

1. APRV is a safe rescue mode for hypoxemic or hypercarbic respiratory failure and requires a significantly lower V_E than conventional ventilation.
2. Decreasing release phase volumes and a rising pCO_2 are strong indicators of pneumothorax in a patient on APRV. Routine end-tidal CO_2 monitoring is recommended.
3. Preparation for safe intra-hospital transport may be keyed to the P_{high} required for oxygenation and ventilation. Patients requiring a $P_{high} > 20$ cm H_2O should be transported on the ventilator.



Welcome to
the 80's
Fer sure!

and Highlight the text and replace it with your own text. Replaceable
-do so.



This works!



Helpful sites on poster presentations:

<http://colinpurrington.com/tips/academic/posterdesign>

<http://www.ncsu.edu/project/posters/NewSite/>

LiLynn Graves

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