Creating effective posters
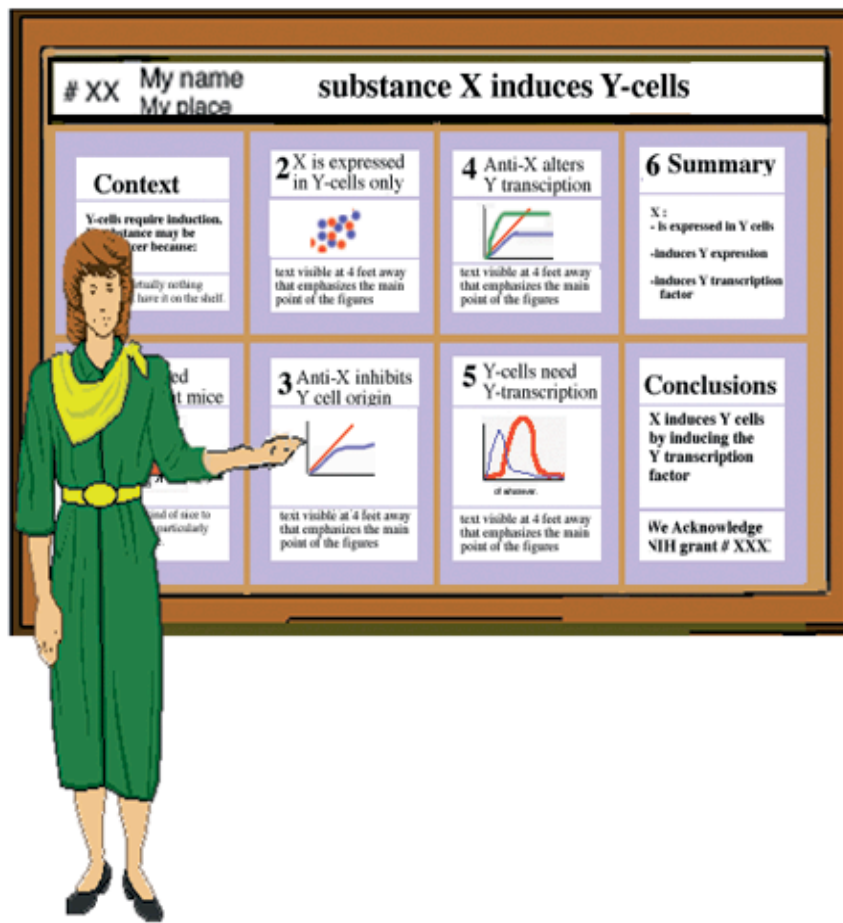
Kathryn Tosney

A presentation that reveals ineffective and effective strategies for emphasizing your message

Creating effective posters

Many of your presentations are not talks:

They are posters

Are your posters effective?
Do they attract enthusiastic audiences?
Or, do they attract only competitors?

This presentation shows both positive and negative examples to help you increase your clarity and impact

Creating effective posters

This tutorial is also available online:

http://biology.lsa.umich.edu/research/labs/ktosney/file/PostersHome.html

Or access the link via my home page:
http://www-personal.umich.edu/~ktosney/

What is a Poster?

A poster is not a research paper stuck to a board
An effective poster uses a visual grammar

It doesn't tell:
It SHOWS

It expresses your points in graphical terms

It avoids visual chaos
- **no jagged edges**
- **no multi-sized boards**

It guides the viewer by using a visual logic
- **an hierarchical structure**
- **emphasis on the main points**

It displays the essential content--the messages--
- **in the title**
- **in the main headings**
- **in the graphics**

It indicates relative importance graphically
- **large type for each main point**
- **small type for details**

Main headings explain
- **avoid uninformative headings like "results"**
- **explicitly reveal the point**

All elements are visible from 4 feet away

Poster presentation styles

Part one

How to Obscure Your Message

A set of eleven examples illustrate often-used design features that obscure your message
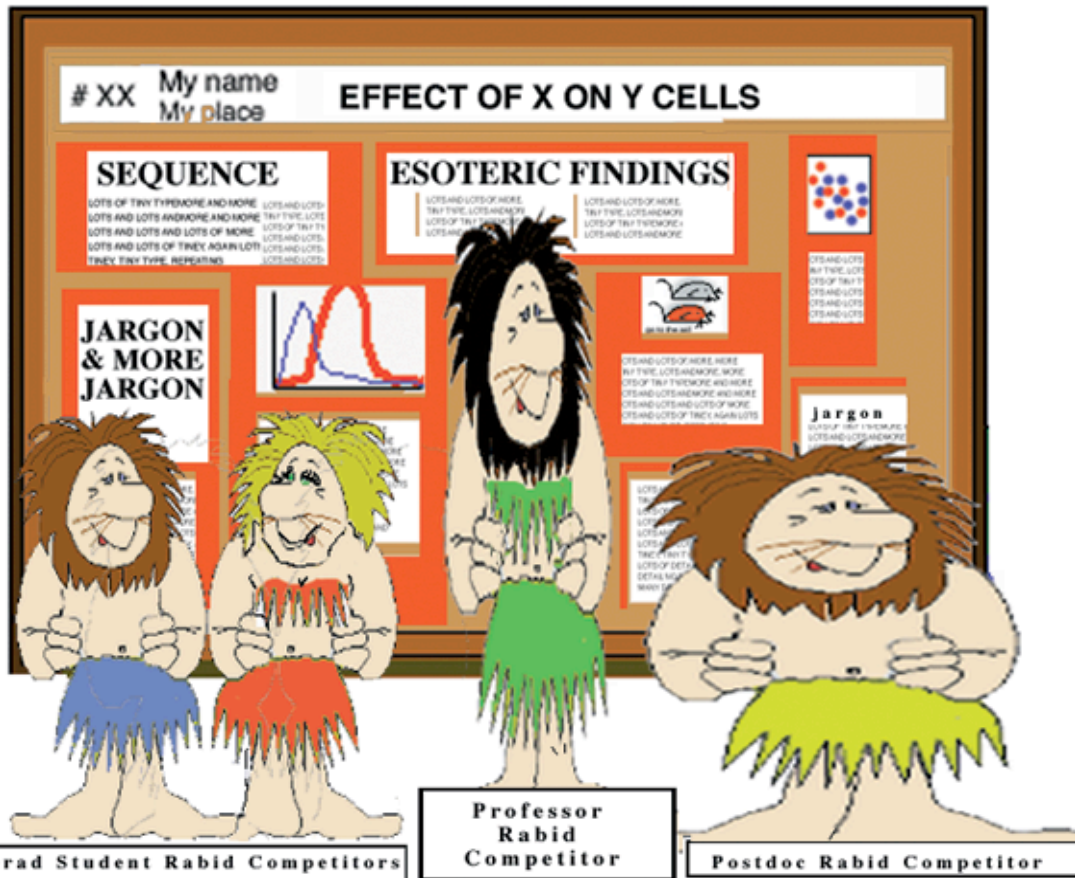
1. Design for your competitors

Be so opaque that only your most rabid competitors can follow your work.

