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!

It's just an illustrated abstract

POSTER 9

CORNELL POLYMER OUTREACH PROGRAM

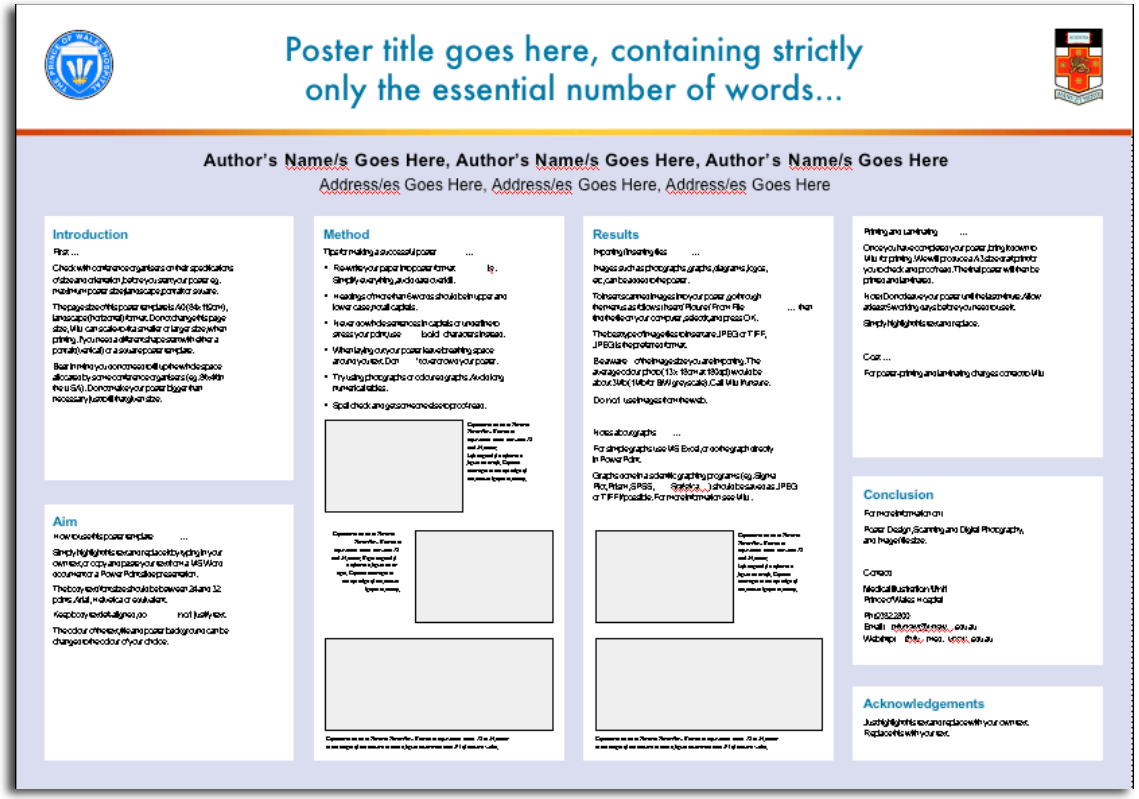
POSTER SESSION
May 23, 2005

SIMULATIONS OF POLYMER NETWORKS WITH A BIMODAL CHAIN LENGTH DISTRIBUTION

Dhananjay Bhawe, Claude Cohen and Fernando Escobedo

School of Chemical and Biomolecular Engineering

We have conducted molecular simulations of end-linked polymer networks with a bimodal chain length distribution. Short and long chains with lengths differing by an order of magnitude make up a typical network. Such networks have been experimentally demonstrated to have superior mechanical properties (modulus and toughness) as compared to the corresponding unimodal networks. The causes of this enhancement are not well understood. It is also not clear which combination of chain molecular weights in what proportion will yield this improvement. We have systematically explored networks with a range of chain lengths in varying proportions to explore the causes of mechanical enhancement and to optimize mechanical properties. Two possible reasons for better mechanical properties have been proposed in the literature: finite extensibility of the short chains and clustering of short chains. When the short chains are so short as to be non-Gaussian, they reach their maximum extensibility at smaller deformations than longer chains – this makes the network more difficult to deform and hence stronger. Also, short chains tend to cluster when they contribute most of the mole fraction in the network while the long chains contribute most of the volume fraction – short chain clusters act as reinforcing regions to make the network stronger. We changed chain lengths and proportions of long and short chains to explore all combinations of the following scenarios: clustered and non-clustered short chains and Gaussian and non-Gaussian short chains. We also looked at the microscopic structure of the various networks and studied bond breakage. We conclude from the study that the main reason for the mechanical enhancement is the finite extensibility of short chains and that clustering protects short chains from excessive deformation but does not improve mechanical properties.



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

First ...

Check with conference organisers on their specifications of size and orientation before you start your poster eg. maximum poster size (landscape, portrait or square).

The page size of this poster template is A0 (841x1189mm), landscape (horizontal) format. Do not change this page size. MS Visio can scale-up to a smaller or larger size when printing. If you need a different shape such as either a portrait (vertical) or a square poster template.

Bear in mind you do not need to fill up the whole space allocated by some conference organisers (eg. 36x48in the USA). Do not make your poster bigger than necessary. Just scroll through size.

Aim

How to use this poster template ...

Simply highlight this text and replace it by typing in your own text, or copy and paste your text from a MS Word document or a PowerPoint presentation.

The body text for sections should be between 24 and 32 points, Arial, Helvetica or equivalent.

Keep body text left-aligned, do not justify text.

The colour of these yellow and poster background can be changed to the colour of your choice.

Method

Tips for making a successful poster ...

- Re-write your paper into poster format. Be ... Simplify, everything, and do not overfill.
- Headings of more than 6 words should be in upper and lower case not all capitals.
- Never down case sentences in capitals or unearthen to stress your point, use bold characters instead.
- When styling out your poster leave breathing space around your text. Don't crowd rows your poster.
- Try using photographs or coloured graphs. Avoiding numerical tables.
- Spell check and get someone else to proof read.

Results

Importing (Inserting) files ...

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

To insert scanned images into your poster go through them one as follows (Insert, Picture, From File ... then find file on your computer, select it and press OK.

The best type of image files to insert are JPEG or TIFF. JPEG is the preferred format.

Be aware of the image size you are importing. The average colour photo (13x 18cm at 180dpi) would be about 3Mb (1Mb for B/W greyscale). Call Viki if unsure.

Do not use images from the web.

How about graphs ...

For simple graphs use MS Excel, or cut the graph directly in Power Point.

Graphs done in scientific graphing programs (eg. SigmaPlot, Origin, SPSS, Statistica ...) should be saved as JPEG or TIFF if possible. For more information see Viki.

Printing and Laminating ...

Once you have completed your poster, bring it down to Viki for printing. She will produce a A3 size draft print for you to check and proof read. The final poster will then be printed and laminated.

Note: Do not leave your poster until the last minute, allow at least 5 working days before you need it to print.

Simply highlight this text and replace.

Cost ...

For poster printing and laminating charges contact Viki

Conclusion

For more information on

Poster Design, Scanning and Digital Photography, and Image Resize.

Contact

Medical Illustration Unit
Prince of Wales Hospital

Ph: 9382 3800
Email: ...
Website: ...

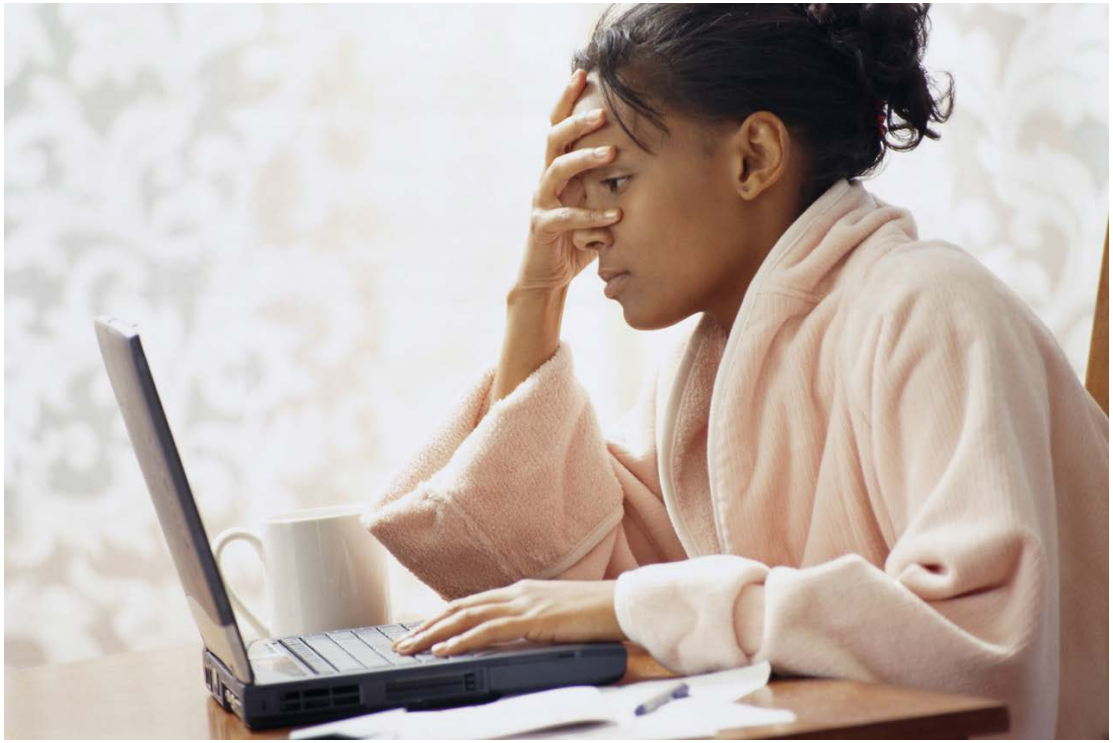
Acknowledgements

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

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



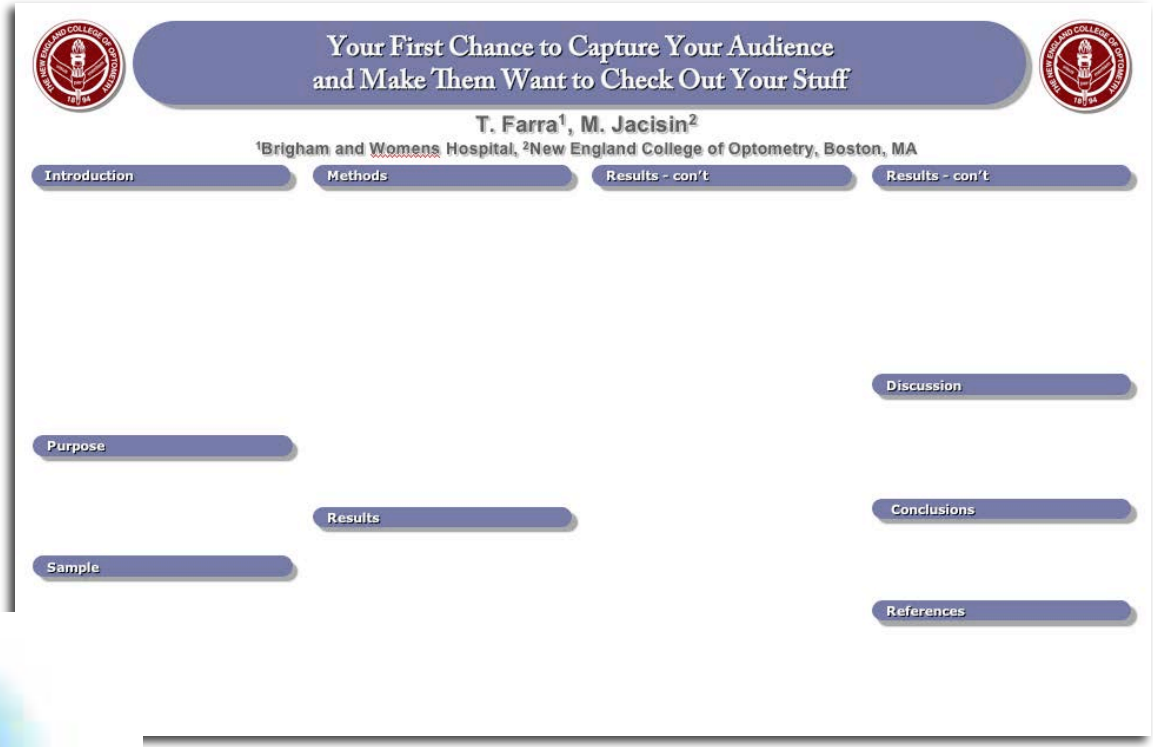
@#&%!@#$, I have 12 hours to throw this thing together and get it printed before it's due.

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!

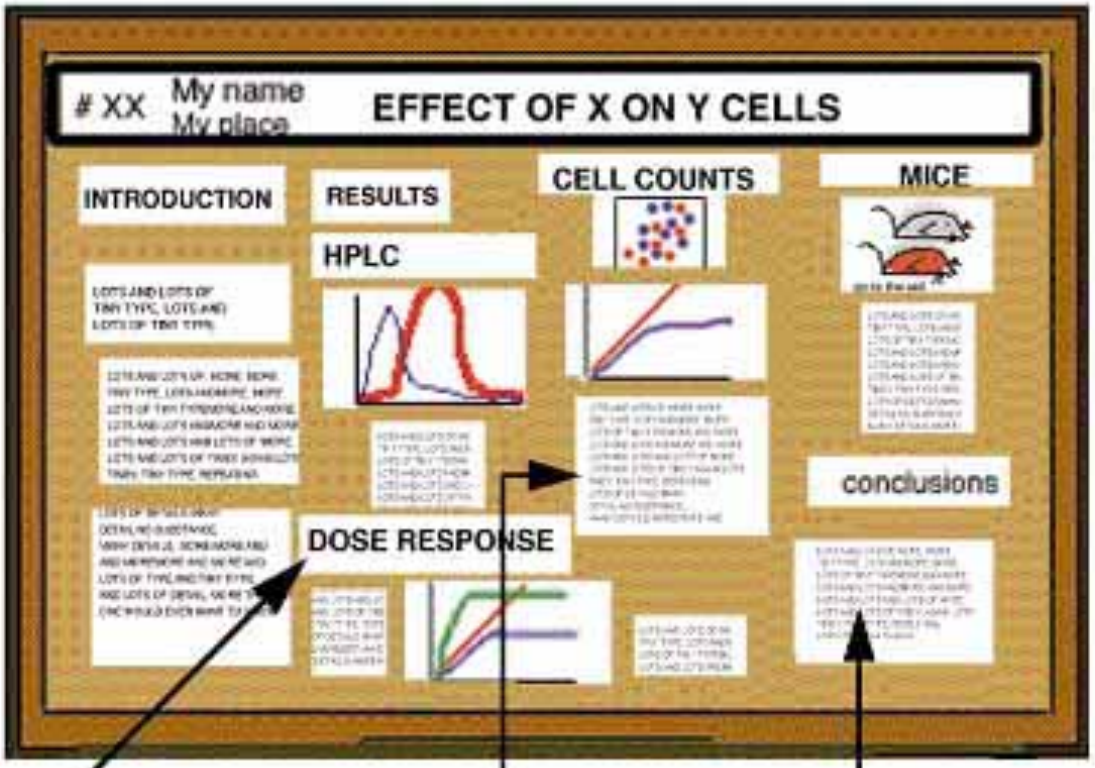
Simplify your paper into poster format

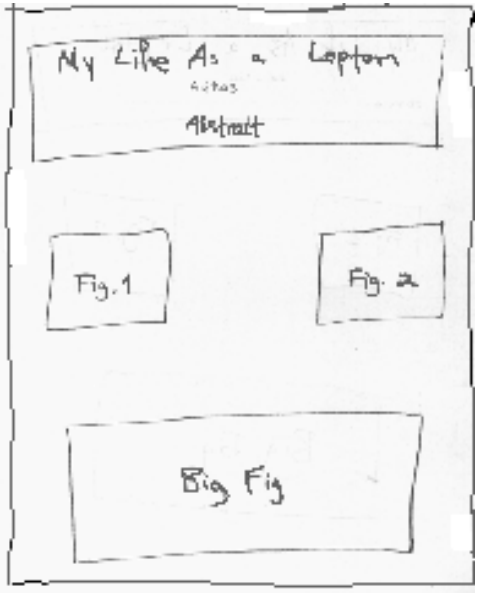


Find out the size required!

Who's my audience?

Remember, most of these "scientists" come for the free booze

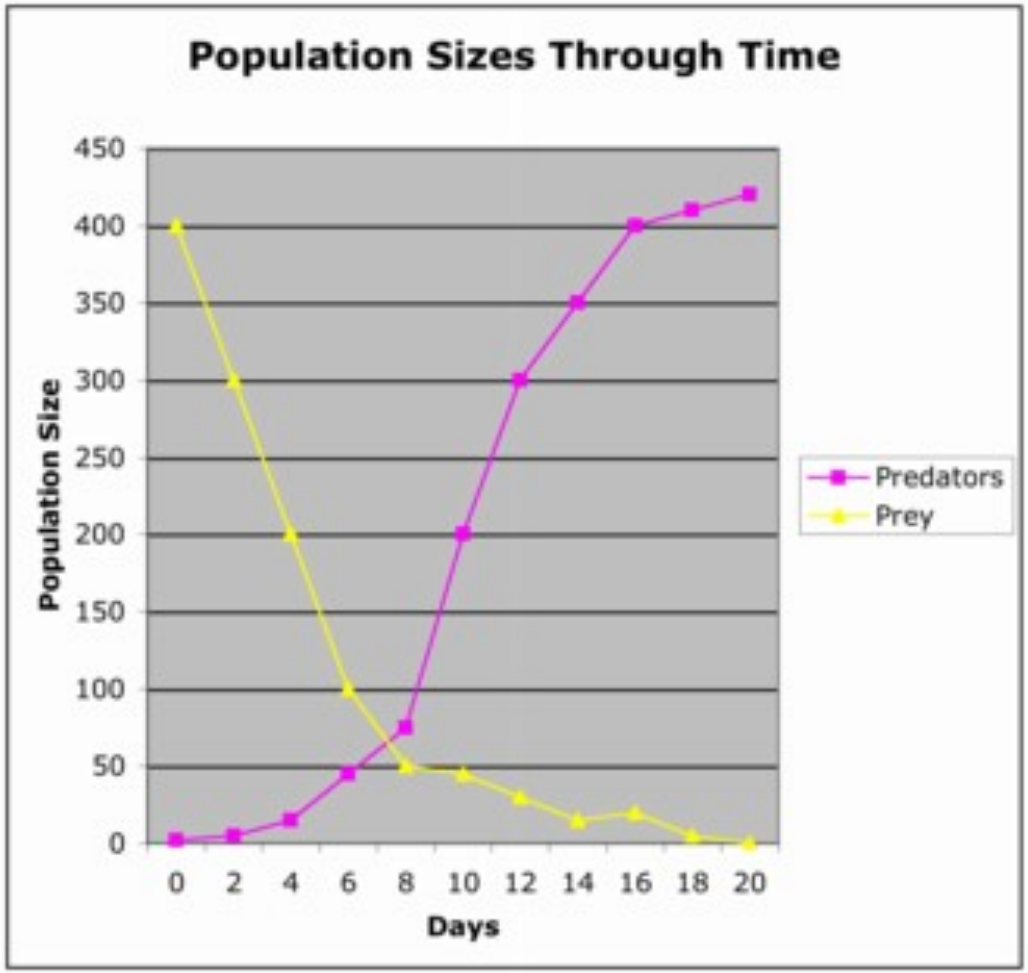




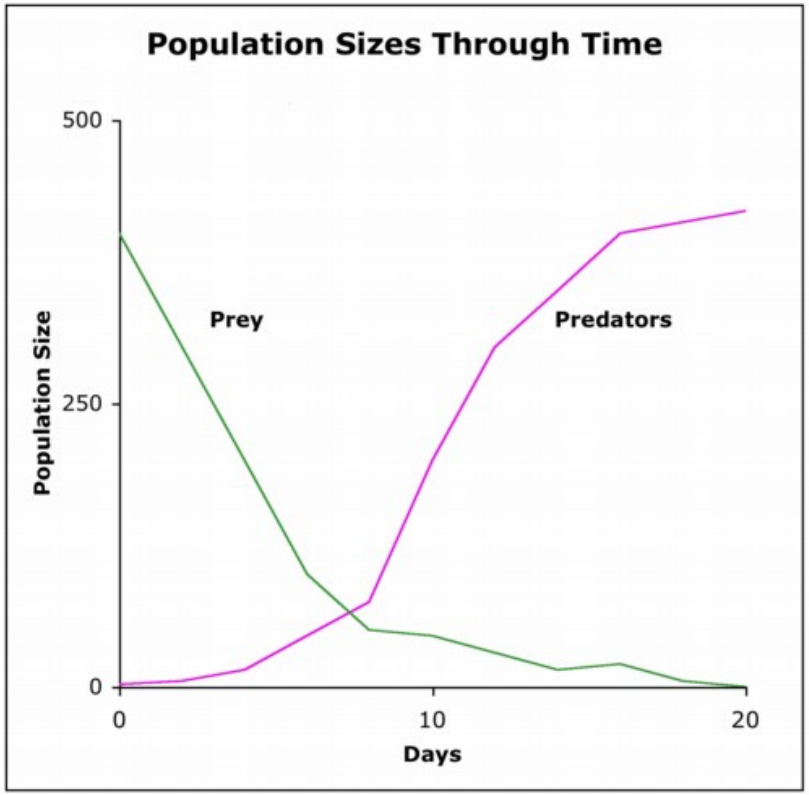
Start putting together your 2 main elements

1) Simple, effective data displays

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



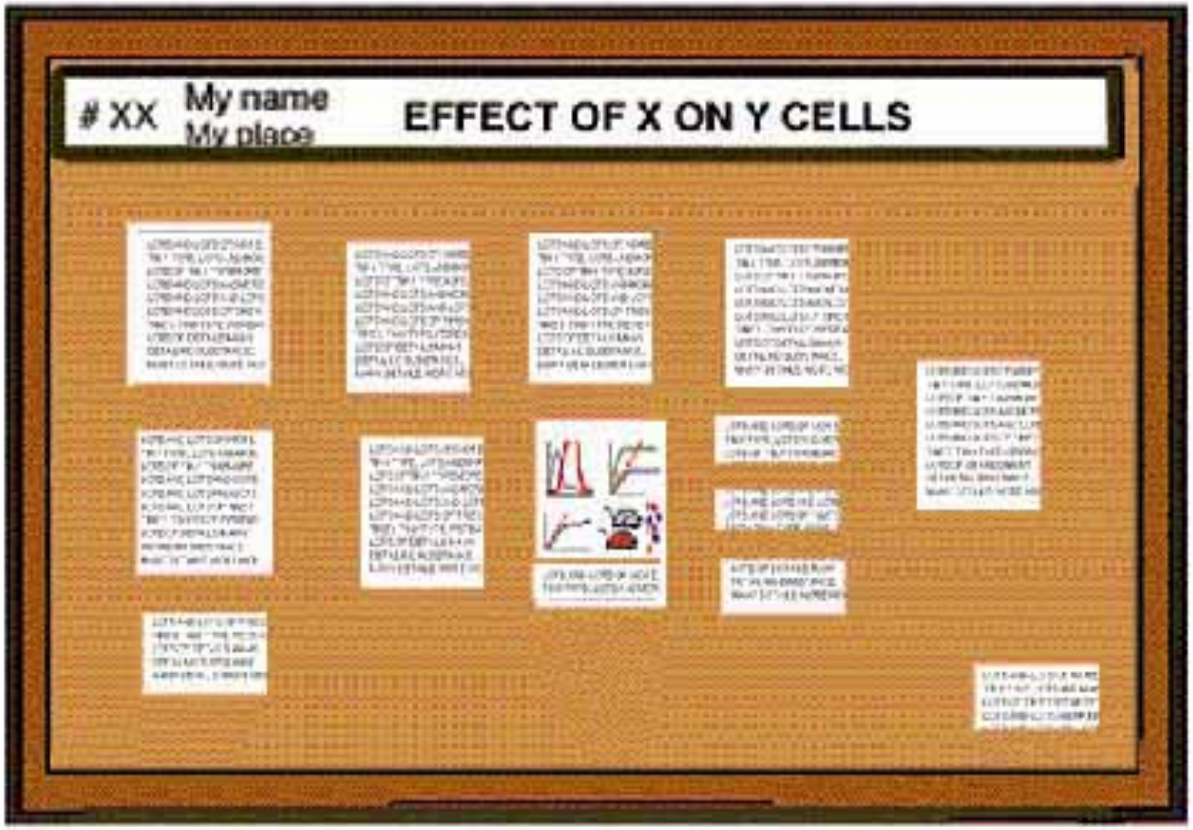
Population Sizes Through Time
Population Size
450
400
350
300
250
200
150
100
50
0
0
2
4
6
8
10
12
14
16
18
20
Days
Predators
Prey


Population Sizes Through Time
Population Size
500
250
0
0
10
20
Days
Prey
Predators

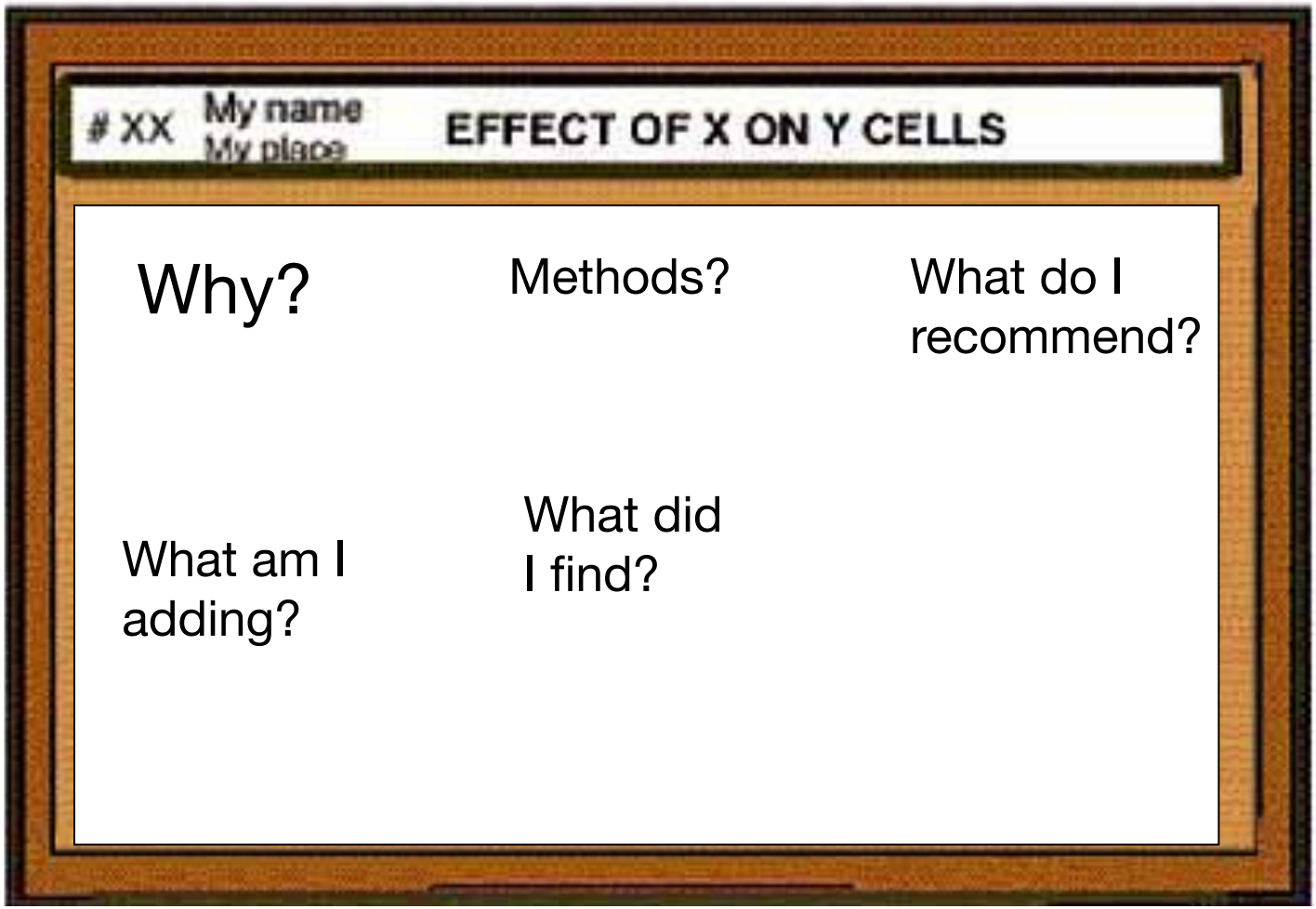
Keep it simple but effective

2) Small blocks of supporting text

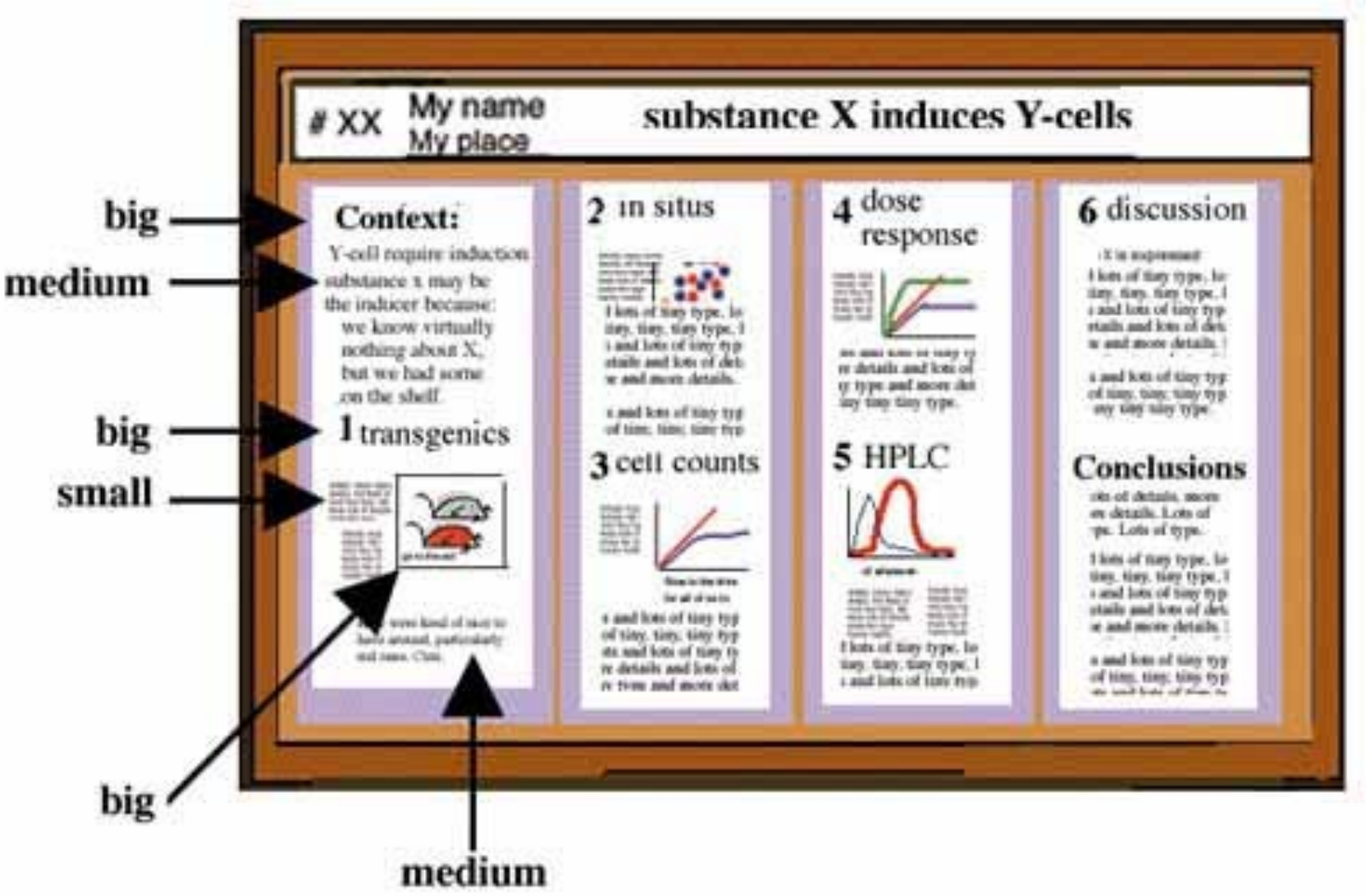
The need for chairs in front of your poster will not go over well

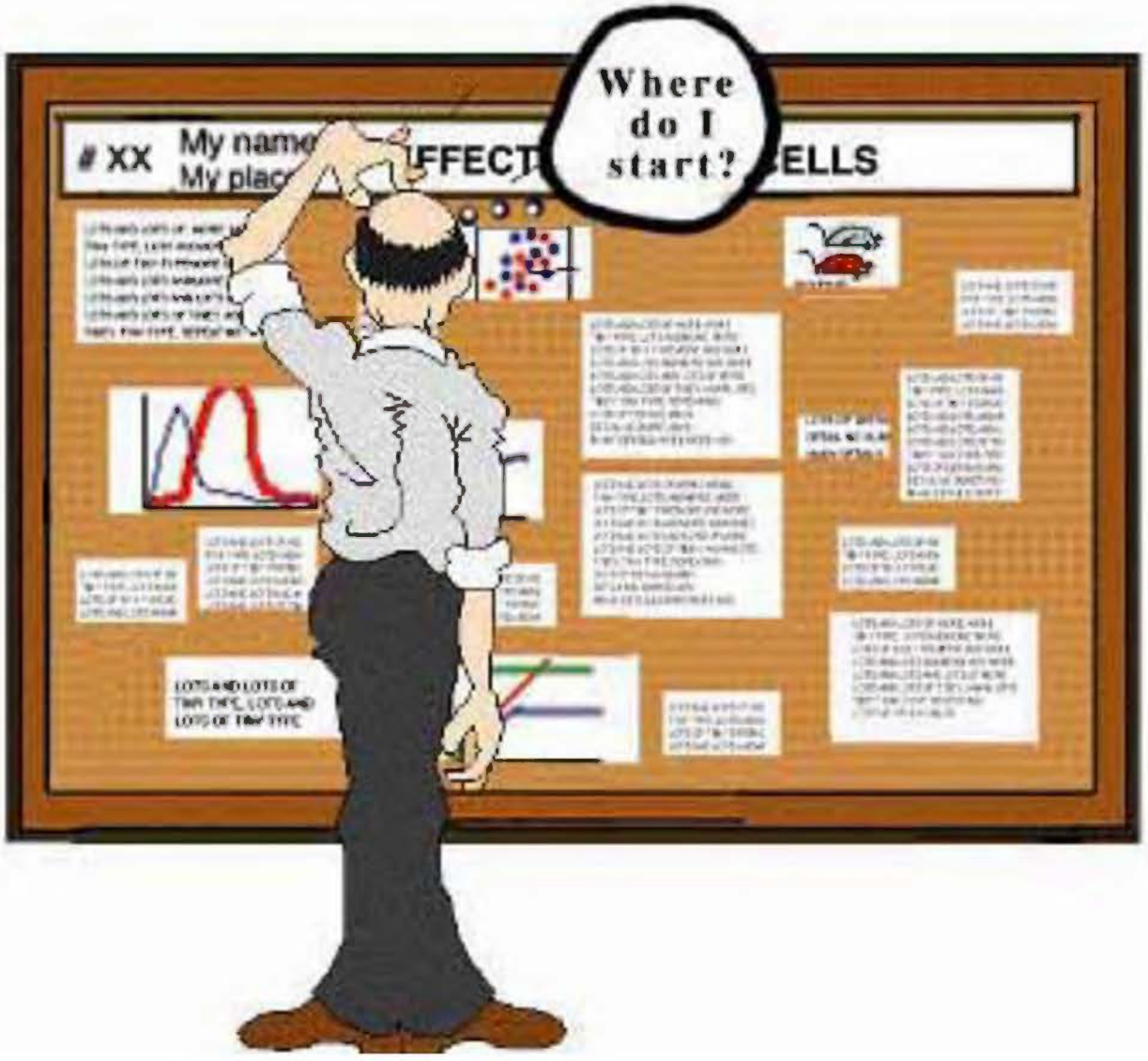


Your copy should answer…



I could actually read this




Where do I start?
XX

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.

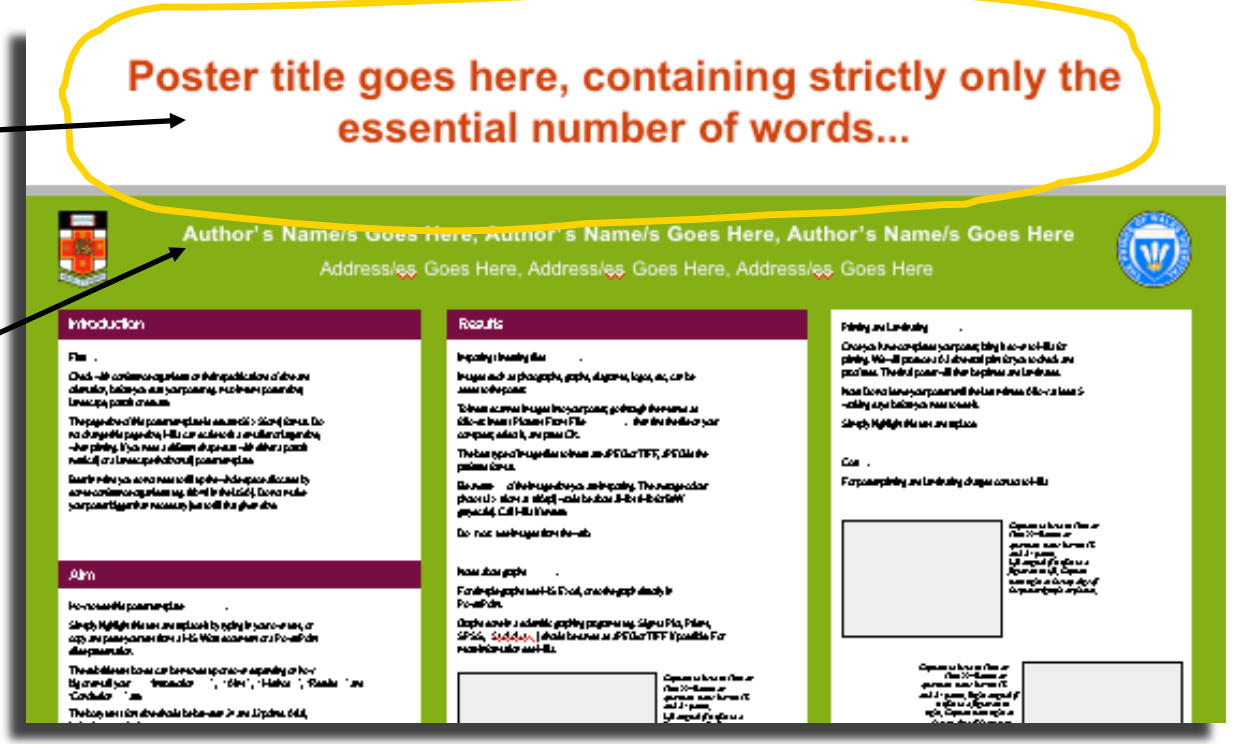
Let's design a poster!