Directives	Consequences
omit	**maximum opacity**
•context	•highly esoteric
•interpretations	•few understand
•conclusions	•deters readers
use	**you may need further**
•jargon	**ploys to deter highly-**
•abbreviations	**motivated competitors**

2. Lay out in rows, left to right
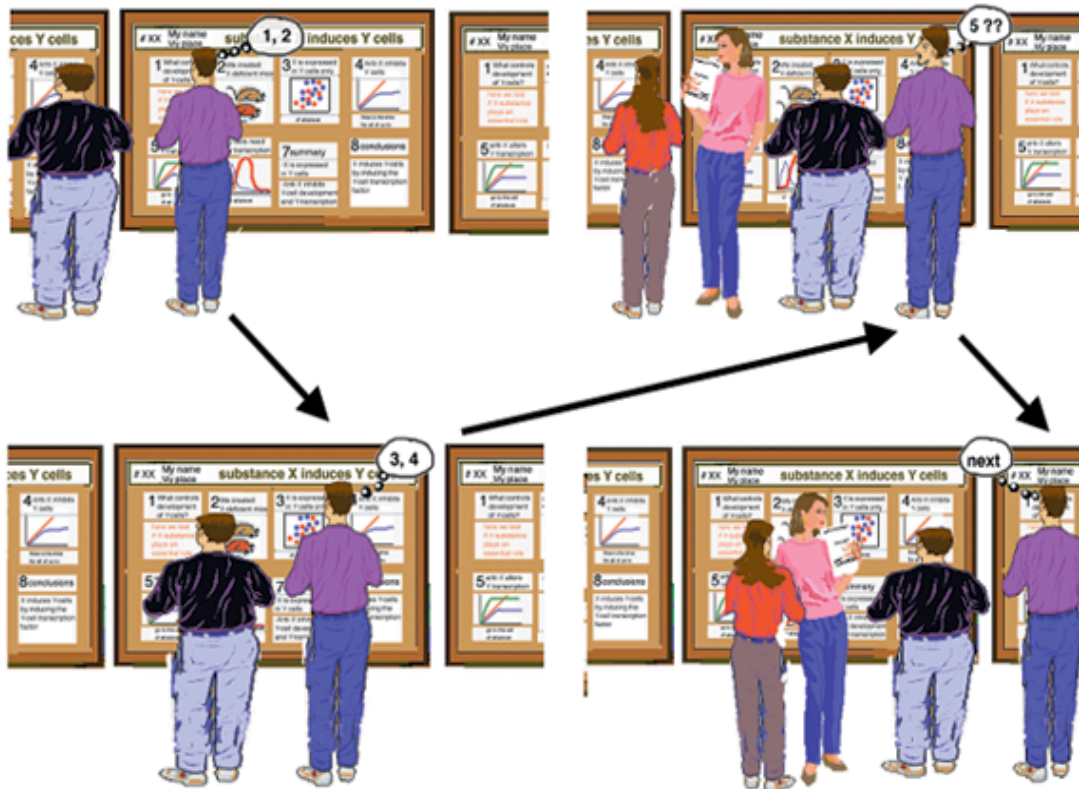
Your viewers will move quickly past your poster and read only the top row

Viewers who read the top row will be unable to fight their way back to the beginning

Viewers will quietly proceed to the next poster, thus saving you the annoyance of an audience
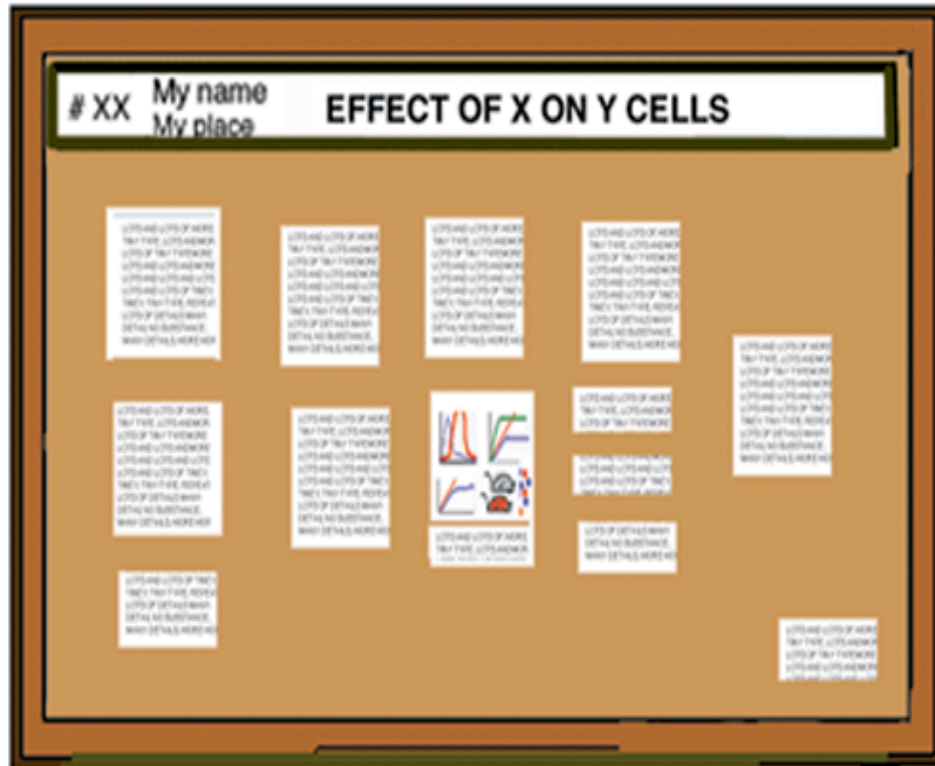
3. Let them guess the sequence

Avoid clues that would help people follow your presentation

Omit
- numbers
- letters
- arrows
- logical sequence

Or use
- tiny numbers
- obscure placement
- Roman numerals
- Greek letters

- spread panels randomly

- let viewers hunt for the next section

- with luck, viewers will associate the wrong legend and figure and be unable to scoop you!

4. Emphasize text, not graphics

EFFECT OF X ON Y CELLS

Use a publication-style format

Don't show: tell!

• a publication-style format supplies every detail

• with luck, most people will have insufficient time to read your poster

•simply staple up your manuscript, to imply you will soon publish this work
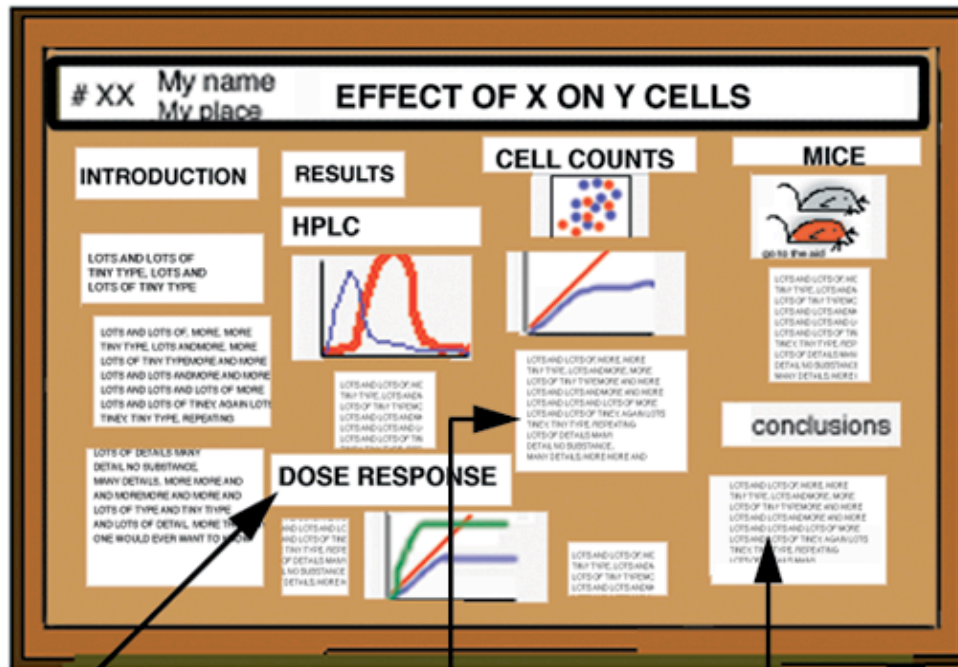
•if you do use figures, omit legends

5. Be wordy, but avoid explanations

EFFECT OF X ON Y CELLS

Large type states methods, not results

Results artfully buried in a methods description

Carefully omits interpretations

Avoid substance or explicit statements

Omit the message

- **highlight methods** with large typeface
- **bury points in methods**
- **avoid interpretations**
- **never state conclusions**
- **avoid being explicit: refer to "the response" but never identify it**

Be wordy

- **use passive voice**
- **use complex sentences**
- **never use one word when you can use ten**
- **repeat text in legends**
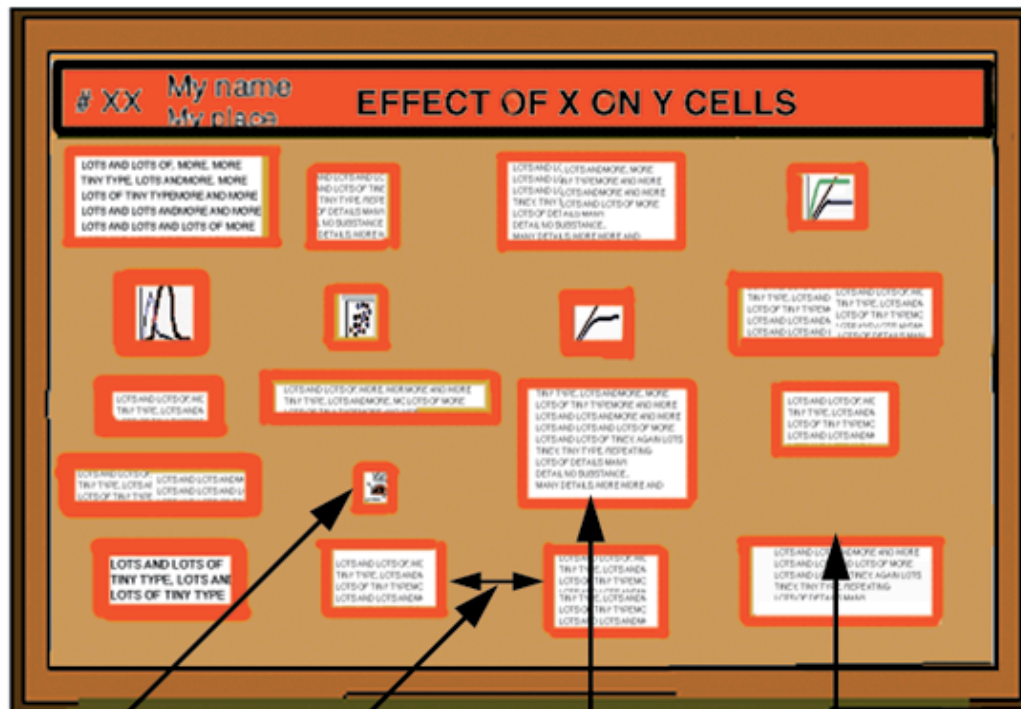- **explain everything-- except the main point**

6. Avoid emphasis

EFFECT OF X ON Y CELLS

Tiny figures

Even spacing throughout

Type all the same size: tiny

No headings

De-emphasize substance visually

Think small

- put main points in the tiniest type

- make all figures tiny

- on graphs, use
  - thin lines
  - bars with patterns
  - grays, no color
  - detailed keys

Try for homogeneity

- mount each paragraph, heading and figure on its own board

- separate each board by the same space

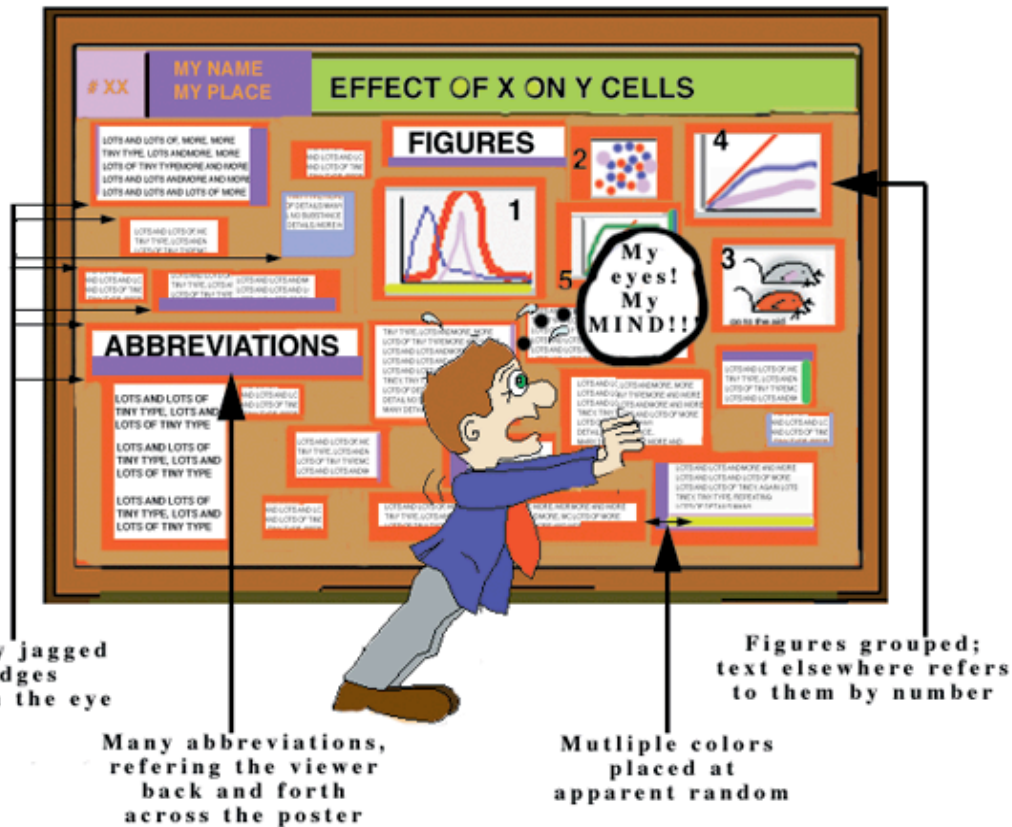- use the same size type for headings and text

7. Distract them visually

Many jagged edges catch the eye

Many abbreviations, refering the viewer back and forth across the poster

Mutliple colors placed at apparent random

Figures grouped; text elsewhere refers to them by number

Try for utter chaos

Maximize variety

- panels different sizes
- panels different shapes
- panels fail to line up
    - many jagged edges
    - catch the eye
- many colors
    - purple, chartreuse
    - try to blind the innocent bystanders