Your poster title:

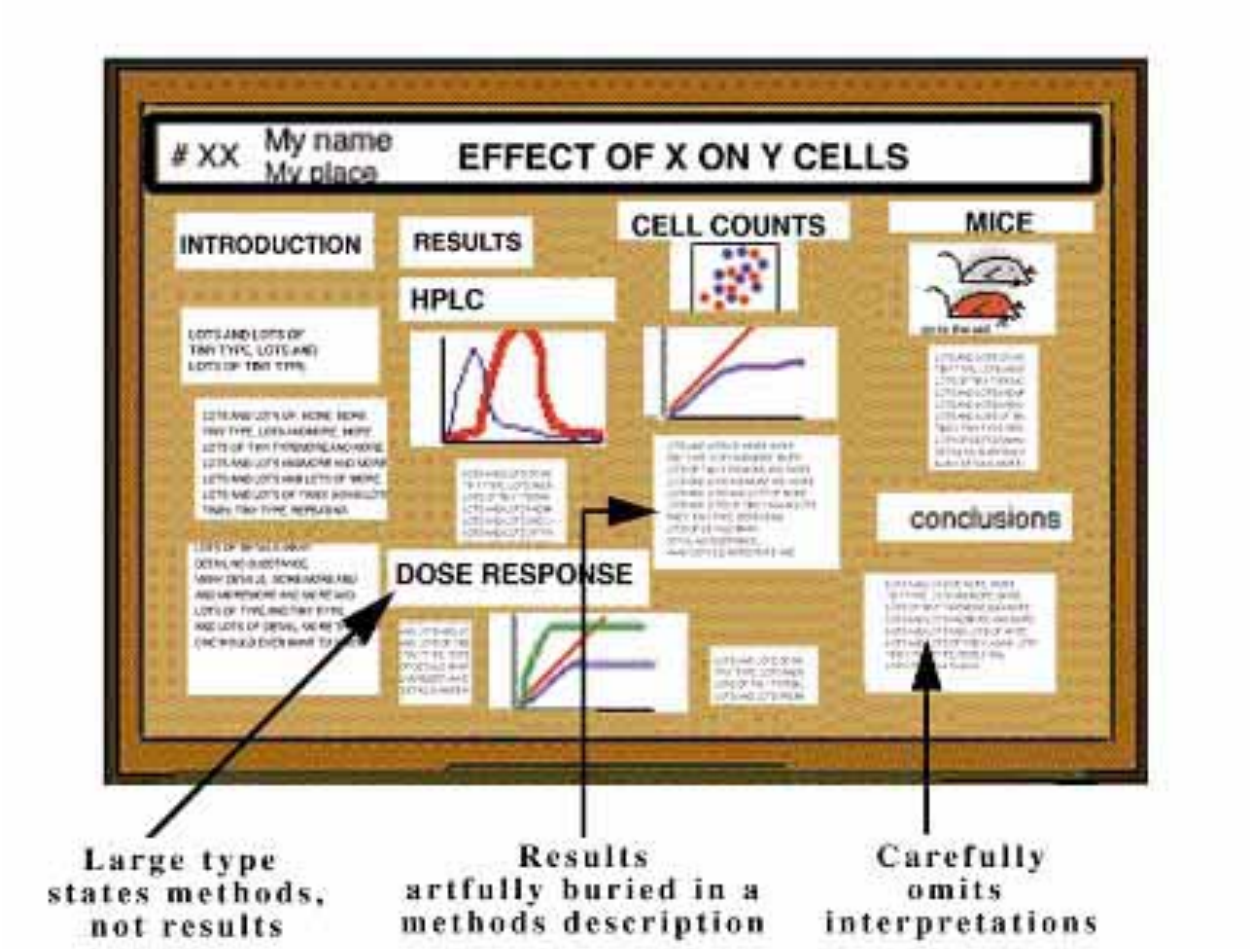
Think BIG! Really Big!

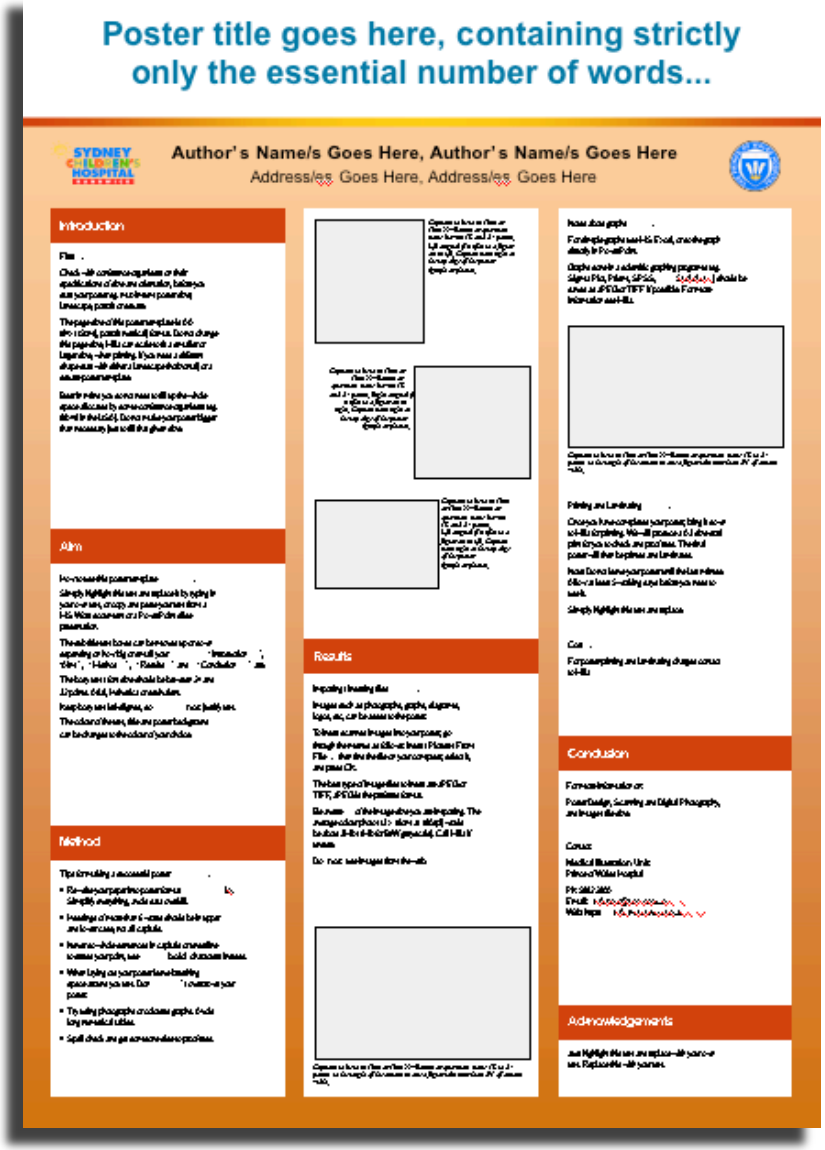
Your biggest impact!
Boldface type
Not all caps!

Group authors names and affiliations



The Secrets of Readable Text:





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

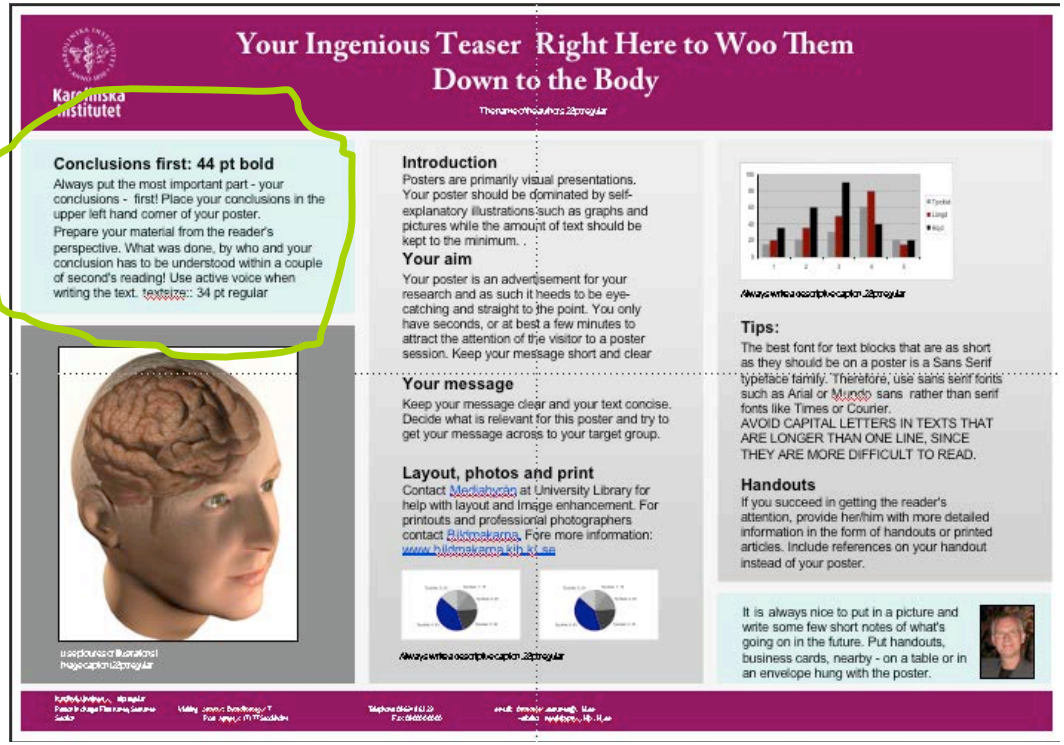
  The reason is…

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

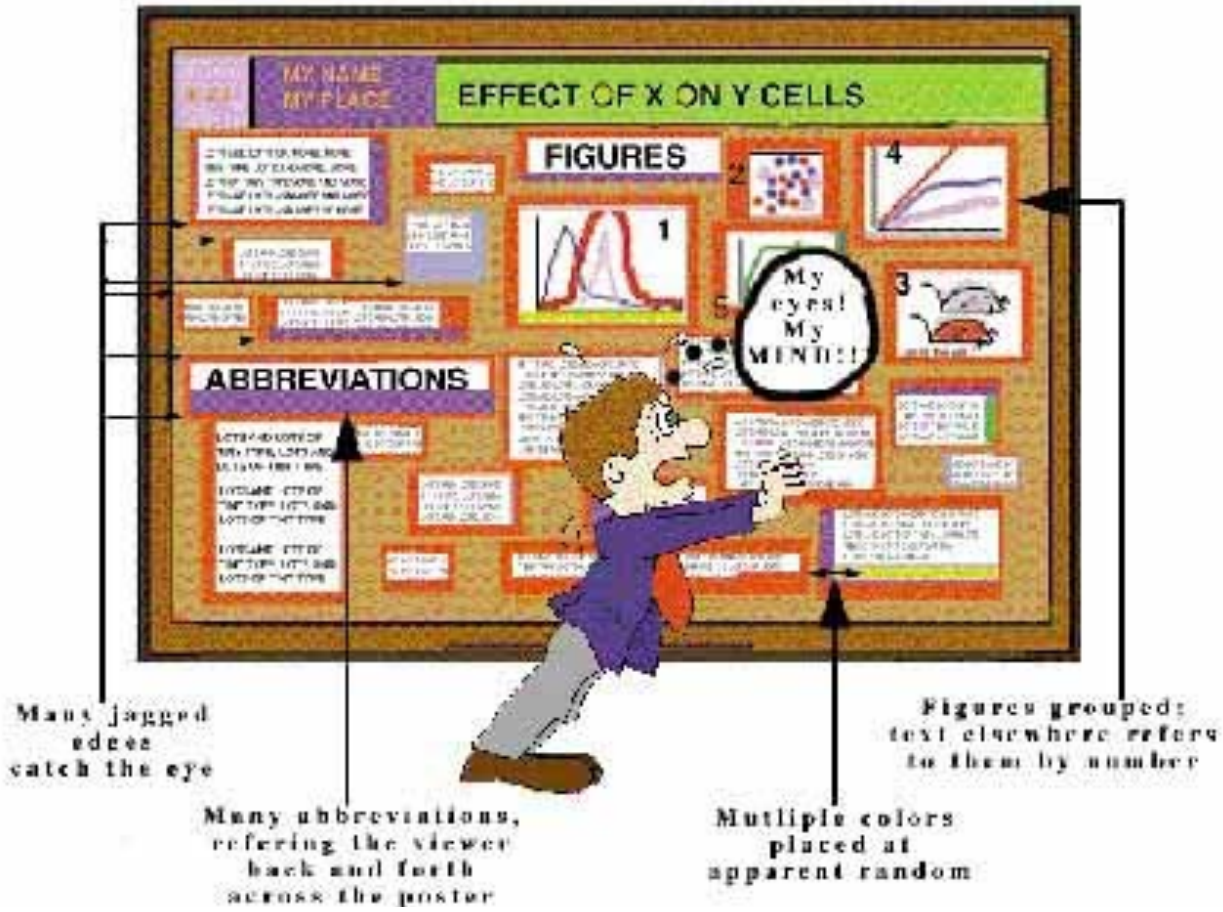
Hi there, my name is mitch collinsworth and I would like to tell you about myself and how I got this job at cornell. Well you see, my uncle had a friend who knew my cousin on the other side and his daughter worked for facilities. I was down on my luck and my sister told me she knew a guy who's nephew's 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!

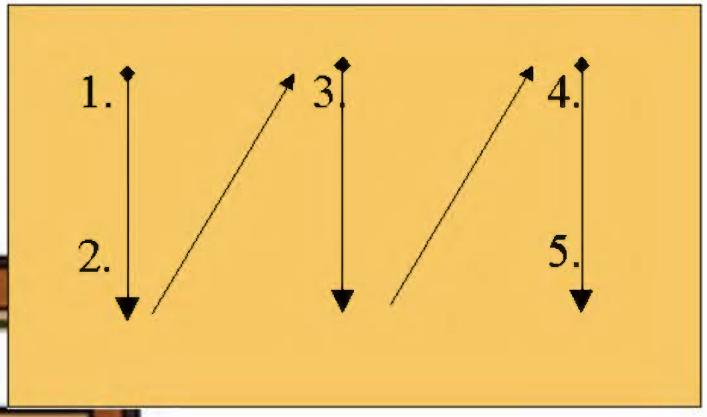
- Put the most important part first!
- Short and to the point!
- Upper left hand corner