Refer them elsewhere

- many cross-references
- group all figures
    - legends elsewhere
    - text elsewhere
    - refer to figs by #
- many abbreviations
- list definitions
    - in a separate place
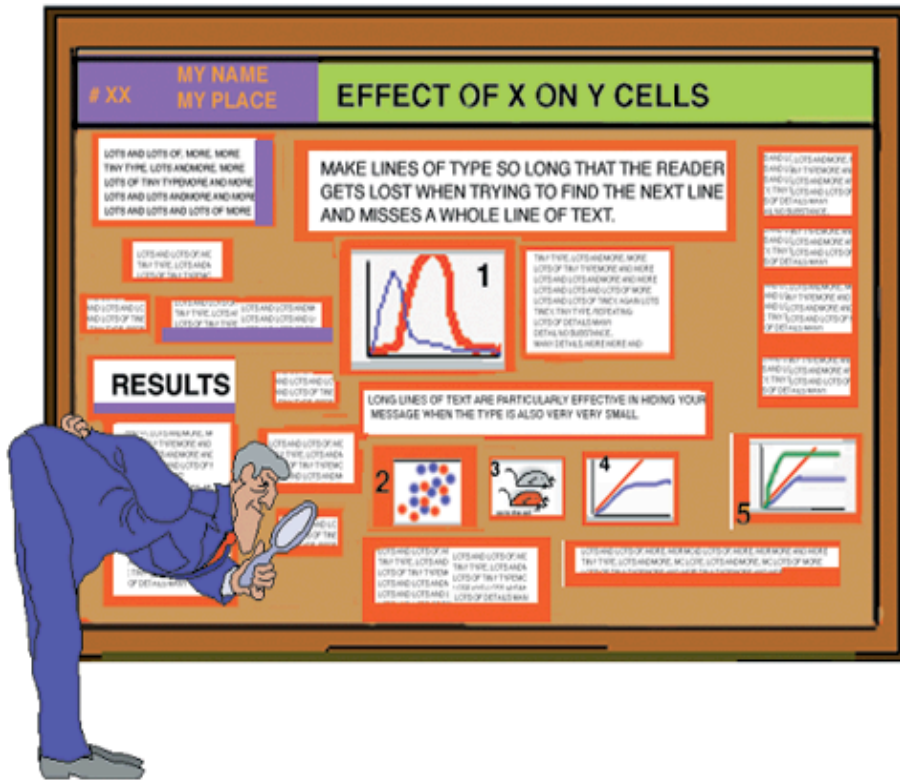   - fail to define the central term

8. Make text hard to read

Try to make text impenetrable

Start with tiny text

- use 10-12 point type

- only text without content--"results"-- should be readable

- small text will exclude senior researchers with reading glasses
  - a bonus!

Then become arcane!

- use sans serif **Helvetica**

- center all type

- or use right-adjusted

- use only UPPER CASE

- use lines of text so long that readers lose their place

9. Never draw conclusions

Never specify real information

Don't commit yourself

- avoid strong statements
- to conclude, repeat results
  - "Antibody abolishes the response"
  - NOT "X is essential to apoptosis"
- use a non-committal title
  - "Effect of X on Y" (insert relevant X, Y)

Cover your ass

- conclude: "This issue needs further study"
  - virtually everything needs further study, so you can't be faulted
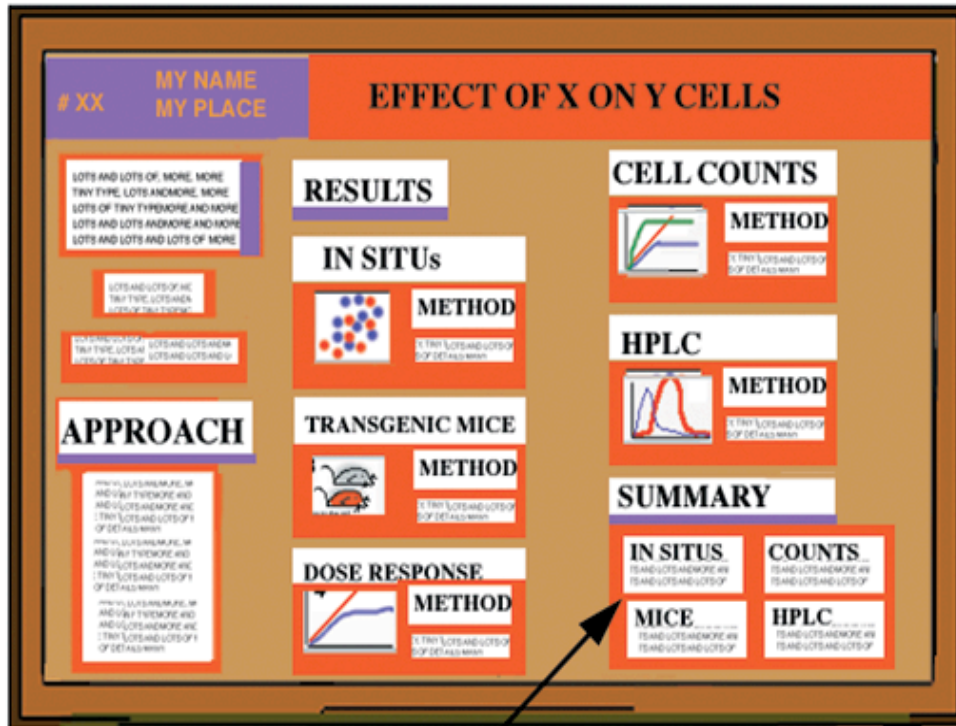- if you are vague enough, no one will know why you did your study

10. Be methods-oriented

EFFECT OF X ON Y CELLS

Even the conclusion or summary should emphasize the methods

Emphasize methods, not message

Be thorough

- identify every method
  - in great detail
- emphasize methods
  - identify methods (not results) in all headings
- to conclude, again emphasize the methods used to obtain the results

Benefits

- show your main concern
  - is with methods
  - not with concepts
- many job offers!!
  - as a technician...
  - some lab heads like hands without a thinking head attached

11. Give a detailed tour
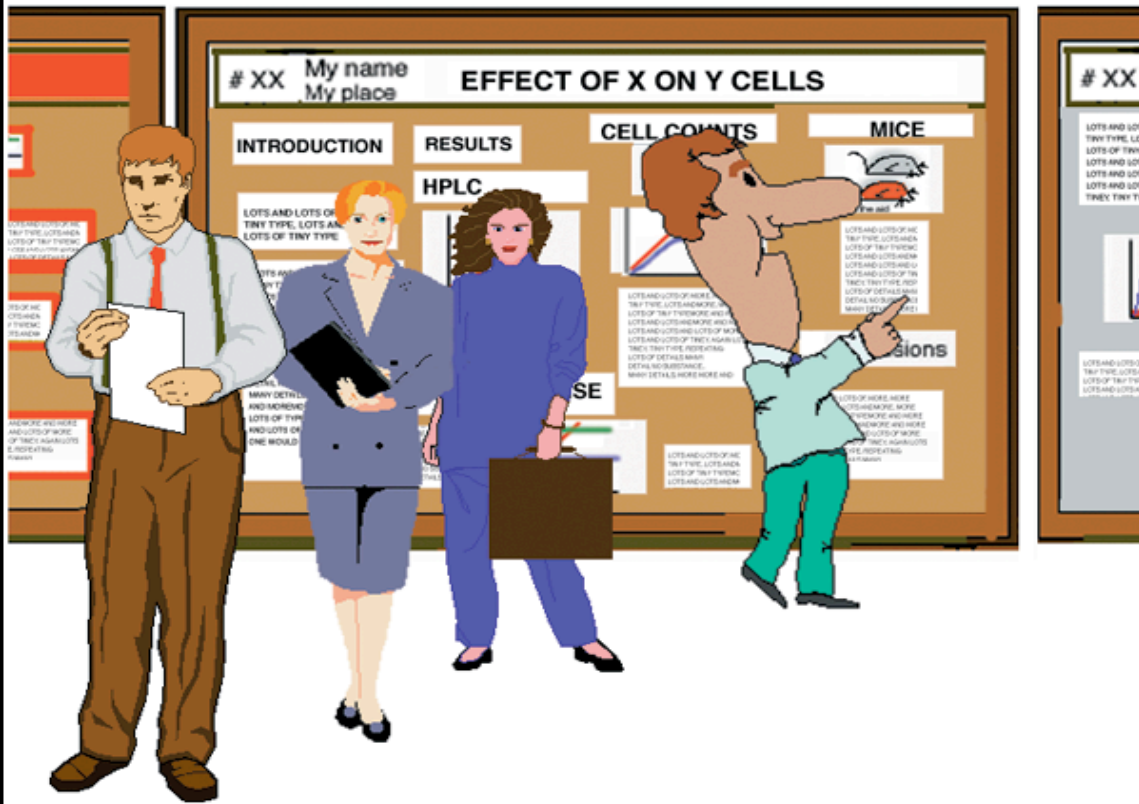
Be compulsively complete

Read every line

- read all the text

- trace each graph line

- dwell on the approach
  - every method
  - every step

- be biographical
  - its about YOU!
  - don't reveal purpose

Hints

- speak in a hesitant tone
  - a whisper is ideal

- stand with your back to your audience
  - many people will be able to escape
  - you may have to hold onto people's arms