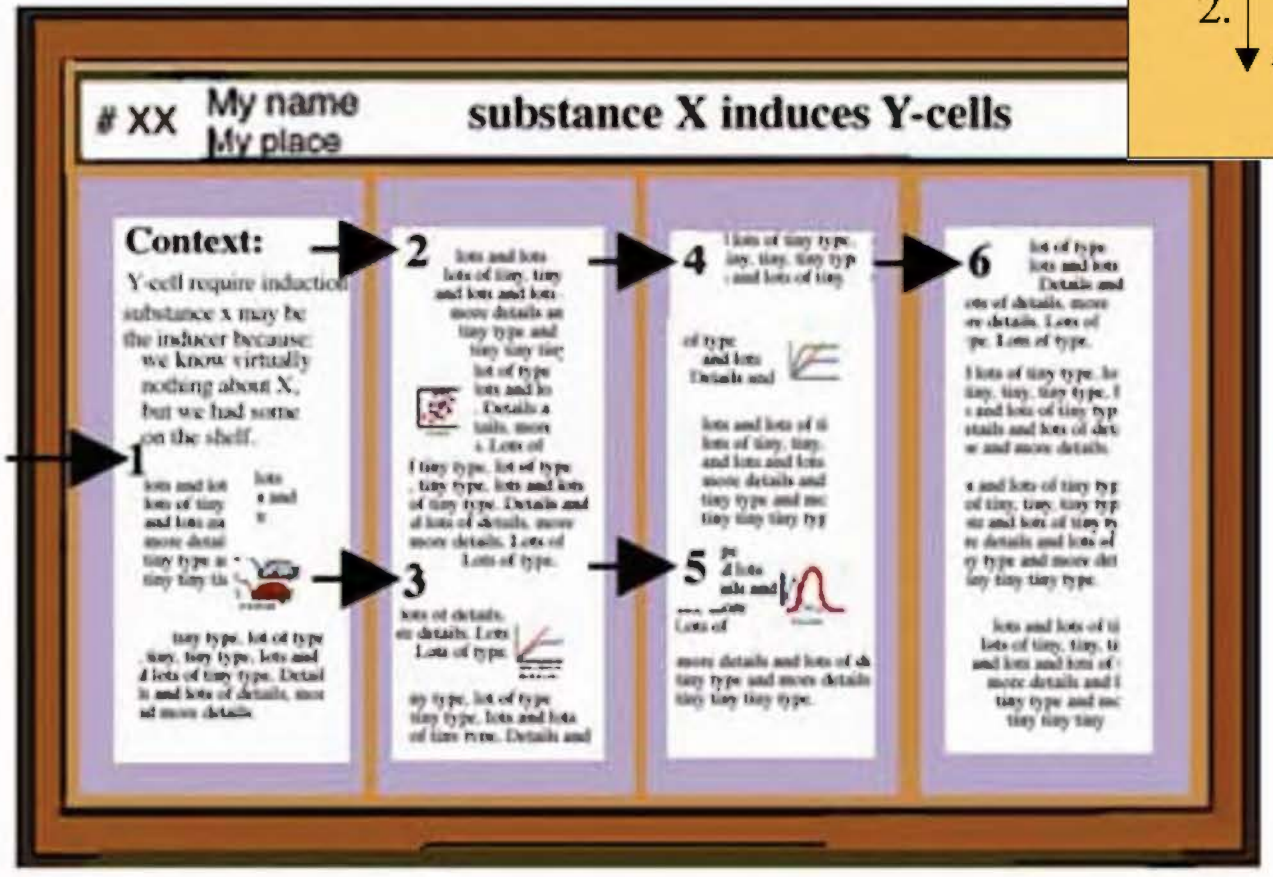


Easy for the eye to follow

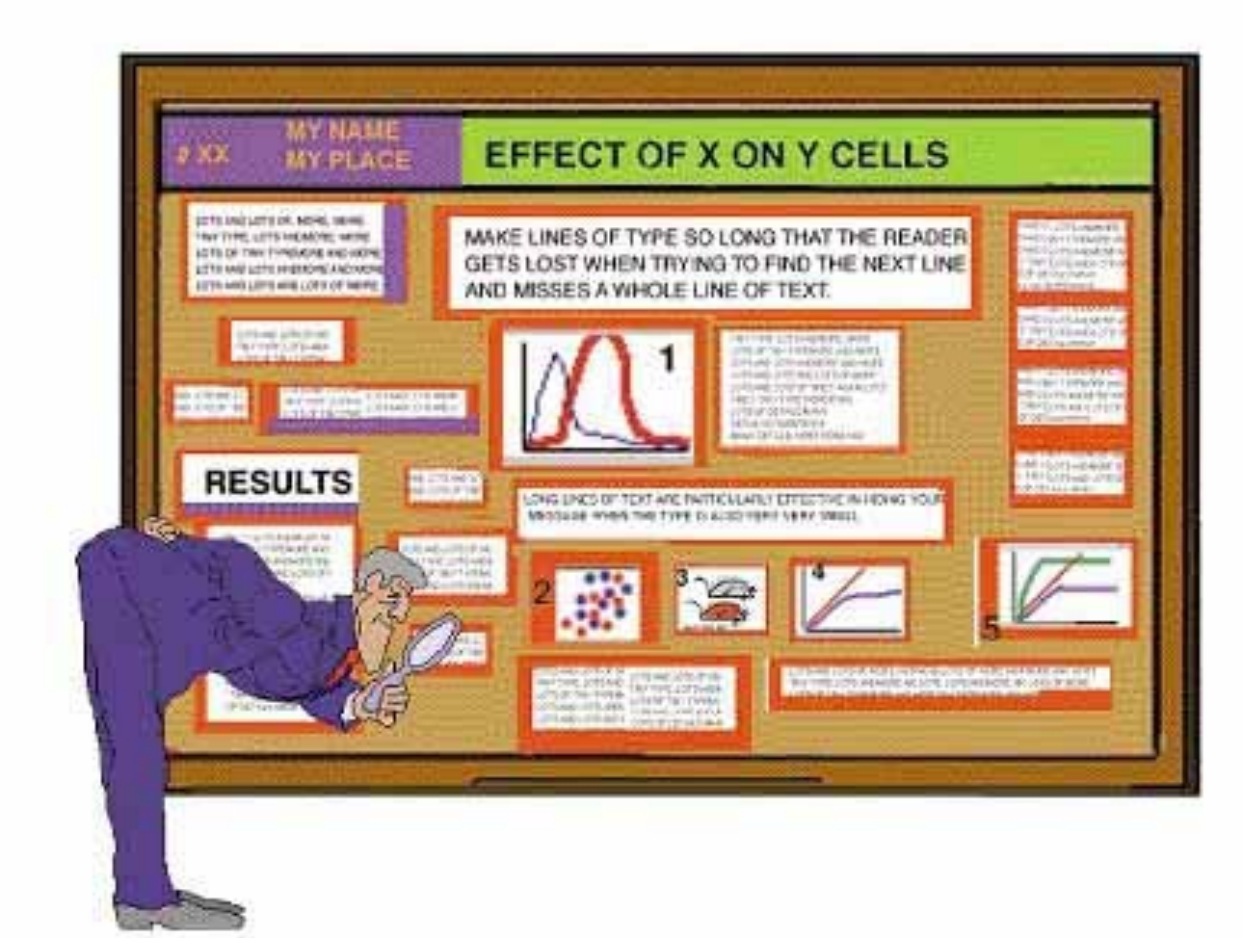


Utter chaos will make folks dizzy!


1.
2.
3.
4.
5.


XX
My name
My place
substance X induces Y-cells
Context:
Y-cell require induction
substance x may be
the inducer because:
we know virtually
nothing about X,
but we had some
on the shelf.
1
2
3
4
5
6

Can anyone read your body text?



Text sizes:

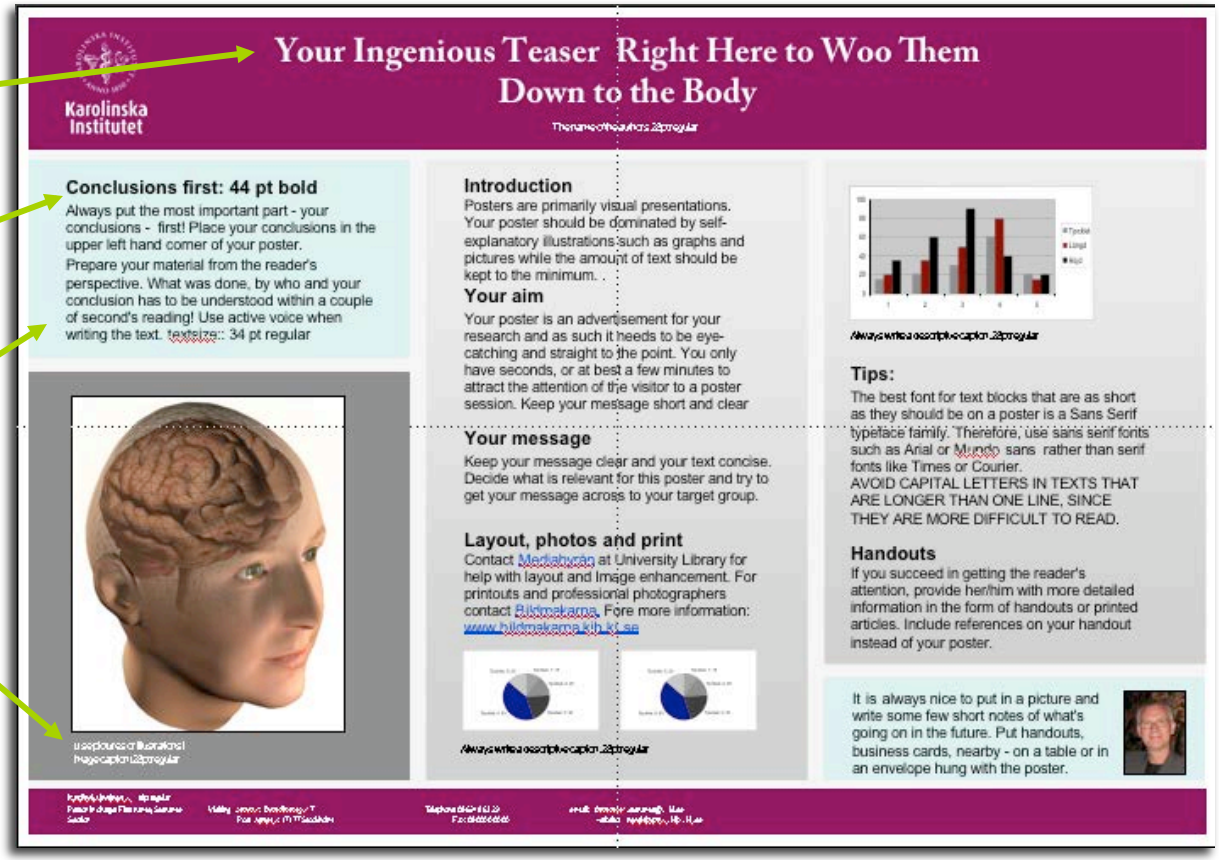
Title: 85 point

Authors: 56pt

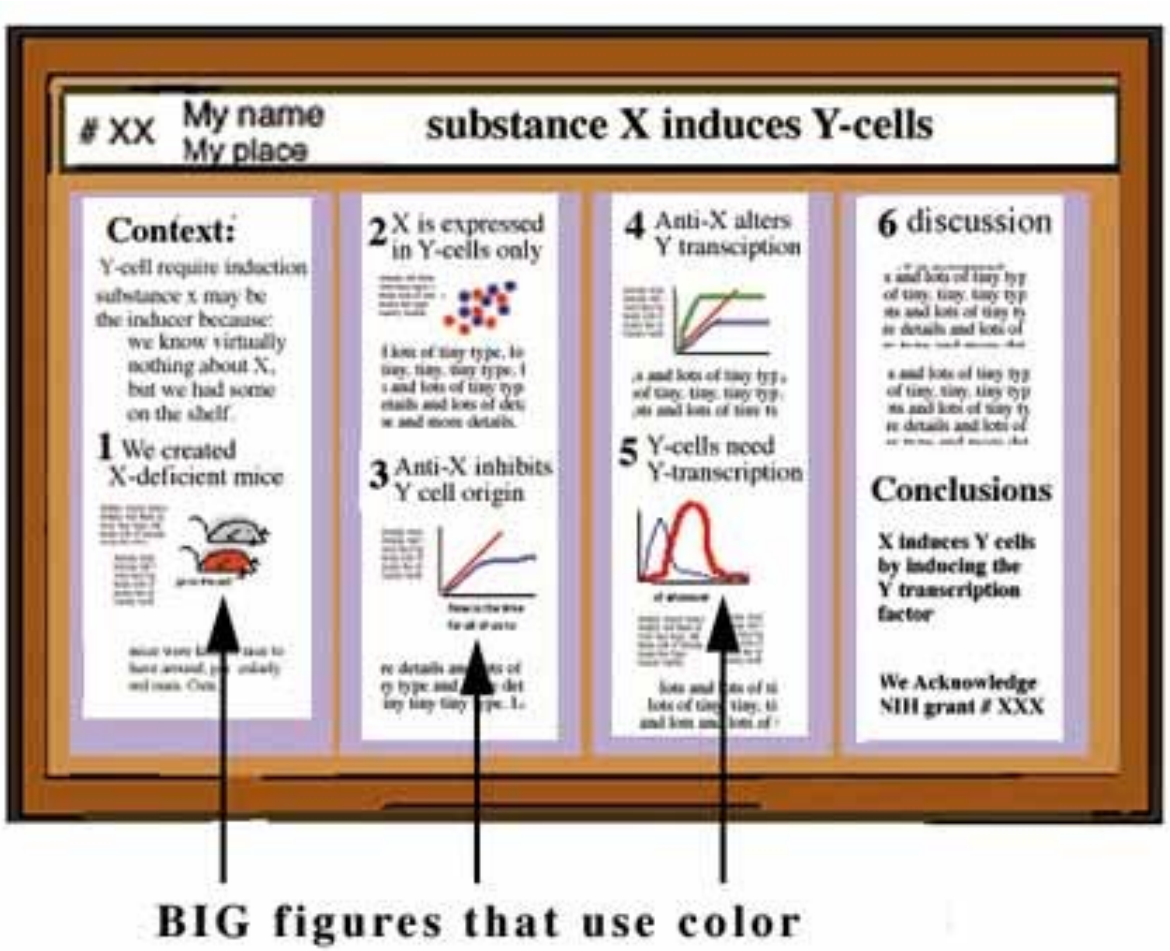
Sub-headings: 36pt

Body text: 24pt

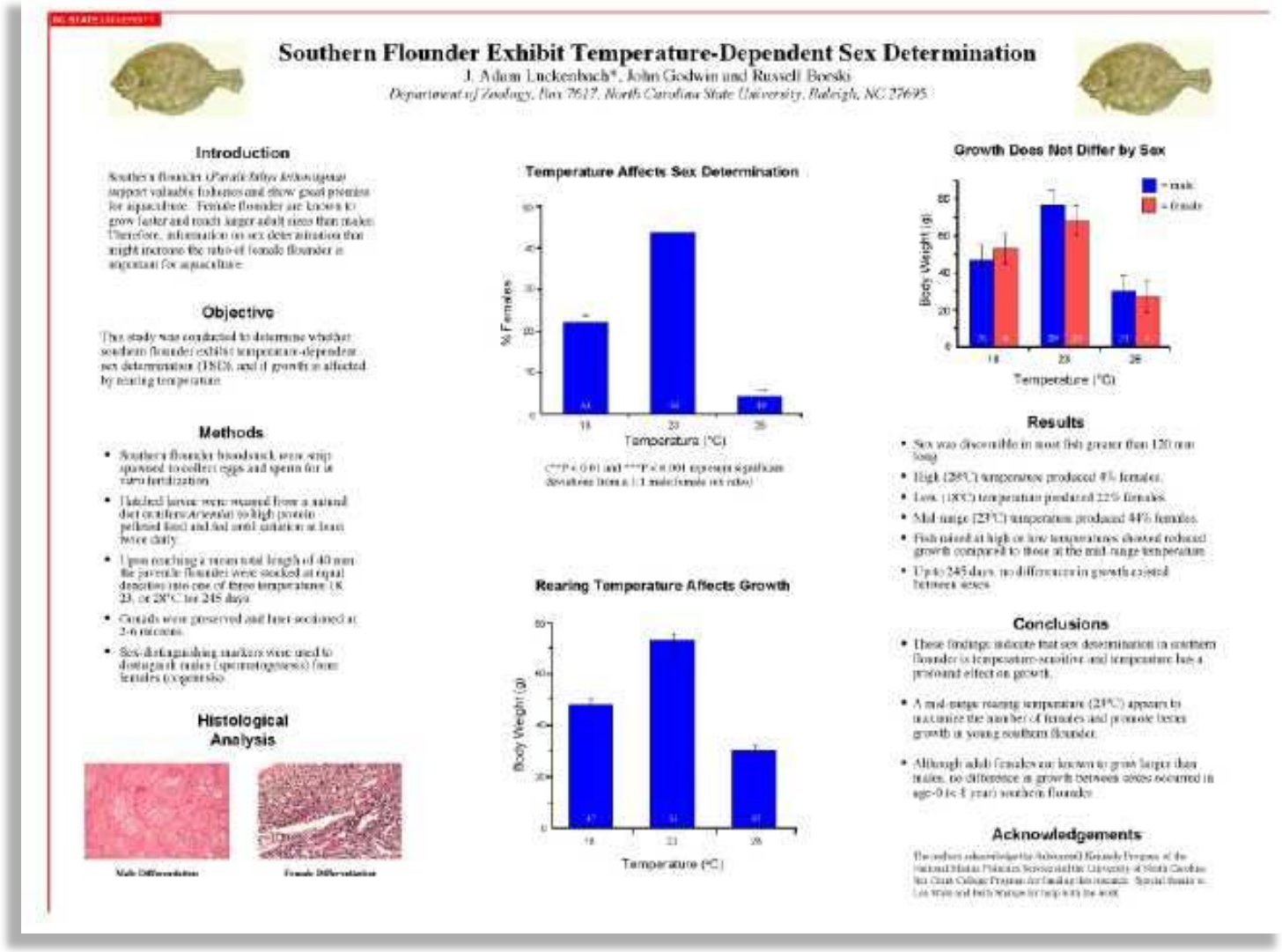
Captions: 18pt



Images and graphs say much more than words



Keep posters visual!



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 broodstock were strip spawned to collect eggs and sperm for in vitro fertilization.
- Hatched larvae were reared from a natural diet of rotifers/*Artemia* to high protein pelleted feed and fed until satiation at least twice daily.
- Upon reaching a mean total length of 40 mm, the juvenile flounder were stocked at equal densities into one of three temperatures (18, 23, or 28°C) for 245 days.
- Gonads were preserved and later sectioned at 5-6 microns.
- Sex-distinguishing markers were used to distinguish males (spermatogenesis) from females (oogenesis).

Histological Analysis

Male Differentiation | Female Differentiation

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 8% females.
- Low (18°C) temperature produced 22% females.
- Mid range (23°C) temperature produced 44% females.
- Fish raised at high or low temperatures showed reduced growth compared to those at the mid-range temperature.
- Up to 245 days, no differences in growth existed between sexes.

Conclusions

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

Acknowledgements

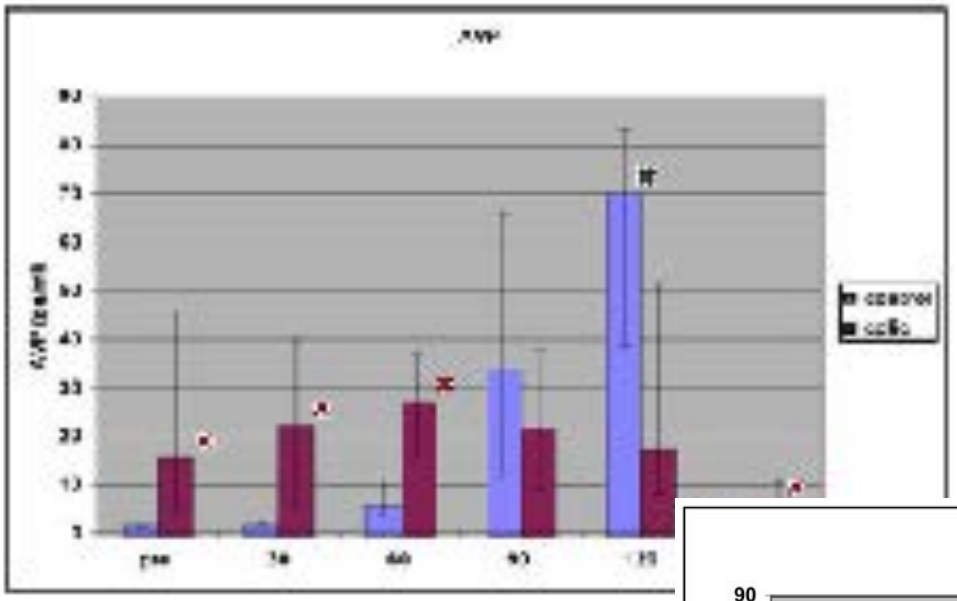
The authors acknowledge the Advanced Research Program of the National Marine Fisheries Service and the University of North Carolina Sea Grant College Program for funding this research. Special thanks to Lee Weiss and Beth Watson for help with the work.

Picture perfect photos

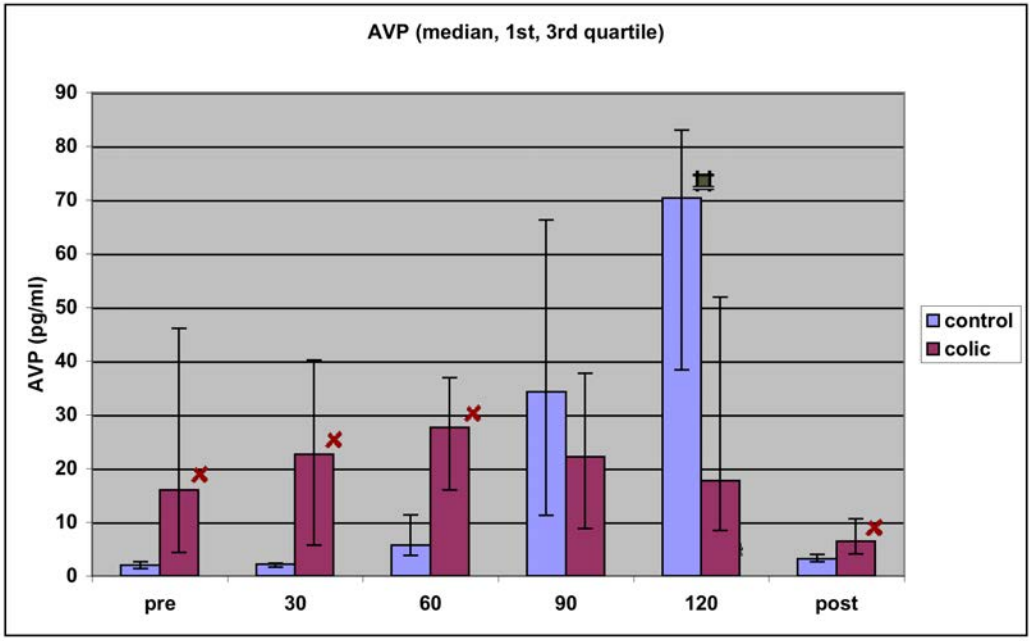
- Avoid resolution overkill!
  At least 150 dpi, but no more than 300 dpi

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

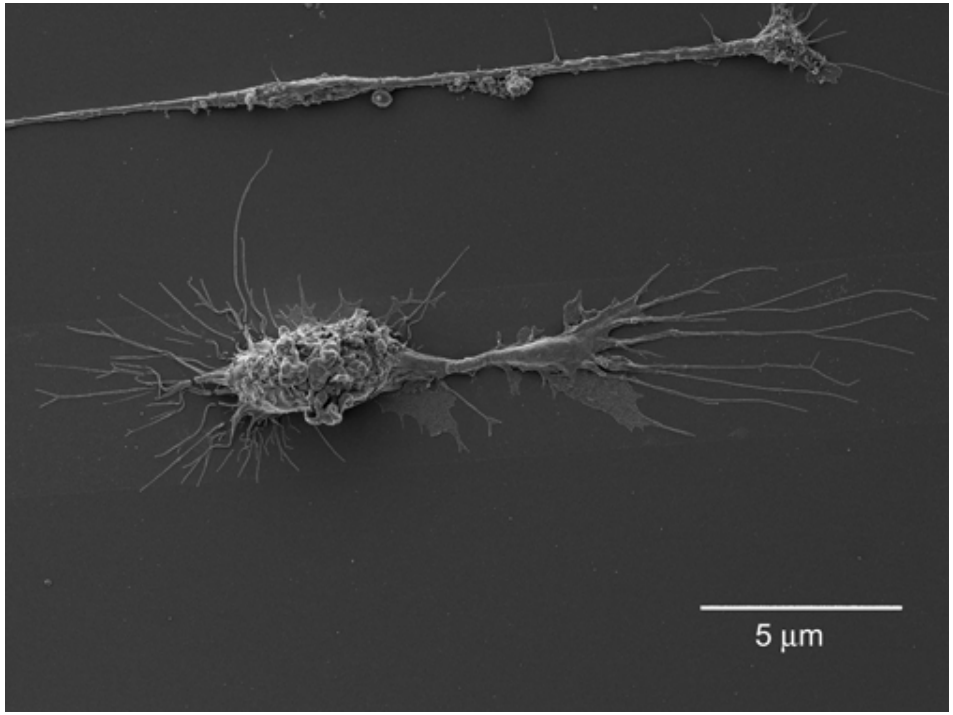
- Web images are usually
  poor resolution



jpg


AVP (median, 1st, 3rd quartile)
AVP (pg/ml)
90
80
70
60
50
40
30
20
10
0
pre
30
60
90
120
post
control
colic

png

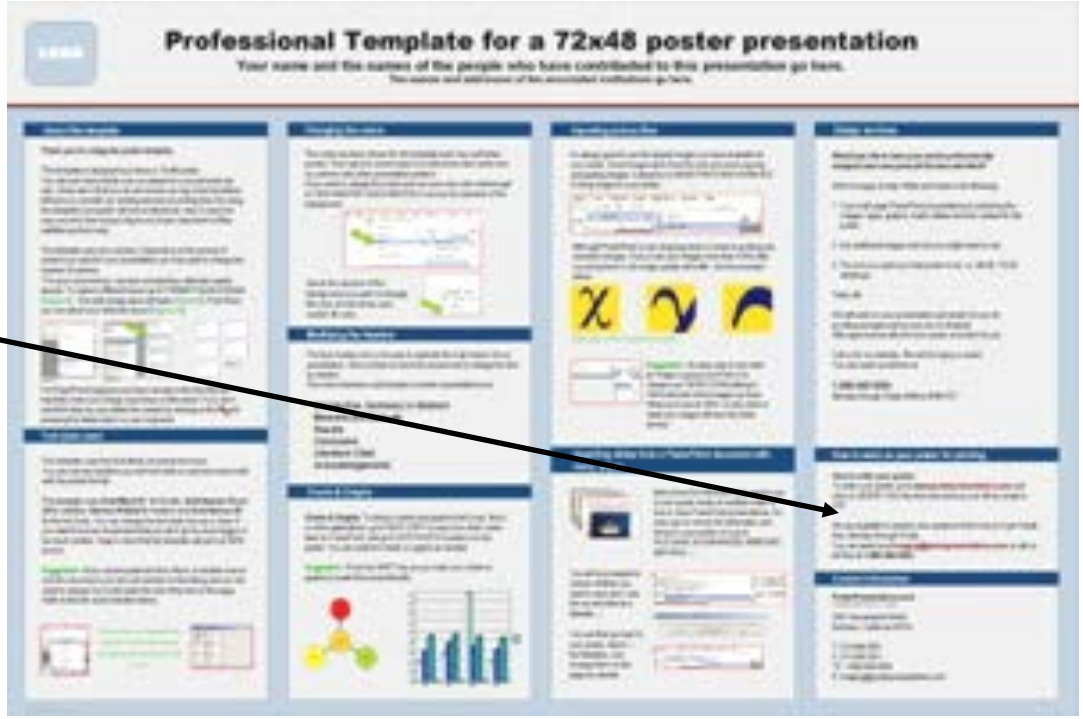


Your cool images mean nothing without a scale bar or description

Don't forget your funding acknowledgements

CNF-NSF-BMR, etc

Your department can provide you with the required wording

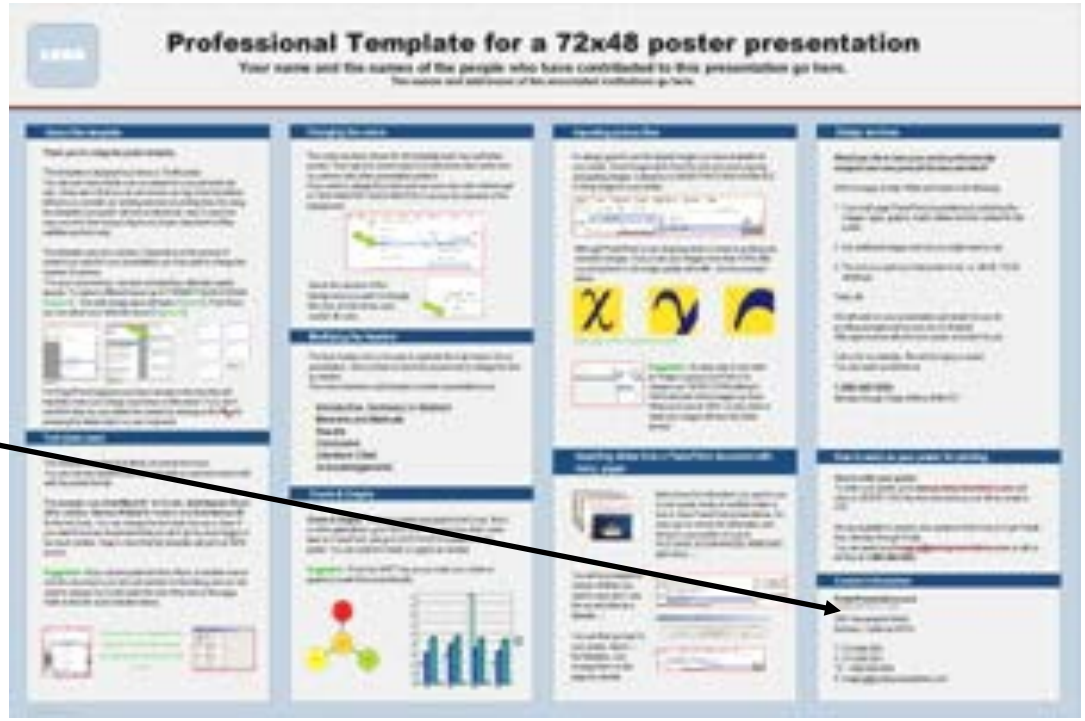


Your contact info!!!

Without it you'll become
"ya know, those guys with the awesome poster"

Include all contact info:

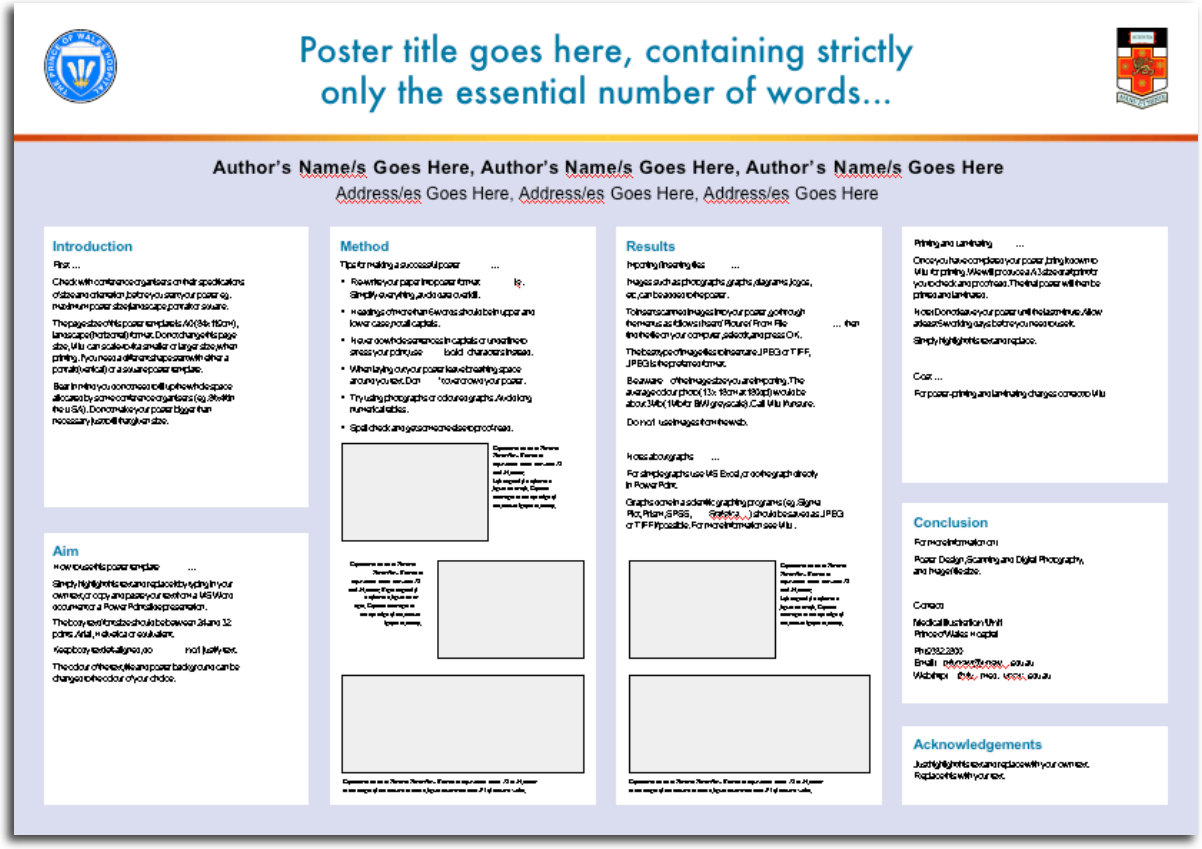
- Mail address
- Phone
- E-mail



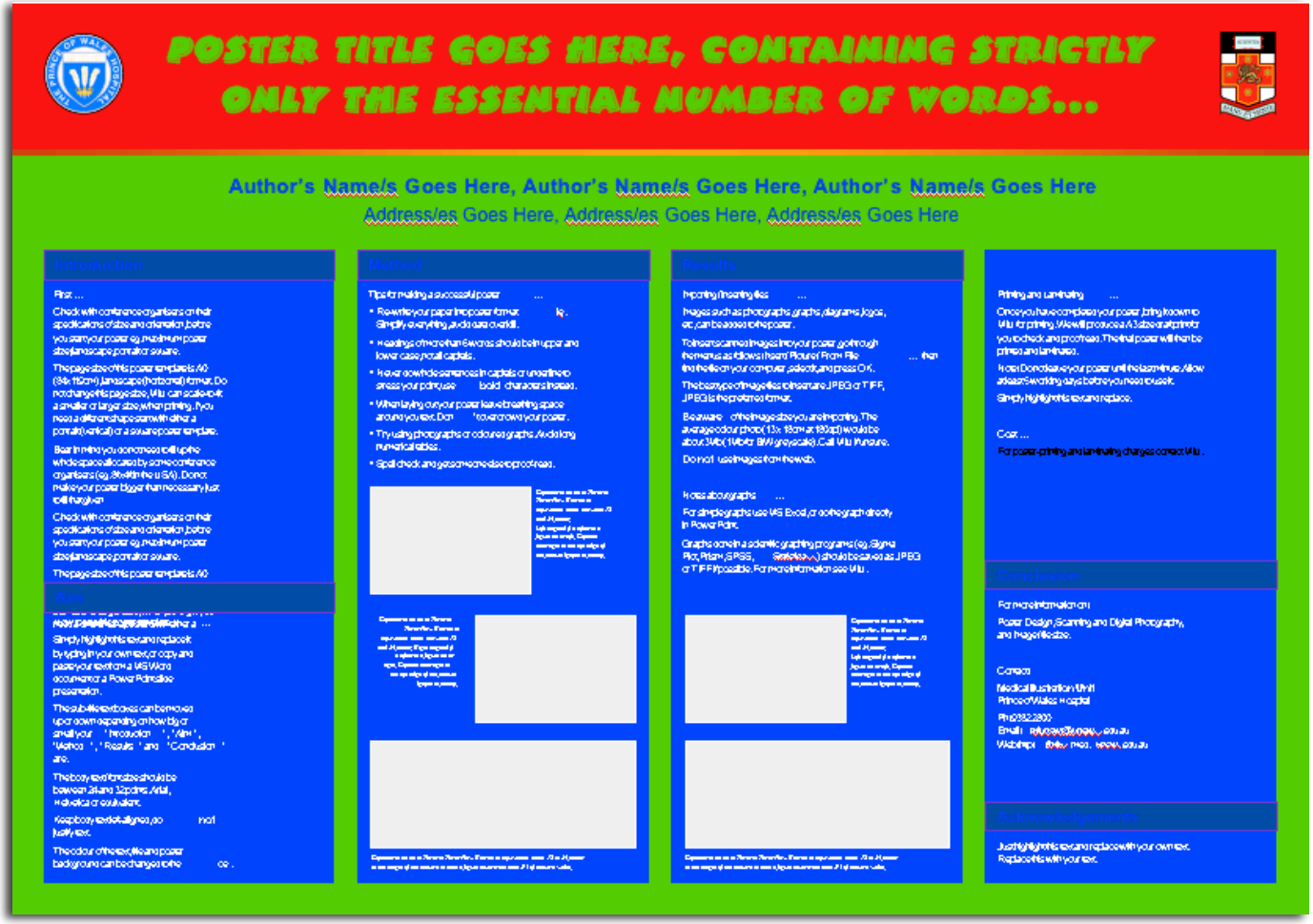
Using color to engage your readers

2-3 colors, no more!

Dark type on
light color background



Whoa! Where's my sunglasses?



This attracts attention but tires out the eye

Be carefull 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

NC STATE UNIVERSITY

Snook Growth in Habitats with Differing Abiotic Variability

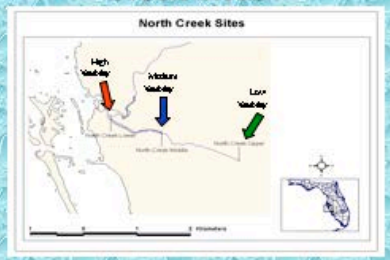
Alesia Read, North Carolina State University, anread@unity.ncsu.edu

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

STUDY SITES

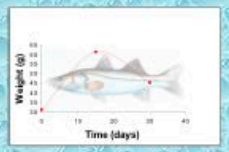


METHODS

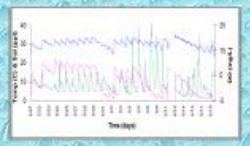
1. Juvenile snook are raised to fingerlings (100-200 mm) in the aquaculture facility
2. All snook are tagged with identifying markers for individual growth measurements
3. Fish are placed in cages within variable habitats at the research sites for 40 days
4. Fish are weighed and measured for growth

RESULTS

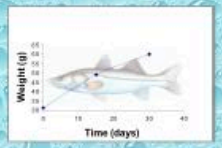
North Creek Lower (High Variability)



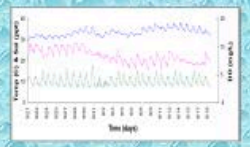
Negative Growth:
Dissolved Oxygen (mg/L)
0-22
Salinity (ppt)
2-21
Temp (°C)
25-34



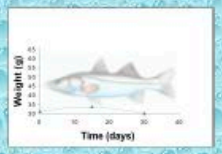
North Creek Middle (Medium Variability)



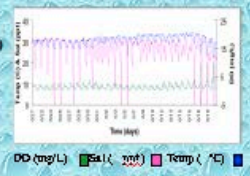
Positive Growth:
Dissolved Oxygen (mg/L)
0-8
Salinity (ppt)
16-28
Temp (°C)
30-38



North Creek Upper (Low Variability)



Slow Growth:
Dissolved Oxygen (mg/L)
0-4
Salinity (ppt)
16-30
Temp (°C)
26-33



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 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, enhancement of sex determination that might increase the ratio of female flounder is important for aquaculture.

Objective

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

Methods

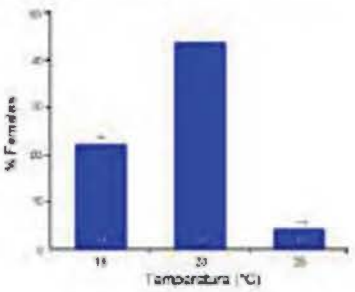
- Southern flounder broodstock were strip spawned (needle eggs and sperm for artificial fertilization).
- Fertilized larvae were reared from a natural diet (rotifers, *Artemia*) to high protein pelleted feed and fed until satiation at least twice daily.
- Upon reaching a mean total length of 40 mm, the juvenile flounder were stocked at equal densities into one of three temperatures (15, 23, or 28°C) for 245 days.
- Gonads were preserved and later sectioned at 5-6 microns.
- Sex-distinguishing markers were used to distinguish males (spermatogenesis) from females (oogenesis).