Poster presentation styles

Part two

How to Emphasize Your Message

A set of eleven examples illustrate design features that will emphasize your message

1. Design for three audiences
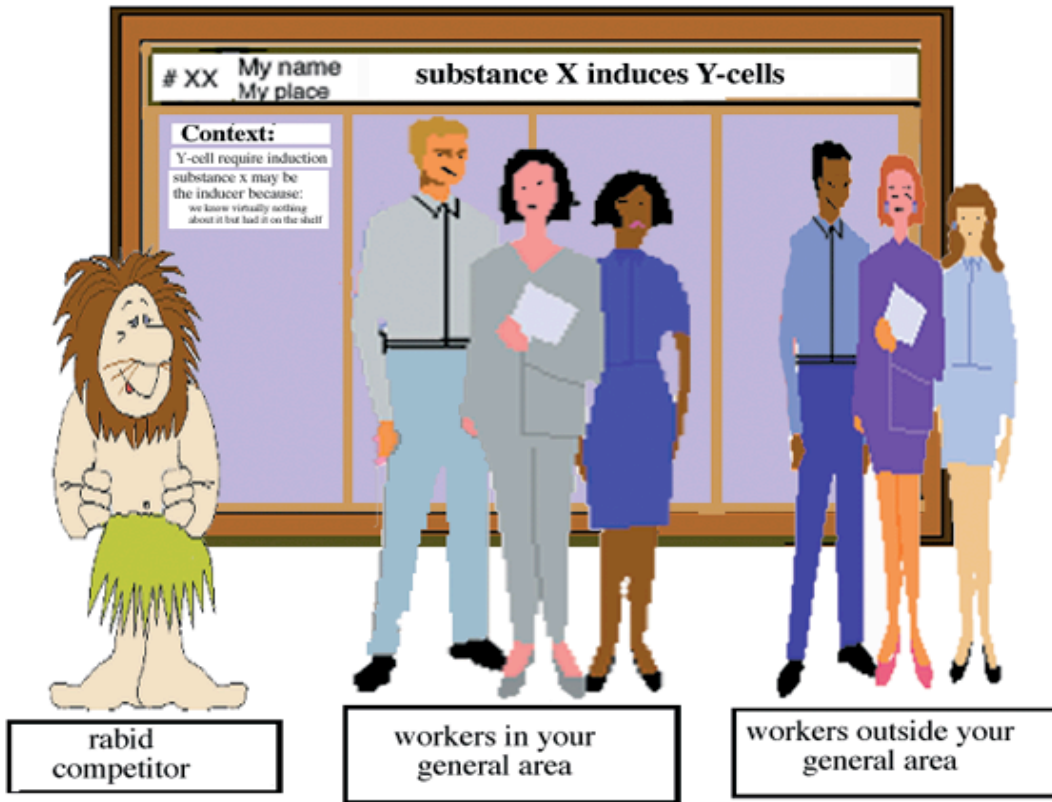
Attract more than your competitors

Rabid competitors
- come anyway
- need no effort to attract
- not your main audience!

Workers in your area
- your main audience
- attracted by
    - accessible poster
    - need context

Workers outside your general area
- bonus audience
- need explanation of the problem and solution
- attracted by accessible message
- will provide links to distant fields

2. Layout in column format
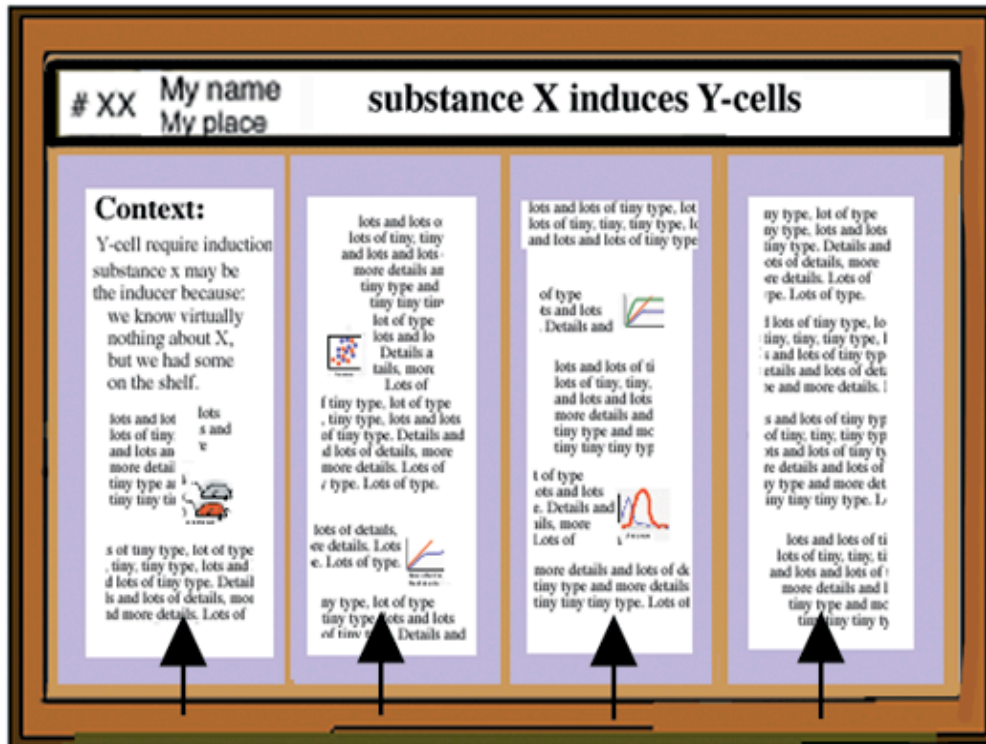
Your audience reads left to right

Smooth traffic

If the poster is organized in columns then viewers can view all of a column before they move to the next column

Avoid gridlock

If the poster is organized in rows, viewers must fight their way back to the beginning