Histological Analysis

Male Differentiation

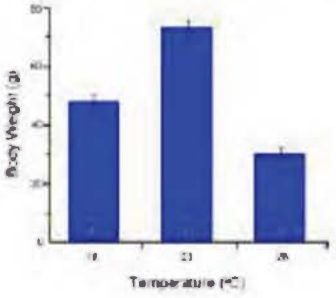
Female Differentiation

Temperature Affects Sex Determination

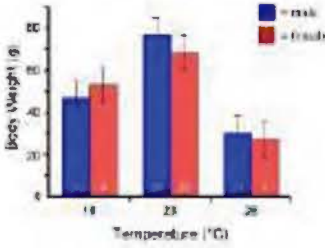


(***P < 0.01 and ***P < 0.001 represent significant deviations from 1:1 male:female sex ratio)

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 0% females.
- Low (15°C) temperature produced 22% females.
- Mid range (23°C) temperature produced 48% females.
- Fish reared at high or low temperatures showed reduced growth compared to those at the mid range temperature.
- Up to 245 days of 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 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 (< 1 year) southern flounder.

Acknowledgements

The authors acknowledge the [illegible] Research Program of the National Marine Fisheries Service and the University of North Carolina Sea Grant College Program [illegible] Special thanks to [illegible] for their assistance in preparing 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.

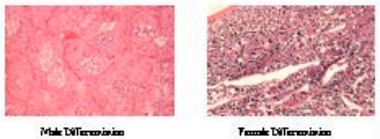
Objective

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 broodstock were strip spawned to collect eggs and sperm for *in vitro* fertilization.
- Hatched larvae were weaned from a natural diet (rotifers/*Artemia*) to high protein pelleted feed and fed until satiation at least twice daily.
- Upon reaching a mean total length of 40 mm, the juvenile flounder were stocked at equal densities into one of three temperatures 18, 23, or 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).

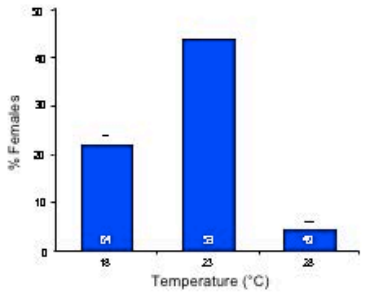
Histological Analysis



Male Differentiation

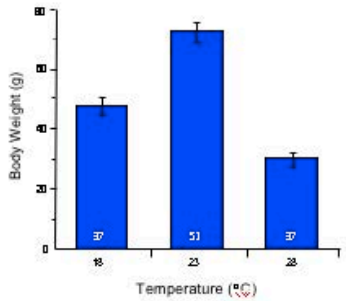
Female Differentiation

Temperature Affects Sex Determination

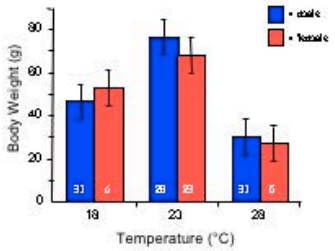


(** P < 0.001 and *** P < 0.001 represent significant differences between 18 and 23 °C female:female sex ratio)

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.

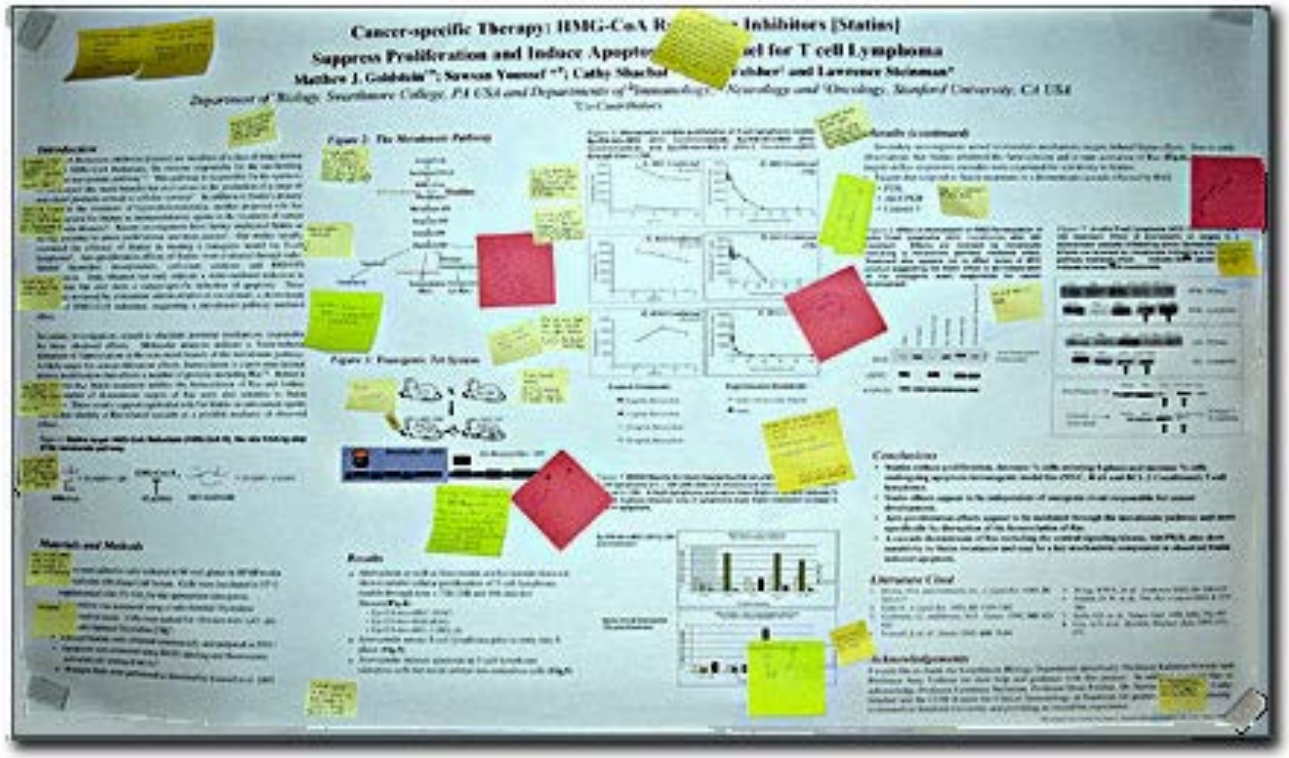
Conclusions

- 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

The authors acknowledge [illegible] National Marine Fisheries Service and the University of North Carolina Sea Grant College Program for financial support. Special thanks to Lee Ware and [illegible] for help with field work.

Edit, Edit, Edit and Evaluate!



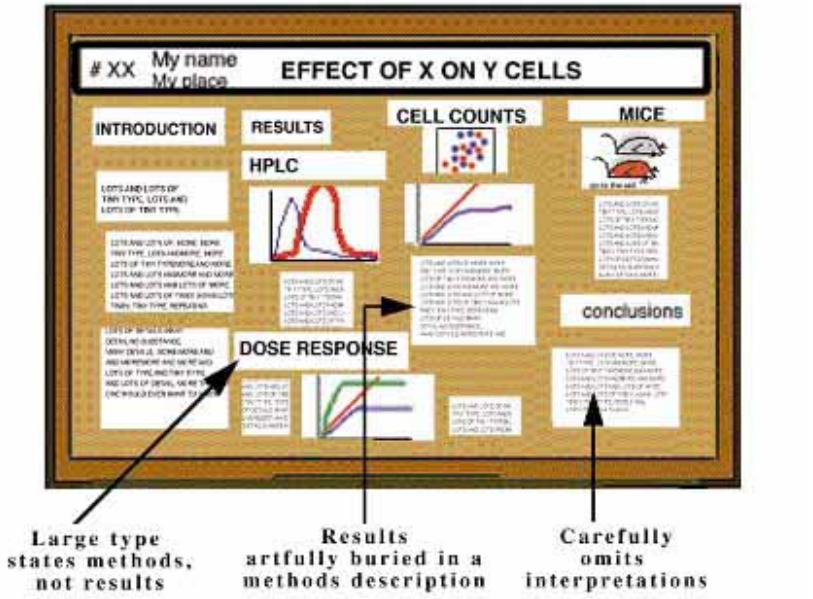
Print out a letter size draft

Can you read the type?

Are these the colors you really want?

Does it look too busy?

Do my main points pop?



CCMR has 2 poster printers!

Our wonderful computing facilities offers state of the art poster printing

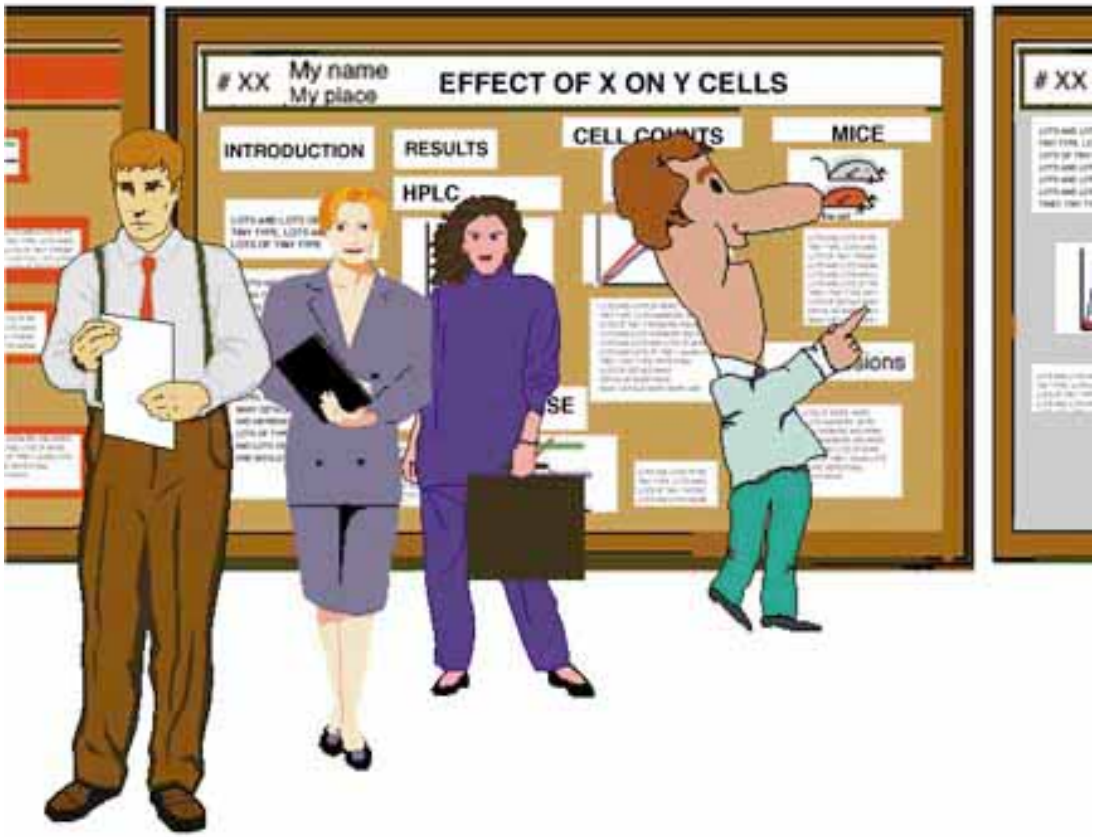
The secret of a good poster:
"Ugly design print ugly poster"

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

You're not done yet...

Prepare a 3-5 minute verbal explanation

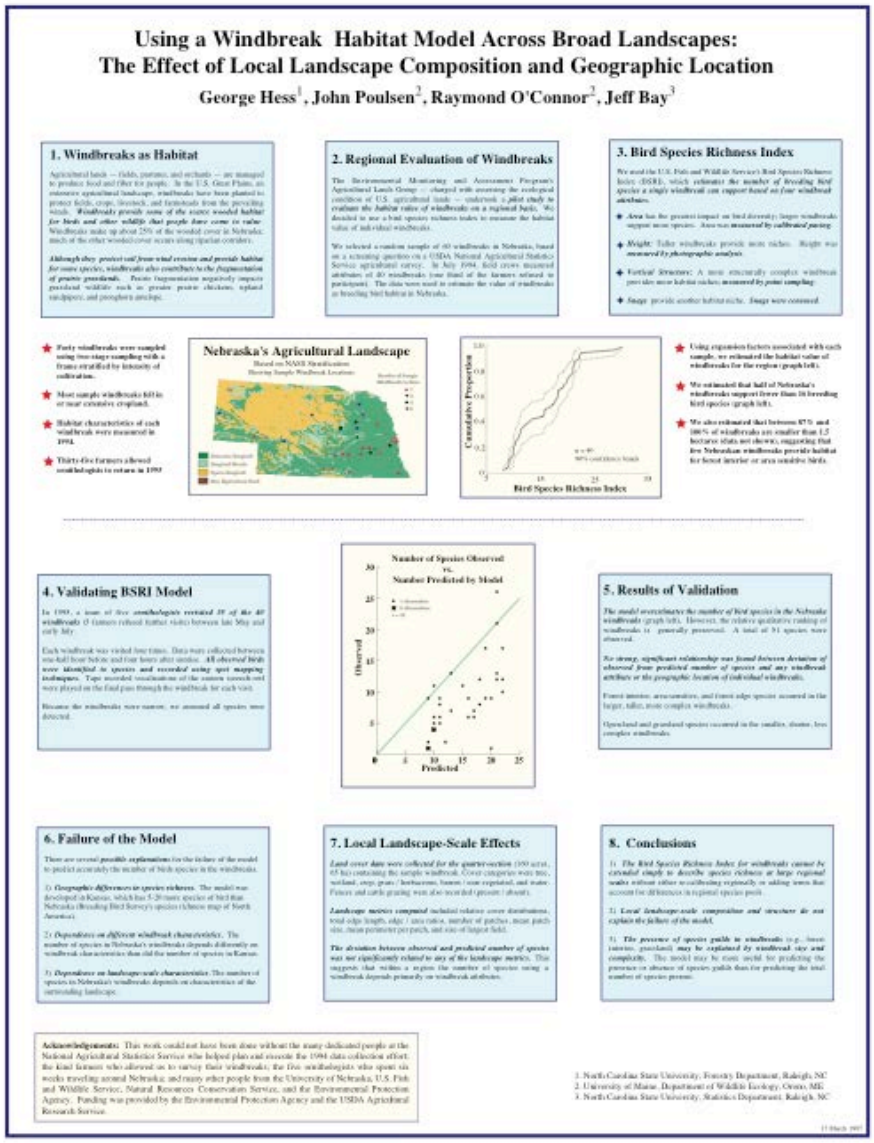
Is he ever going to SHUT UP???



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 Hess[1], John Poulsen[2], Raymond O'Connor[2], Jeff Bay[3]

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 farmsteads from the prevailing winds. *Windbreaks provide some of the scarce wooded 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 occurs along riparian corridors.

Although they protect soil from wind erosion and provide habitat for some species, windbreaks also contribute to the fragmentation of prairie grasslands. Prairie fragmentation negatively impacts grassland wildlife such as greater prairie chickens, upland sandpipers, and grasshopper sparrows.

2. Regional Evaluation of Windbreaks

The Environmental Monitoring and Assessment Program's Agricultural Lands 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 (one third of the farmers refused to participate). The data were used to estimate the value of windbreaks as 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 calibrated pacing.*
- *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.*
- *Snags* provide another habitat niche. *Snags* were counted.

- Forty windbreaks were sampled using two-stage sampling with a frame stratified by intensity of cultivation.
- Most sample windbreaks fell in or near extensive cropland.
- Habitat characteristics of each windbreak were measured in 1994.
- Thirty-five farmers allowed ornithologists to return in 1995.

Nebraska's Agricultural Landscape

Based on NASS Stratification
Showing Sample Windbreak Locations

- Using expansion 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 16 breeding bird species (graph left).
- We also estimated that between 87% and 100% of windbreaks are smaller than 1.5 hectares (data not shown), suggesting that few Nebraskan windbreaks provide habitat for forest interior or area sensitive birds.

4. Validating BSRI Model

In 1995, *a team of five ornithologists revisited 35 of the 40 windbreaks* (5 farmers refused further visits) between late May and early July.

Each windbreak was visited four times. Data were collected between sun-half hour before and four hours after sunrise. *All observed birds were identified to species and recorded using spot mapping techniques.* Tape recorded vocalizations of the eastern screech owl were played on the final pass through the windbreak for each visit.

Because the windbreaks were narrow, 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 91 species were observed.

No strong, significant relationship was found between deviation of observed from predicted number of species and any windbreak attribute or the geographic location of individual windbreaks.

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

Open-land 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 birds 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's species richness 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 the number of 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 (160 acres, 65 ha) containing the sample windbreak. Cover categories were tree, wetland, crop, grass / herbaceous, forest / non-vegetated, and water. Fences and cattle grazing 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 deviation between observed and predicted number of species was not significantly related to any of the landscape metrics. This suggests that within a region the number of species using a windbreak depends primarily on windbreak attributes.

8. Conclusions

1) *The Bird Species Richness Index for windbreaks cannot be extended simply to describe species richness at large regional scales* without either recalibrating regionally or adding terms 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 guilds in windbreaks* (e.g., forest interior, grassland) *may be explained by windbreak size and complexity.* The model may be more useful for predicting the presence or absence of species guilds than for predicting the total number of species present.

Acknowledgements: This work could not have been done without the many dedicated people at the National Agricultural Statistics Service who helped plan and execute the 1994 data collection effort, the kind farmers who allowed us to survey their windbreaks, the five ornithologists 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 (Carolinum), 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 osteoarthrosis

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.

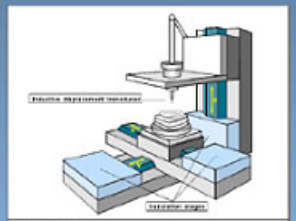


Fig. 2: Test setup

- **Measuring technology (Fig. 2)**
  - Vibration-isolated table framework
  - 3 translation stages (for directions x, y, and z) (DC-Motor) (PI, Waldbronn)
  - 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 gains/losses (wear, resin torsion, water sorption, etc.) are shown in **Fig. 3** (stabilization splints) and **Fig. 4** (distraction splints).

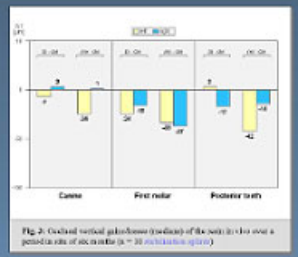


Fig. 3: Occlusal vertical gains/losses (medians) of the teeth in vivo over a period in situ of six months (n = 10 stabilization splints)

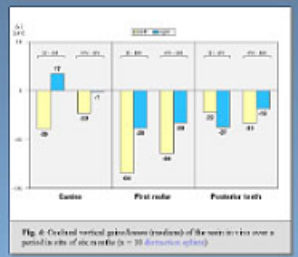
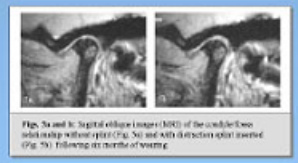


Fig. 4: Occlusal vertical gains/losses (medians) of the teeth in vivo over a period in situ of six months (n = 10 distraction splints)

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

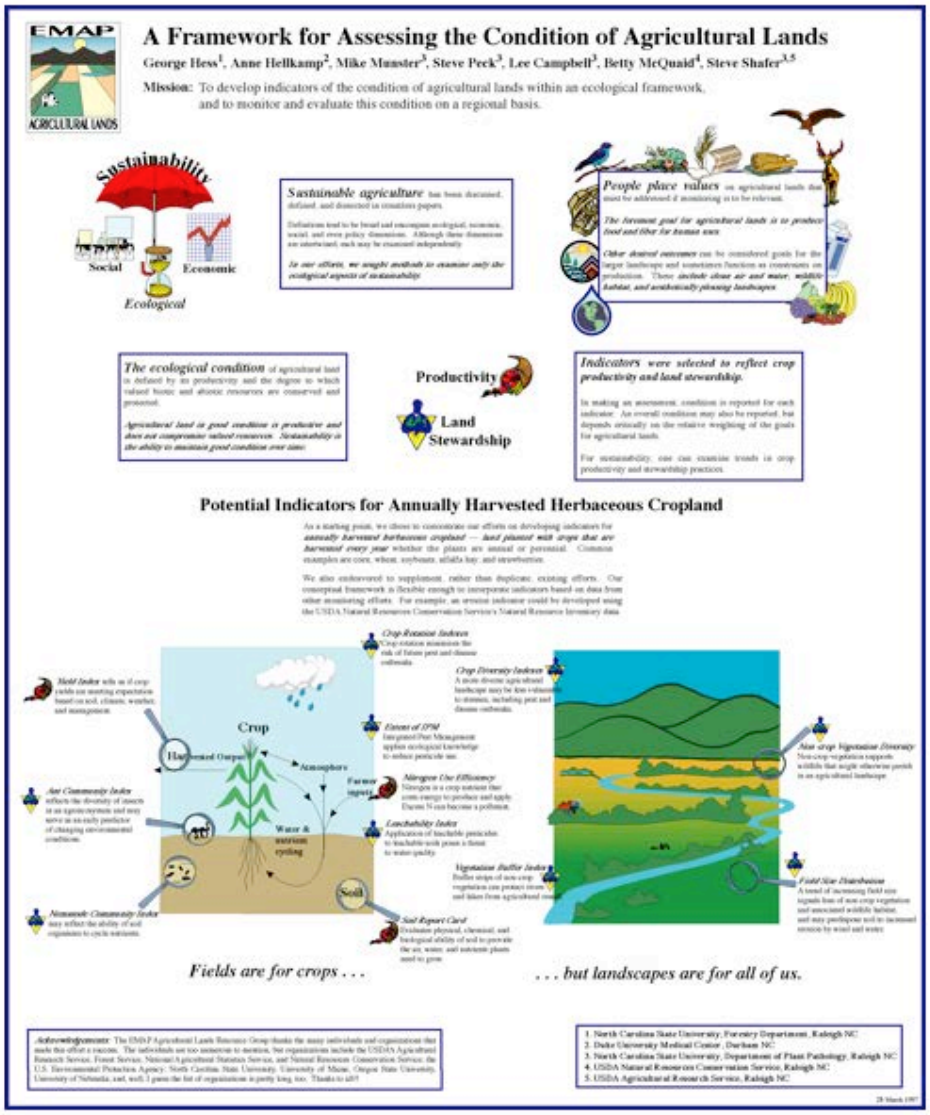


Figs. 5a and b: Sagittal oblique images (MR) of the condyle/fossa relationship without splint (Fig. 5a) and with distraction splint inserted (Fig. 5b) following six months of wearing

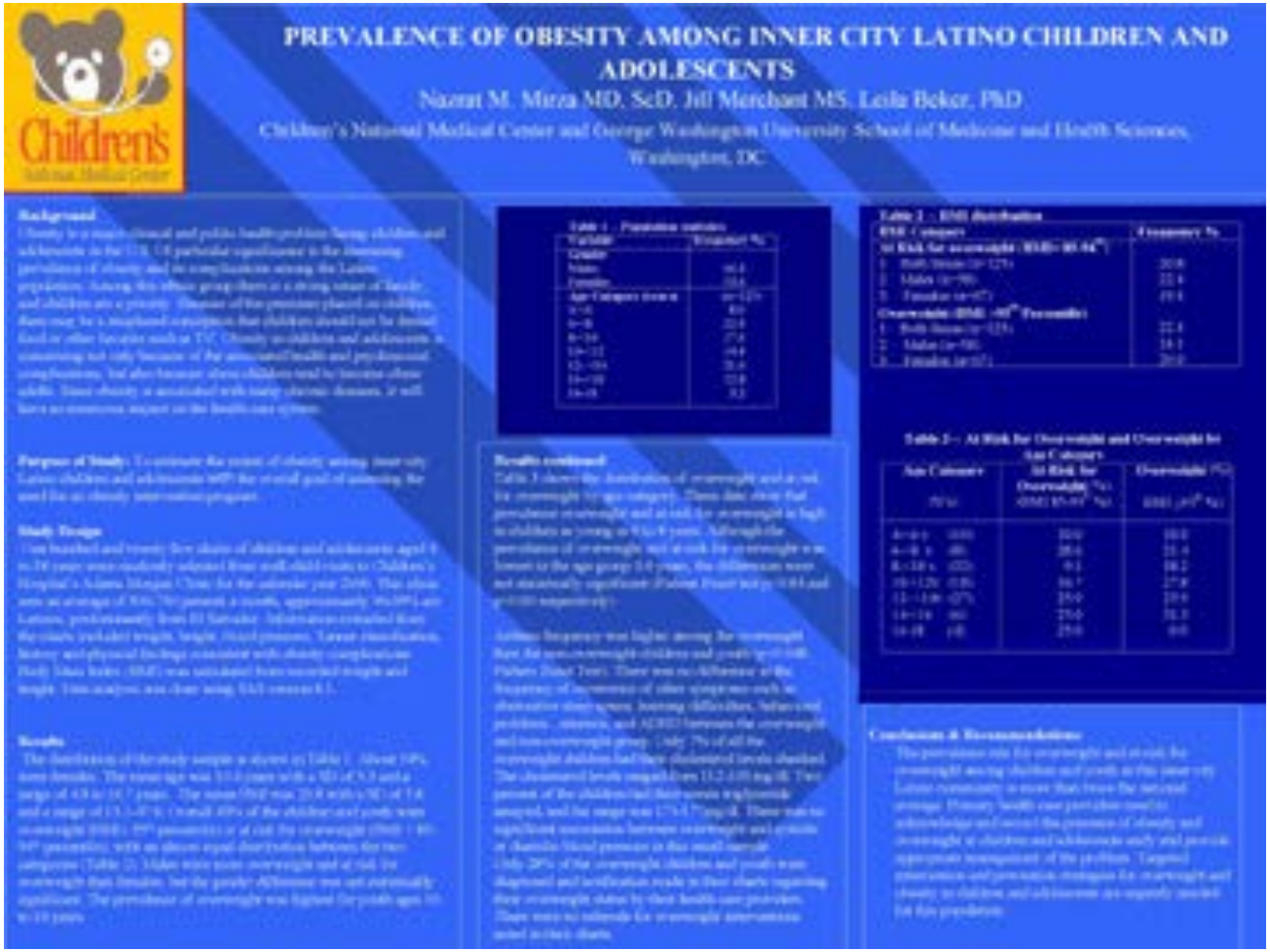
Conclusions

- 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



Where do I begin?



PREVALENCE OF OBESITY AMONG INNER CITY LATINO CHILDREN AND ADOLESCENTS

Nazrat M. Mirza MD, ScD, Jill Merchant MS, Leila Baker, PhD

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

I'm feeling sleepy

Early Outcomes of the First 1471 Consecutive Kyphoplasty Procedures in the United States for the Fixation of Painful Osteopenic Vertebral Body Compression Fractures (VCF)

Steven R. Garfin[1], M.D., Isador H. Lieberman[2], M.D., Mark A. Reiley[3], M.D., Joseph M. Lane[4], M.D., Frank W. Phillips[5], M.D., Hallett B. Mathews[6], M.D., Hansen A. Yuan[7], M.D., Barton H. Sachs[8], M.D., for the Kyphoplasty Study Group

[1]University of California, San Diego, Medical Center, San Diego, CA; [2]Cleveland Clinic, Cleveland, OH; [3]Berkeley Orthopedic Medical Group, Berkeley, CA; [4]Hospital for Special Surgery, New York, NY; [5]University of Chicago Spine Center, Chicago, IL; [6]Mid-Atlantic Spine Specialists, Richmond, VA; [7]State University of New York Health Sciences Center, Syracuse, NY; [8]Albany Medical Center, Albany, NY

BACKGROUND

- 700,000 VCF's per year
- 275,000 diagnosed, >80% due to pain
- Spinal deformity associated with
  - Significant morbidity
  - 23% increased mortality (Kado, Ann Int Med 1999)
- Current treatments ineffective
  - Open surgeries fail
  - Medical management palliative
- Vertebroplasty
  - Bilateral transpedicular cement fill
  - Relieves pain
  - Requires high pressure and runny cement
  - High risk of cement leaks
    - Up to 73% where documented (Wolf et al., Radiology 1997)
  - Major complications (Chiras, J Int Neurorad 1997)
    - 1.3% in osteoporosis
    - 10% in metastatic cancers

KYPHOPLASTY

Kyphoplasty is a minimally invasive orthopedic procedure for reducing and fixing painful vertebral body compression fractures secondary to osteopenia. Using a posterior approach, one or two inflatable Bone Tamps (Fig. 1) are inserted into the fractured vertebral body, generally using a bilateral transpedicular approach (Fig. 2). The surgeon carefully inflates the balloon tamps (Fig. 2) using radiopaque contrast medium with image, volume and pressure control. The increased balloon tamp volume compacts the inner cancellous bone as it pushes the fractured outer cortical bone back toward its normal position. The inflation path is also controlled by placement, volume and balloon design. After reduction, the balloon tamp is removed, and the resulting void is filled with thick PMMA under fine manual control and low pressure. The steps of Kyphoplasty are illustrated in Fig 3.

Fig. 1

Fig. 2

Fig. 3

STUDY DESIGN AND METHODS

A retrospective multi-center review to assess early outcomes with Kyphoplasty. Pain was localized by physical examination. The presence of marrow edema and collapse was confirmed on MRI. General or deep local anesthesia was chosen based on anatomy, number of levels and patient status. The first 135 patients at our centers were asked to characterize their back pain as improved, the same or worse 24 hours post-op and at last follow-up. Fractured and nearest normal vertebral body heights were measured anterior, midline and posterior in the first 27 vertebral body fractures treated by one surgeon (MAR). The height of the nearest normal vertebral body was used to calculate the % of predicted height for all the vertebral bodies (Fig. 4A) and for the sub-set where which had lost 15% or more of height before treatment (Fig. 4B).

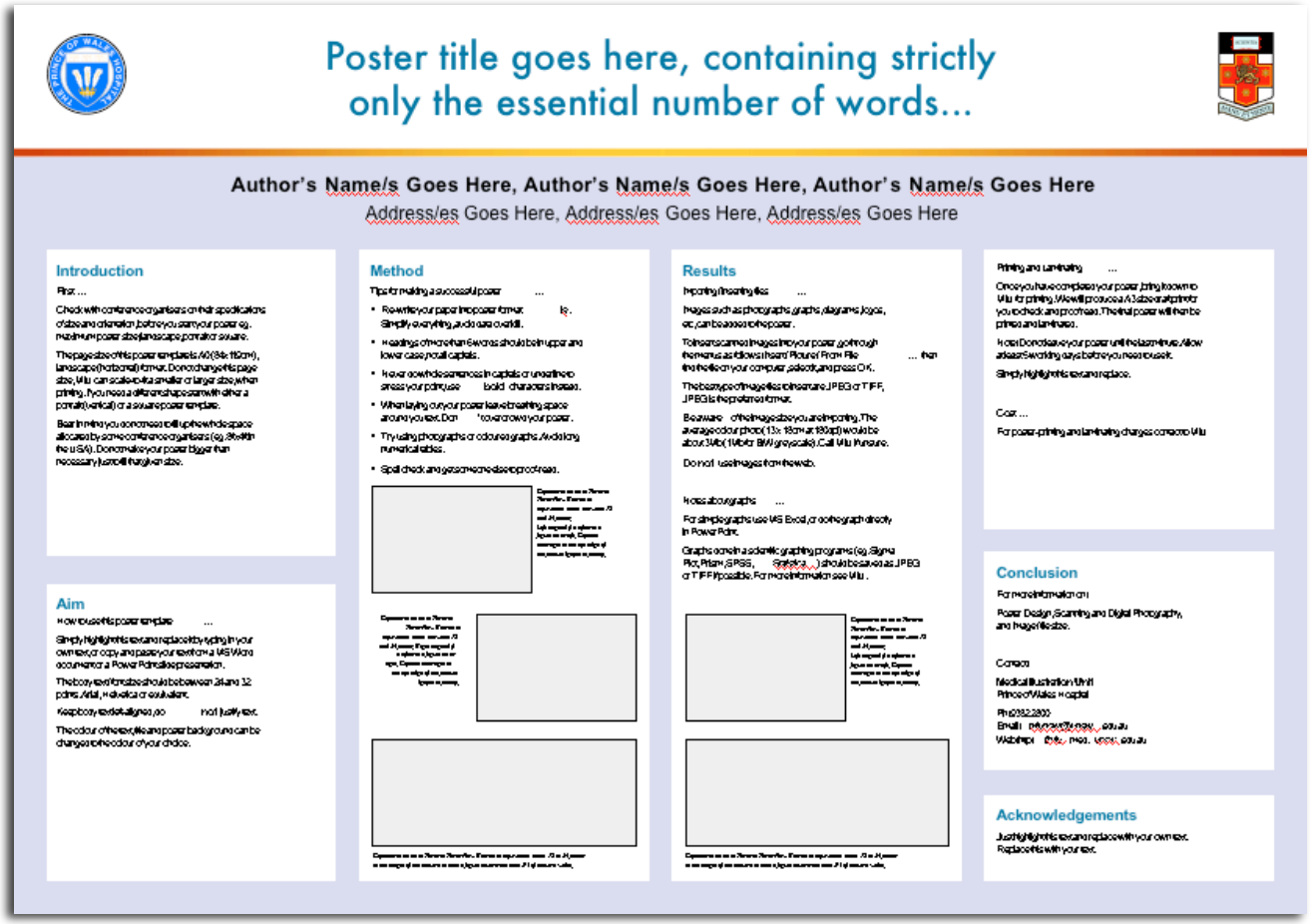
The pre-treatment height was subtracted from the predicted height, then divided by the post-treatment height subtracted from the predicted height, to find the percentage of lost height restored. One set of X-rays by one surgeon (FMP) are used to show an example height restoration (Fig. 5A) and deformity correction (Fig. 5B). Device-related major complications from all procedures are reported. PMMA leaks in the first 70 procedures performed by one surgeon (IHL) were assessed with X-ray and MRI.

PRELIMINARY RESULTS

CONCLUSIONS

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 osteopenia. 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?



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

First ...

Check with conference organisers on their specifications of size and orientation, before you start your poster eg. maximum poster size, landscape, portrait or square.

The page size of this poster template is A0 (84x 118cm), landscape (horizontal) format. Do not change this page size, MS will scale-up to a smaller or larger size, when printing. If you need a different shape poster with either a portrait (vertical) or a square poster template.

Bear in mind you do not need to fill up the whole space allocated by some conference organisers (eg. 36x48in the USA). Do not make your poster bigger than necessary just to fill the given size.

Aim

How to use this poster template ...

Simply highlight this text and replace it by typing in your own text, or copy and paste your own text from a MS Word document or a PowerPoint slide presentation.

The body text fonts should be between 24 and 32 points. Arial, Helvetica or equivalent.

Keep body text left aligned, do not justify text.

The colour of the text, title and poster background can be changed to the colour of your choice.

Method

Tips for making a successful poster ...

- Re-write your paper into poster format. Ie. Simplify everything, avoid over-fulfill.
- Headings of more than 6 words should be in upper and lower case, not all capitals.
- Never ever write sentences in capitals or underline or stress your points using bold characters instead.
- When laying out your poster leave breathing space around your text. Don't overcrowd your poster.
- Try using photographs or coloured graphs. Avoid long numerical tables.
- Spell check and get someone else to proof read.

Results

Importing/inserting files ...

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

To insert or cut/paste images into your poster, go through the menus as follows: Insert/ Picture/ From File ... then find the file on your computer, select it, and press OK.

The best type of image files to insert are JPEG or TIFF. JPEG is the preferred format.

Be aware of the image size you are importing. The average colour photo (13x 18cm at 180dpi) would be about 3Mb (1Mb for B/W greyscale). Call Mlu if unsure.

Do not use images from the web.

Notes about graphs ...

For simple graphs use MS Excel, or define graph directly in Power Point.

Graphs done in academic graphing programs (eg. Sigma Plot, Prism, SPSS, Statistica, ...) should be saved as JPEG or TIFF if possible. For more information see Mlu .

Printing and Laminating ...

Once you have completed your poster, bring it down to Mlu for printing. We will produce a A1 size proof print for you to check and proof read. The final poster will then be printed and laminated.

Note: Do not leave your poster until the last minute. Allow at least 5 working days before you need to use it.

Simply highlight this text and replace.

Cost ...

For poster-printing and laminating charges contact Mlu

Conclusion

For more information on:

Poster Design, Scanning and Digital Photography, and Image file size.