3. Indicate the sequence
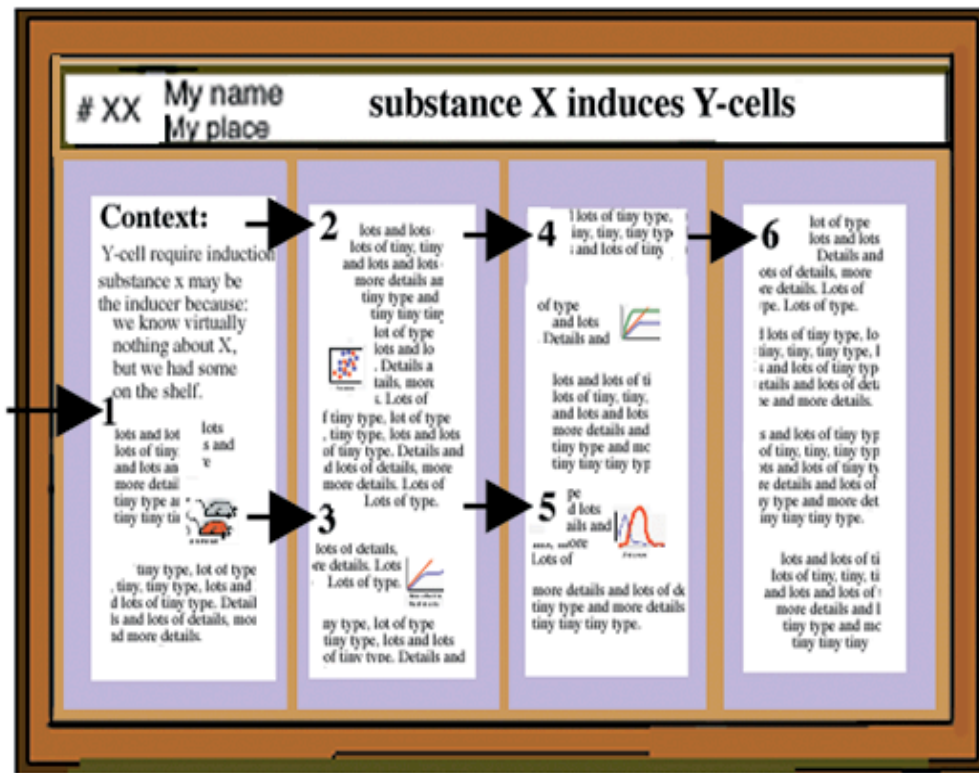
Supply clues

Use

- numbers
- letters
- arrows
- logical sequence

Be visual

- sequences are easier to follow if panels are ordered visually

- panels in regular columns are easier to follow than panels placed asymmetrically

4. Use visual grammar
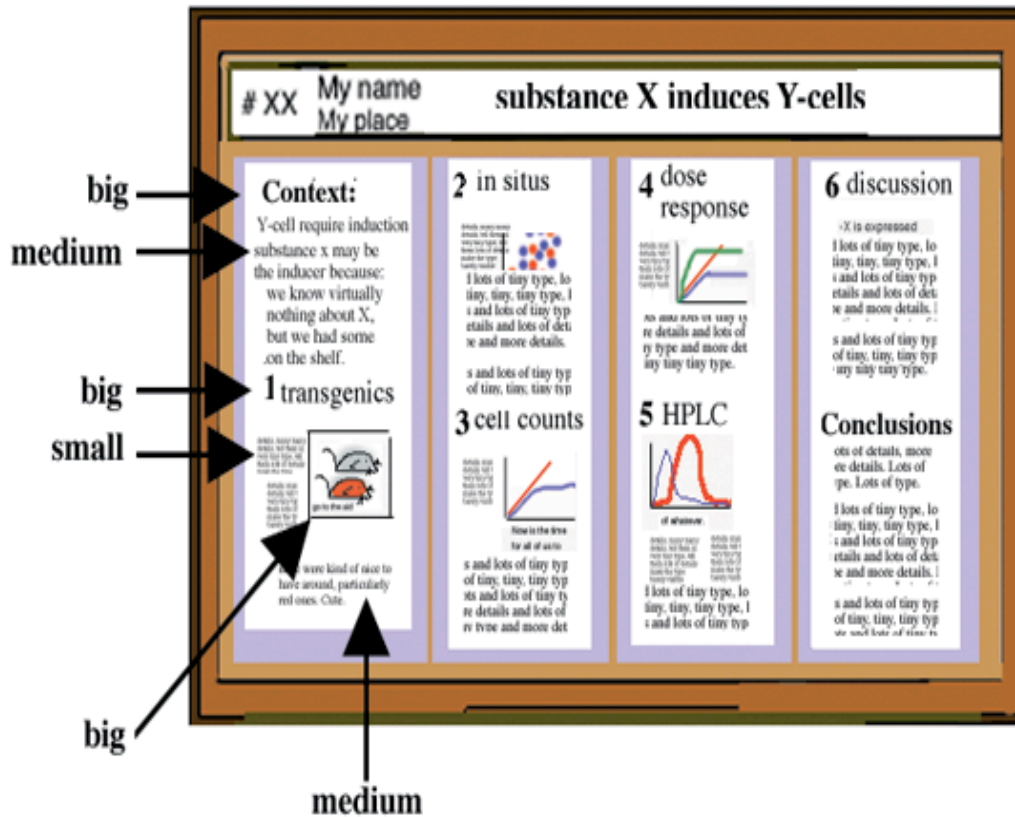
Use a graphic hierarchy

Show, don't tell

- use figures

- use graphs

- visuals should dominate the poster visually

Visually reflect the relative importance

- if it is important,
  - make it **BIG**

- type size proportional to importance
  - title: largest
  - heading: medium
  - text: smaller

5. The essential is in large type
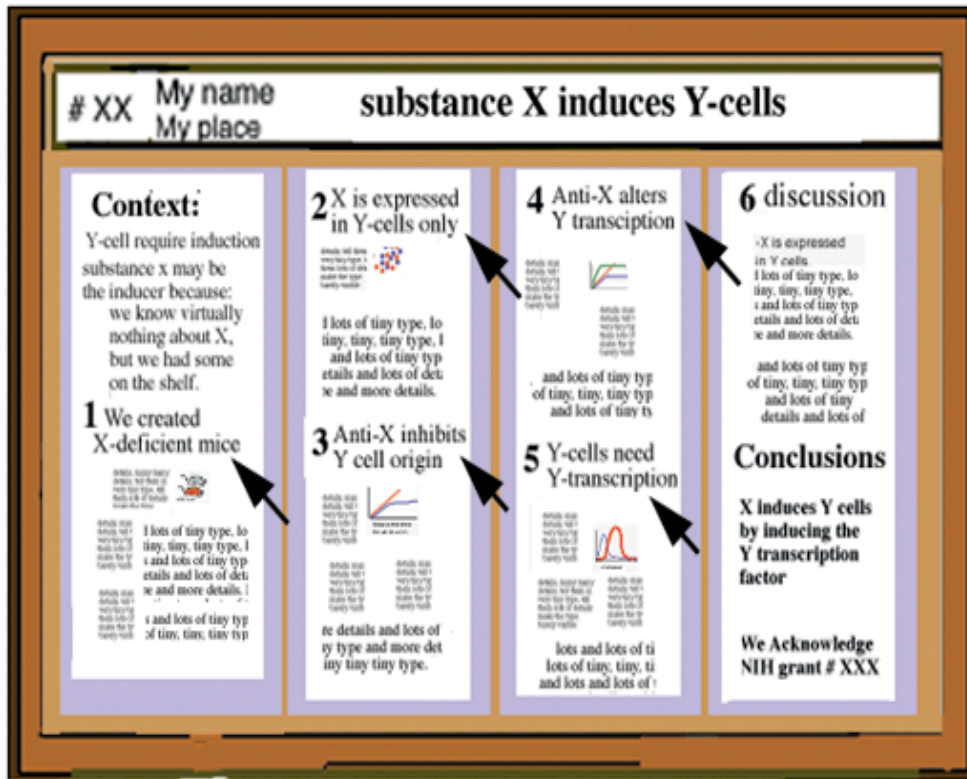
Take-home messages in big headings

Be explicit

- headings emphasize experimental logic

- identify results explicitly
  - instead of "results" say "transgenics grow extra feet"
  - instead of "in situs" say "X is expressed only in Y cells"

Message, not categories

- headings identify THE results explicitly, rather than merely indicating "results are below"

- forego the temptation to classify results by methods alone

6. Emphasize material visually

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 We created
X-deficient mice

2 X is expressed
in Y-cells only

lots of tiny type, lo
tiny, tiny, tiny type, l
s and lots of tiny typ
etails and lots of det
ne and more details.