Contact

Medical Illustration Unit
Prince of Wales Hospital

Ph: 9382 2800
Email: mlu@cuhk.edu.au
Website: http://www.med.cuhk.edu.au

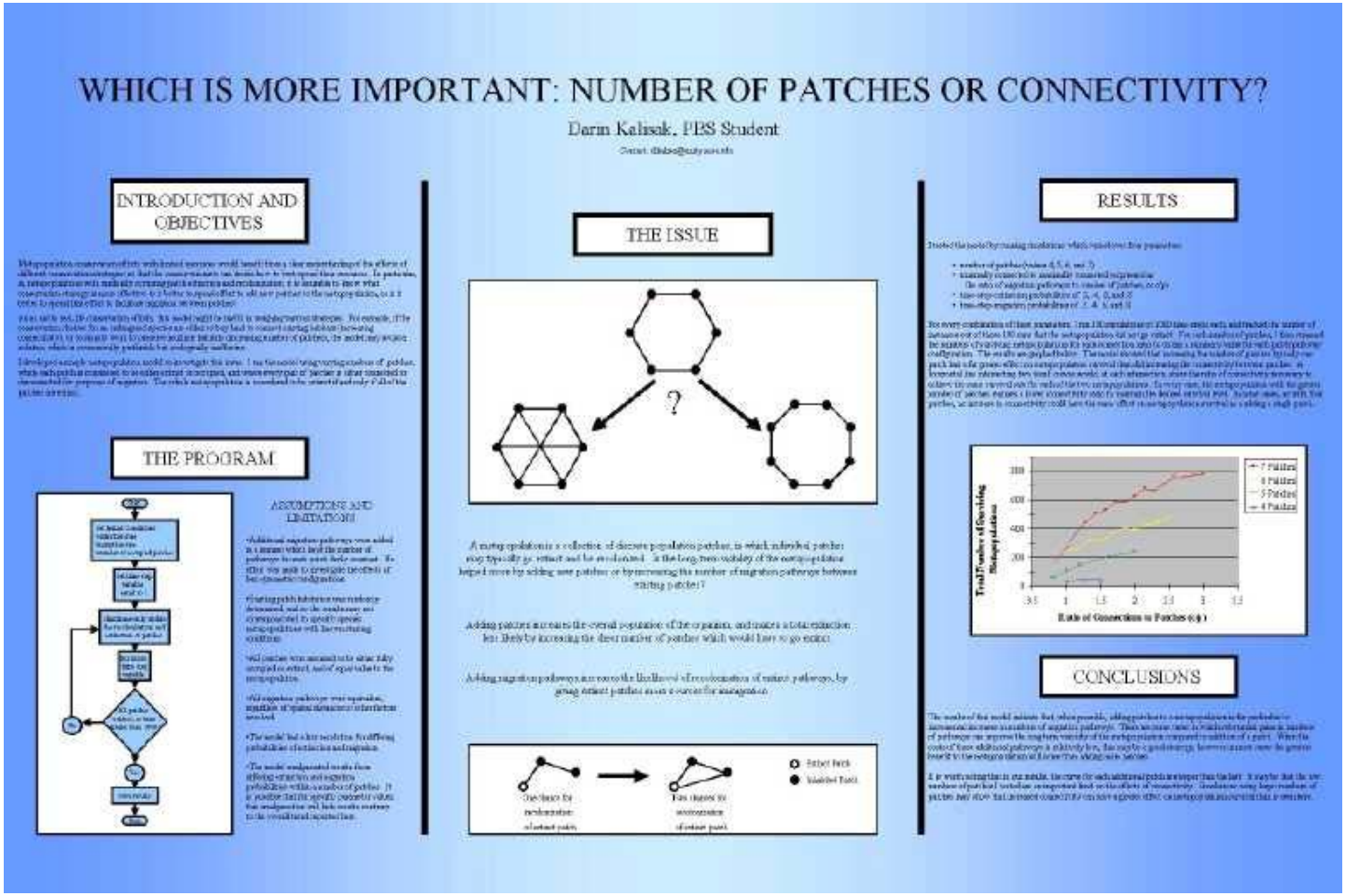
Acknowledgements

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

Perfect!

A Large-Scale Public Library Renovation in Taiwan
www.ntl.gov.tw

Oh my gawd!



WHICH IS MORE IMPORTANT: NUMBER OF PATCHES OR CONNECTIVITY?

Darin Kalisak, PES Student

INTRODUCTION AND OBJECTIVES

THE PROGRAM

ASSUMPTIONS AND LIMITATIONS

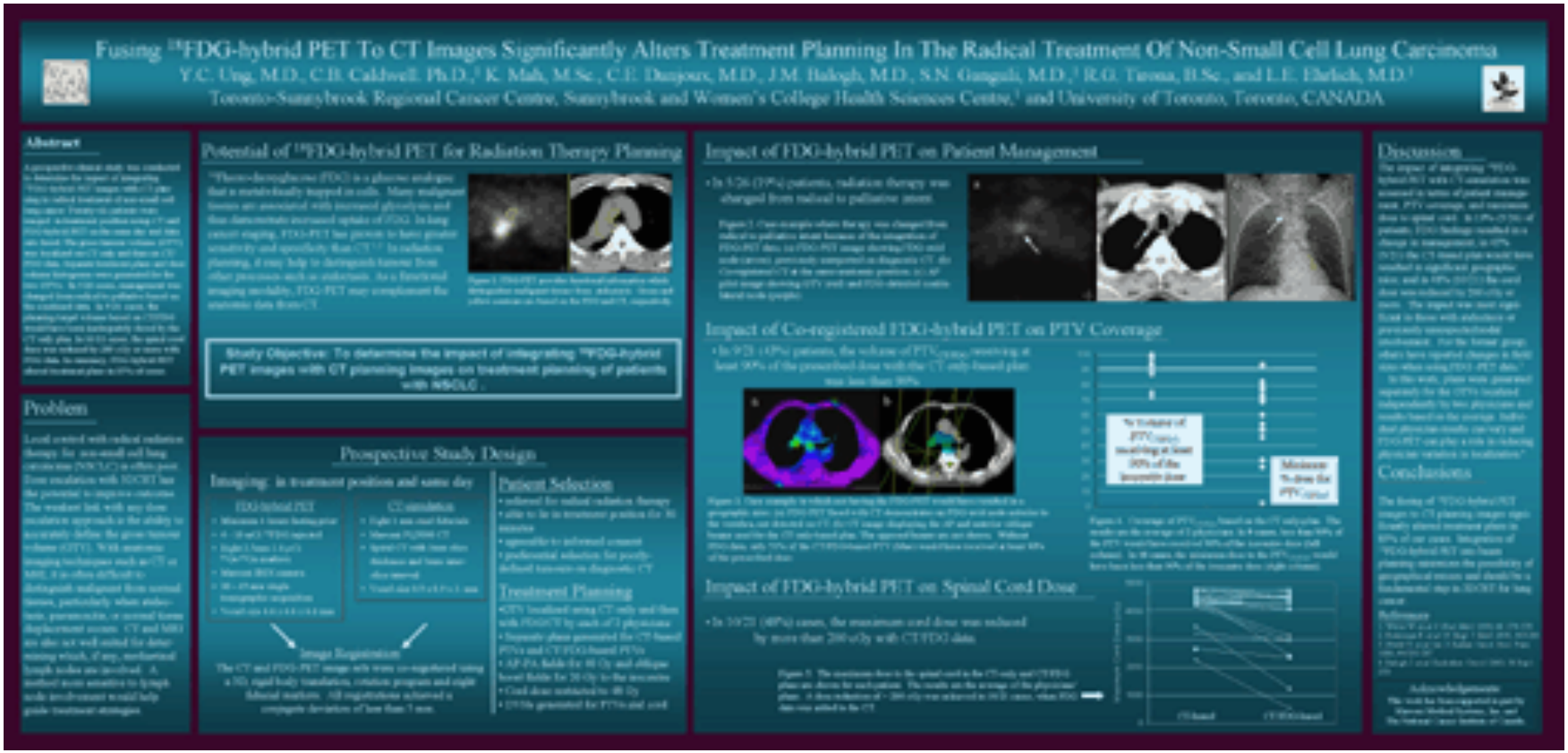
THE ISSUE

?

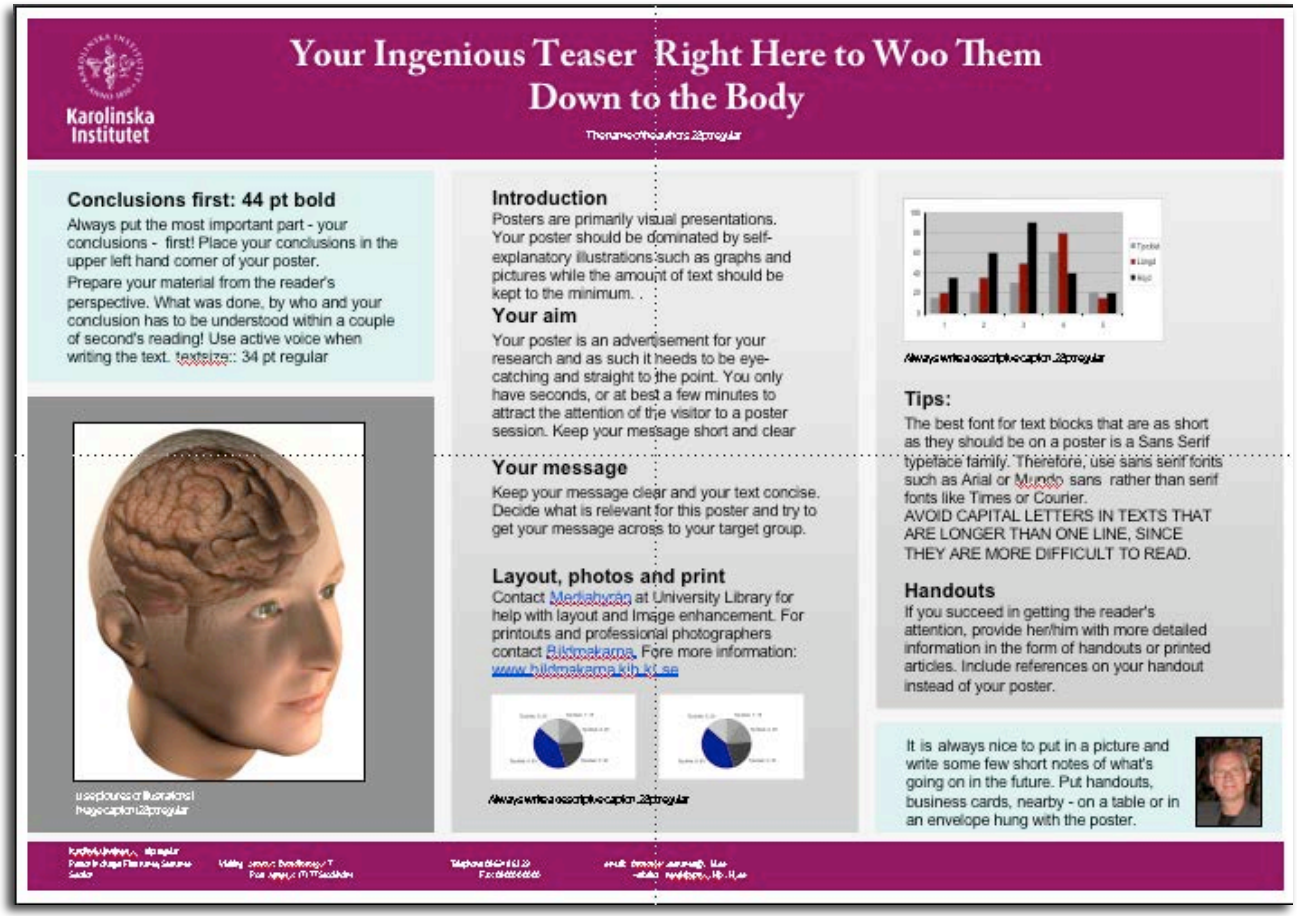
RESULTS

CONCLUSIONS

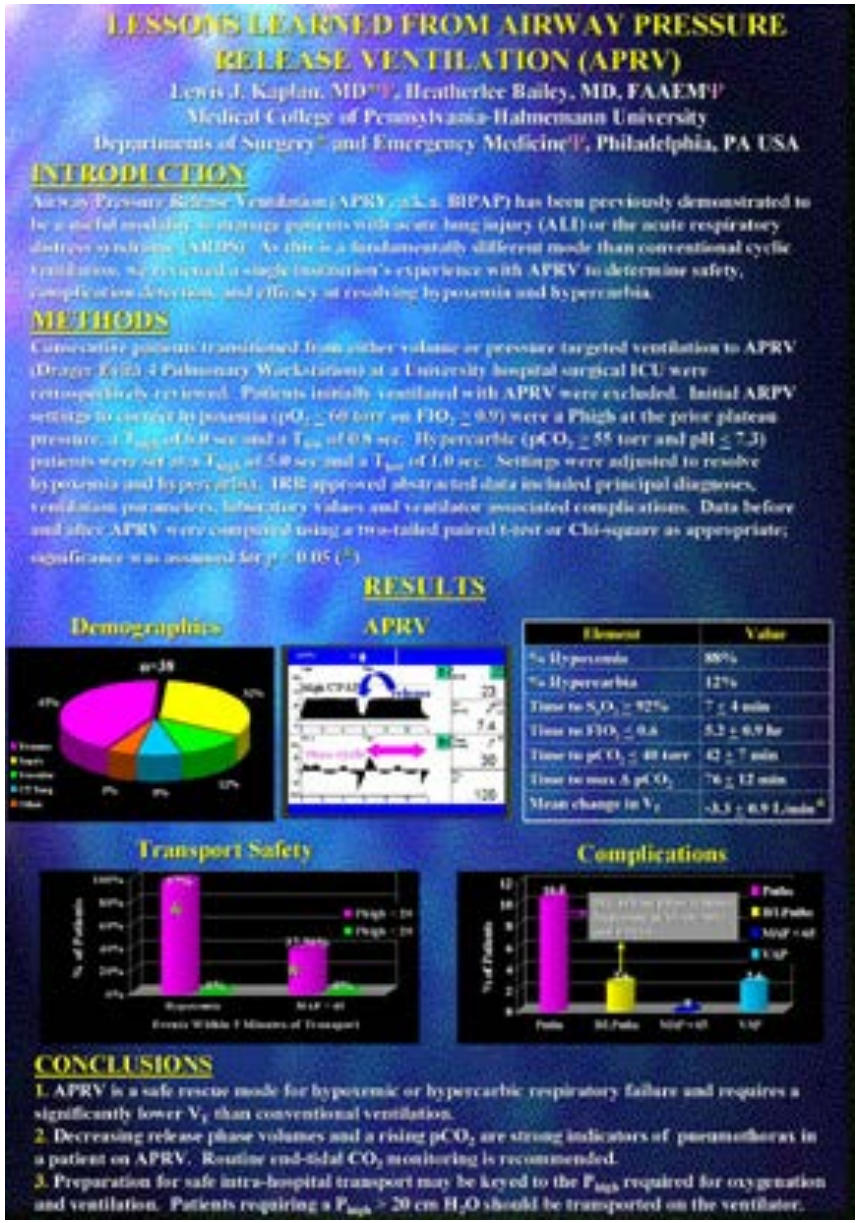
Nice flow, but too metallic



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


Your Ingenious Teaser Right Here to Woo Them Down to the Body
Karolinska Institutet
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
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 Bildmekarna. For more information:
www.bildmekarna.ki.ki.se
Always write a descriptive caption 28proxylar
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 forits such as Arial or Mundo 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.

Gorgeous!



LESSONS LEARNED FROM AIRWAY PRESSURE RELEASE VENTILATION (APRV)

Lewis J. Kaplan, MD[1,2], Heatherlee Bailey, MD, FAAEM[2]
Medical College of Pennsylvania-Hahnemann University
Departments of Surgery[1] and Emergency Medicine[2], Philadelphia, PA USA

INTRODUCTION

Airway Pressure Release Ventilation (APRV, a.k.a. BIPAP) has been previously demonstrated to be a useful modality in managing 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 reviewed 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 Evita 4 Pulmonary Workstation) at a University hospital surgical ICU were retrospectively reviewed. Patients initially ventilated with APRV were excluded. Initial ARPV settings to correct hypoxemia ($pO_2 \leq 60$ torr on $FIO_2 \geq 0.9$) were a P_{high} at the prior plateau pressure, a T_{high} of 6.0 sec and a T_{low} of 0.8 sec. Hypercarbic ($pCO_2 \geq 55$ 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 $p < 0.05$ [3].

RESULTS

Demographics

APRV

Element	Value
% Hypoxemia	88%
% Hypercarbia	12%
Time to $S_pO_2 \geq 92\%$	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 Δ pCO_2	76 ± 12 min
Mean change in V_t	-3.3 ± 0.9 L/min[4]

Transport Safety

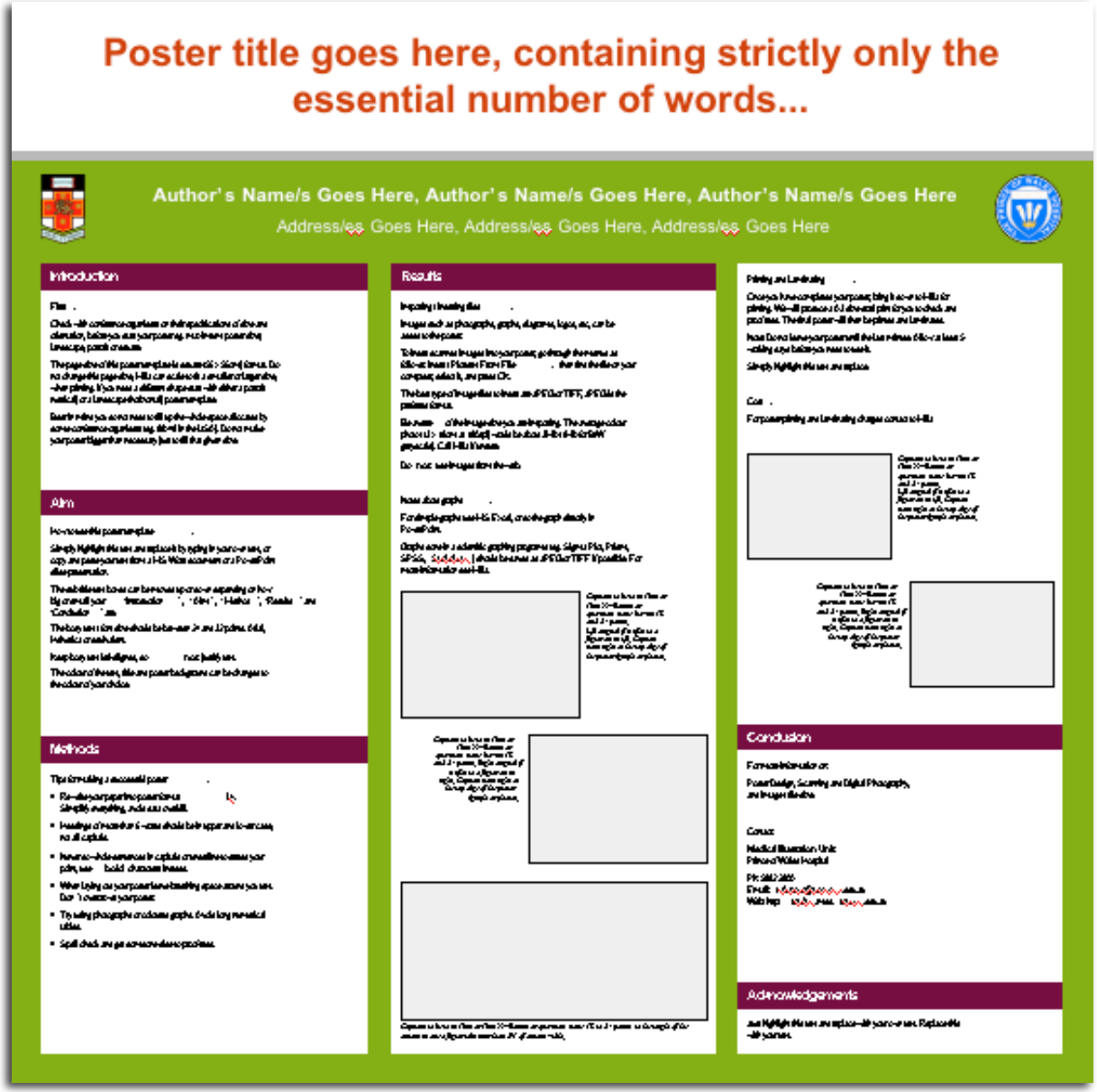
Complications

CONCLUSIONS

1. APRV is a safe rescue mode for hypoxemic or hypercarbic respiratory failure and requires a significantly lower V_t 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!


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
Aim
Methods
Results
Conclusion
Acknowledgements

This works!

Helpful sites on poster presentations:

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

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

LiLynn Graves

Web and Graphic Designer, CCMR

CCMR Cornell Center for Materials Research

Cornell University, Ithaca, NY

http://www.ccmr.cornell.edu