3 Anti-X inhibits
Y cell origin

Now is the time
for all of us to

re details and lots of
ry type and more det
iny tiny tiny type. L

4 Anti-X alters
Y transcription

ys and lots of tiny typ
pof tiny, tiny, tiny typ
yrts and lots of tiny ts

5 Y-cells need
Y-transcription

of whoever

lots and lots of ti
lots of tiny, tiny, ti
and lots and lots of !

6 discussion

s and lots of tiny typ
of tiny, tiny, tiny typ
rts and lots of tiny ty
re details and lots of
ar type and more det

s and lots of tiny typ
of tiny, tiny, tiny typ
rts and lots of tiny ty
re details and lots of
ar type and more det

Conclusions

X induces Y cells
by inducing the
Y transcription
factor

**We Acknowledge
NIH grant # XXX**

mice were k   d nice to
have around, pr cularly
red ones. Cute

BIG figures that use color

Graphic elements should dominate

Think graphic

- graphics, cartoons, figures, **not tables**

- color to emphasize

- color to link words and images

- bold lines, color to distinguish differences

Think accessible

- formats that don't require keys

- explanations directly on the figures

- minimize abbreviations

- no cross-references

7. Avoid visual distraction

substance X induces Y-cells

XX My name My place

Context
Y-cells require induction. X-substance may be the inducer because:
We know virtually nothing bout X but have it on the shelf.

2 X is expressed in Y-cells only
Avoid lot tiny type lots of tiny type
text visible at 4 feet away that emphasizes the main point of the figures

4 Anti-X alters Y transciption
Avoid tiny type lots of tiny type
text visible at 4 feet away that emphasizes the main point of the figures

6 discussion
Avoid lots of tiny text discussing all the methodolocgial and conceptual caveats of your work. Keep to the point; leave the discussion verbal.

1 We created X-deficient mice
Avoid tiny type lots of tiny type lots of tiny type
mice were kind of nice to have around, particularly red ones. Cute.

3 Anti-X inhibits Y cell origin
Avoid lots of tiny type lots of tiny type
Now is the time for all of us to
text visible at 4 feet away that emphasizes the main point of the figures

5 Y-cells need Y-transcription
Avoid tiny type lots of tiny type lots of tiny type
of whatever.
text visible at 4 feet away that emphasizes the main point of the figures

Conclusions
X induces Y cells by inducing the Y transcription factor
We Acknowledge NIH grant # XXX

group material unto units

visually separate the units

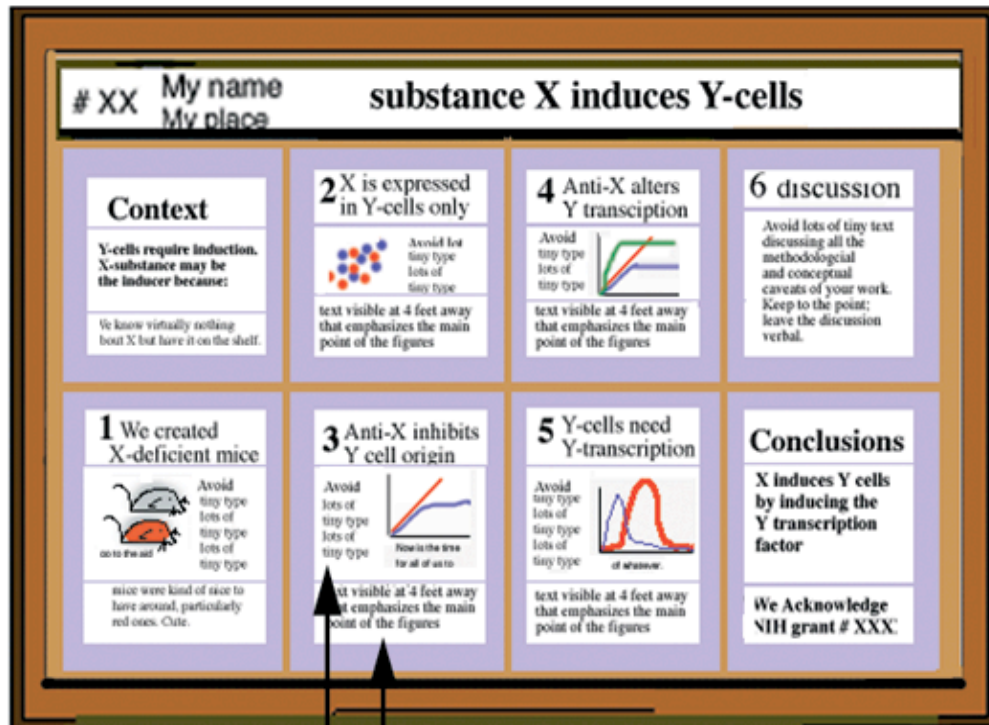# Organize information visually

Maximize order

- panels similar sizes

- panels similar shapes

- panels line up

- elements grouped
  - heading, figure, text form a single, conceptual unit

Color for emphasis

- use color for **emphasis**

- color consistent
  - if your molecule is **red** in one panel, make it **red** in all

- muted or neutral background

8. Make text readable

Text is readable at a distance

simple, direct, and readable

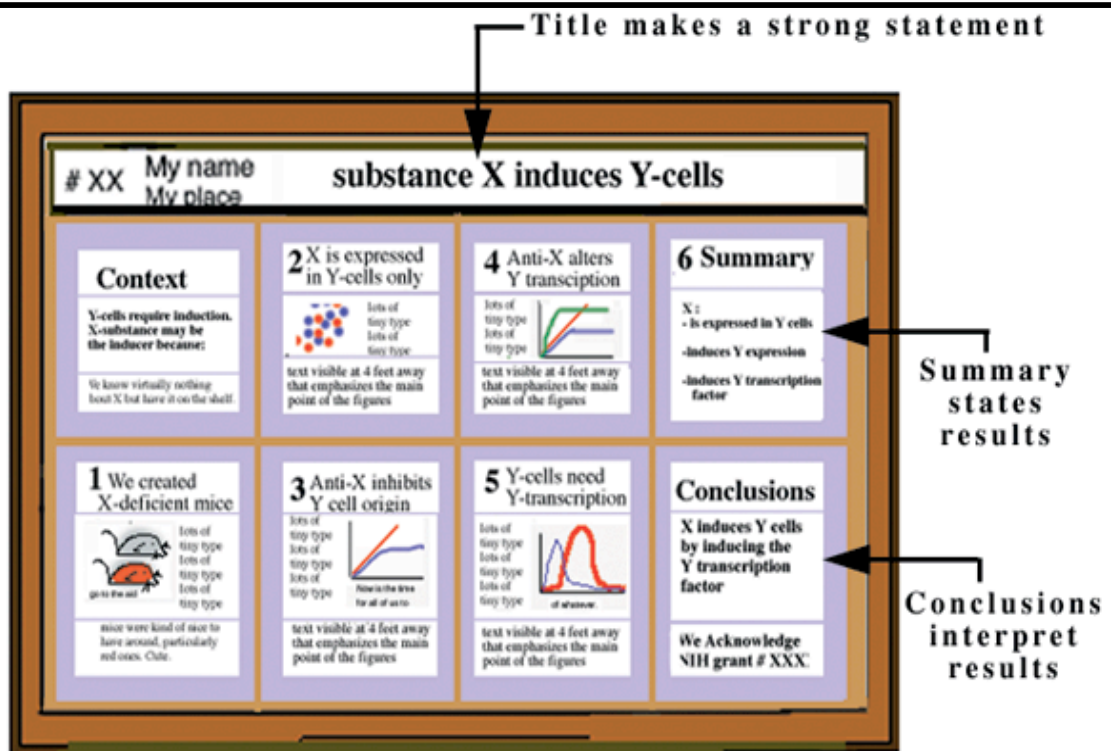### Readability criteria

- **title, major headings**
  - **readable at 6 feet**
  - **attract viewer**
- **supporting material**
  - **readable at 4 feet**
- **details**
  - **kept to a minimum**
  - **readable at 3 feet**

For readability

- **keep text compact**
- **single-space text**
- **space between units**
- **not right-adjusted**
- **use both upper and lower case**

9. Differentiate data, summaries and conclusions

Title makes a strong statement

XX My name My place

substance X induces Y-cells

Context
Y-cells require induction. X-substance may be the inducer because:
We know virtually nothing about X but have it on the shelf.

2 X is expressed in Y-cells only
lots of tiny type lots of tiny type
text visible at 4 feet away that emphasizes the main point of the figures

4 Anti-X alters Y transcription
lots of tiny type lots of tiny type
text visible at 4 feet away that emphasizes the main point of the figures

6 Summary
X :
- is expressed in Y cells
-induces Y expression
-induces Y transcription factor

Summary states results

1 We created X-deficient mice
lots of tiny type lots of tiny type lots of tiny type
mice were kind of nice to have around, particularly red ones. Cute.

3 Anti-X inhibits Y cell origin
lots of tiny type lots of tiny type lots of tiny type
text visible at 4 feet away that emphasizes the main point of the figures

5 Y-cells need Y-transcription
lots of tiny type lots of tiny type lots of tiny type
text visible at 4 feet away that emphasizes the main point of the figures

Conclusions
X induces Y cells by inducing the Y transcription factor
We Acknowledge NIH grant # XXX

Conclusions interpret results

Step beyond merely stating results

Commit yourself

- **summaries** only restate results

- **conclusions** interpret and tell significance
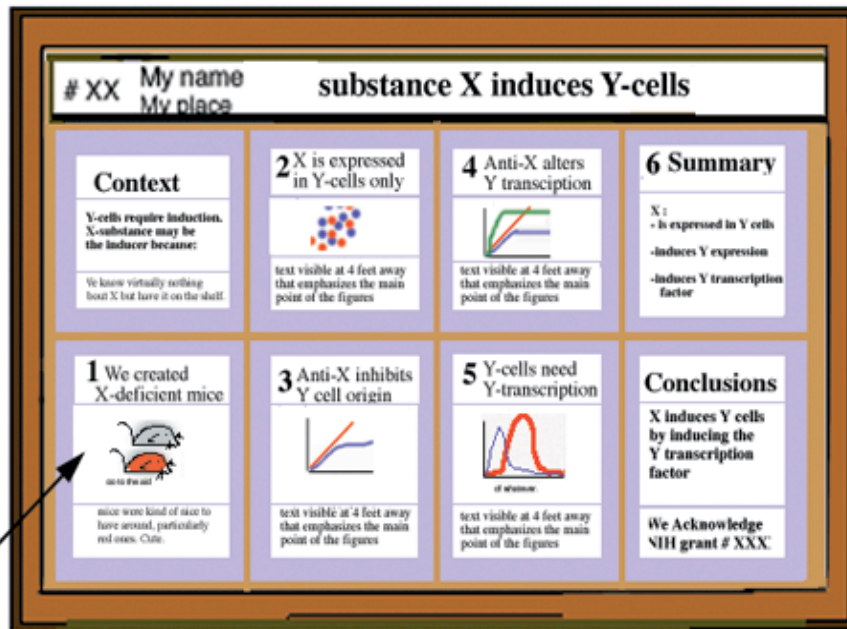 - do not just repeat the results
  - state your interpretations

Be bold and explicit

- make the strongest statements your data will support

- don't soft-peddle exciting findings

- make the title as explicit as you can

10. Keep it simple

Discard details

Edit ruthlessly

Simplify

- details detract

- simple messages are most memorable

- mock-up your poster
  - dump details
  - omit all you can
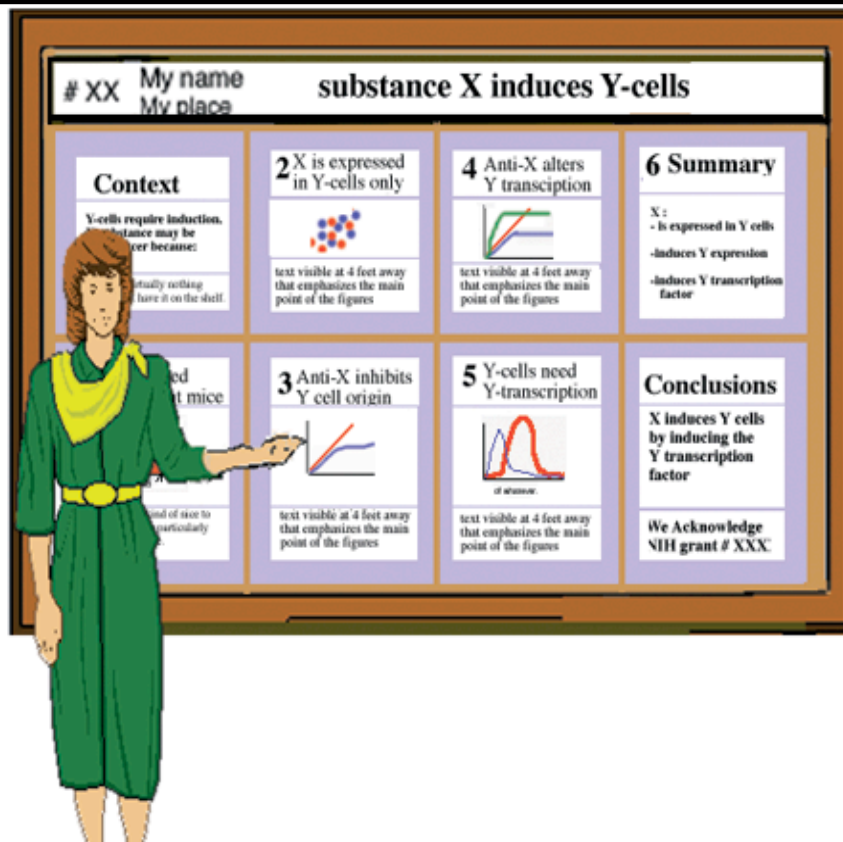 - edit all text
  - simplify verbiage

Supply details verbally

- if the methods are really innovative, prepare handouts

- carry your newest, hottest data in a folder to share with the elite

11. Use the graphics when you talk

Focus on the evidence: the graphics

Don't read it: use it as a visual aid

- face your audience
- tell them the context
    - the big problem
    - why it is important
    - your answer to it
- as you talk, point to and look at the graphics

Practice an effective and efficient talk

- a 5-min talk
- a 2-min synopsis
- effectively use the graphic evidence
- practice handling questions mid-stream

Creating effective posters

This tutorial is also available online:

http://biology.lsa.umich.edu/research/ labs/ktosney/file/PostersHome.html

Or access the link my home page: http://www-personal.umich.edu/ ~ktosney/