Poster Presentations

June 2017

Adapted from a presentation by

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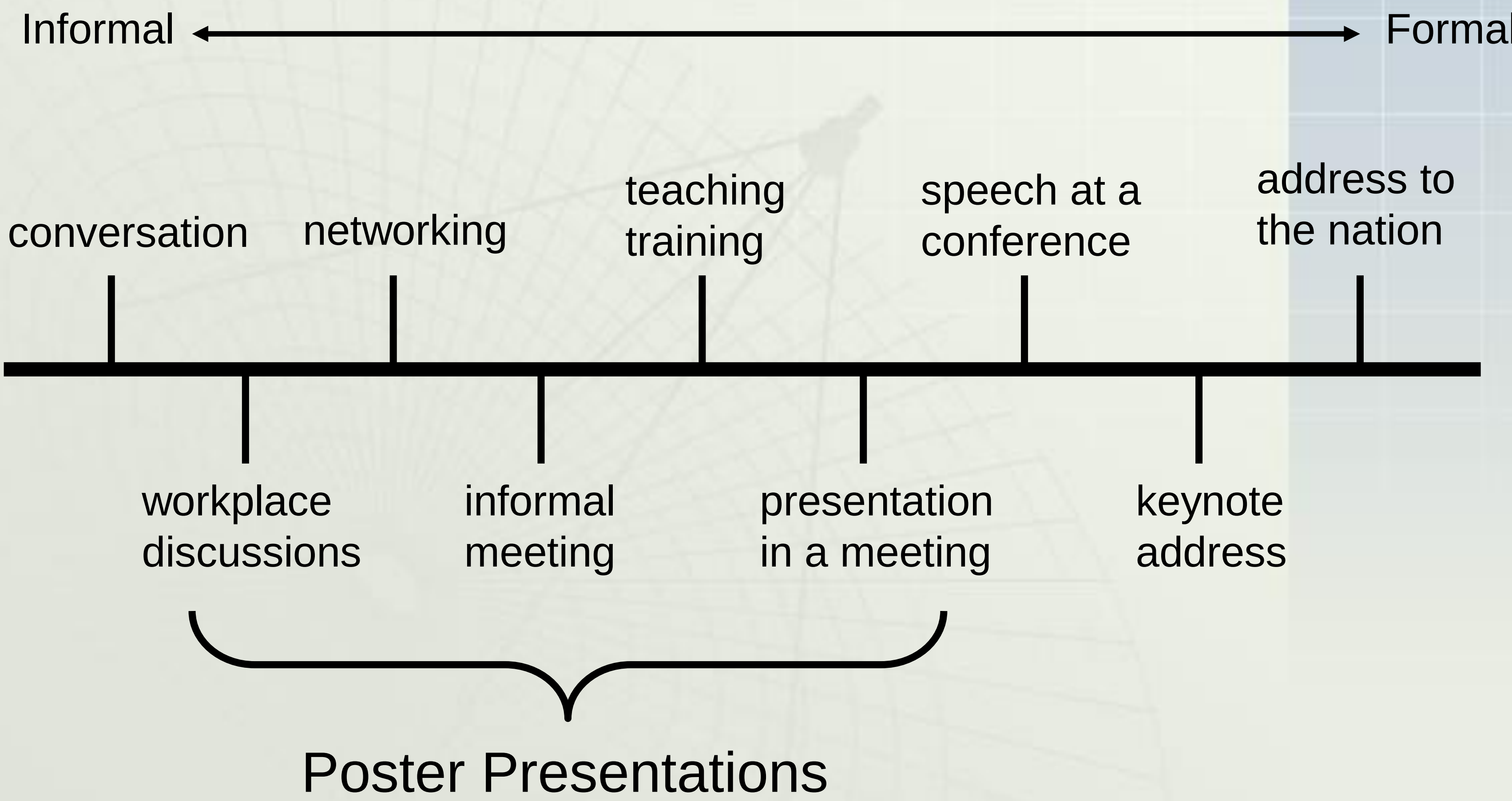
Poster Presentation Outline

- Different Types of Oral Presentations
- Poster Considerations:
  - Organization
  - Layout
  - Colour
  - Pixelation and Alignment
- Presence:
  - Body Language
  - Questions
  - Learning Styles
- Making a Poster
- ENSC 803 Virtual Posters
- Method for Blind Review

Oral Presentations



Posters

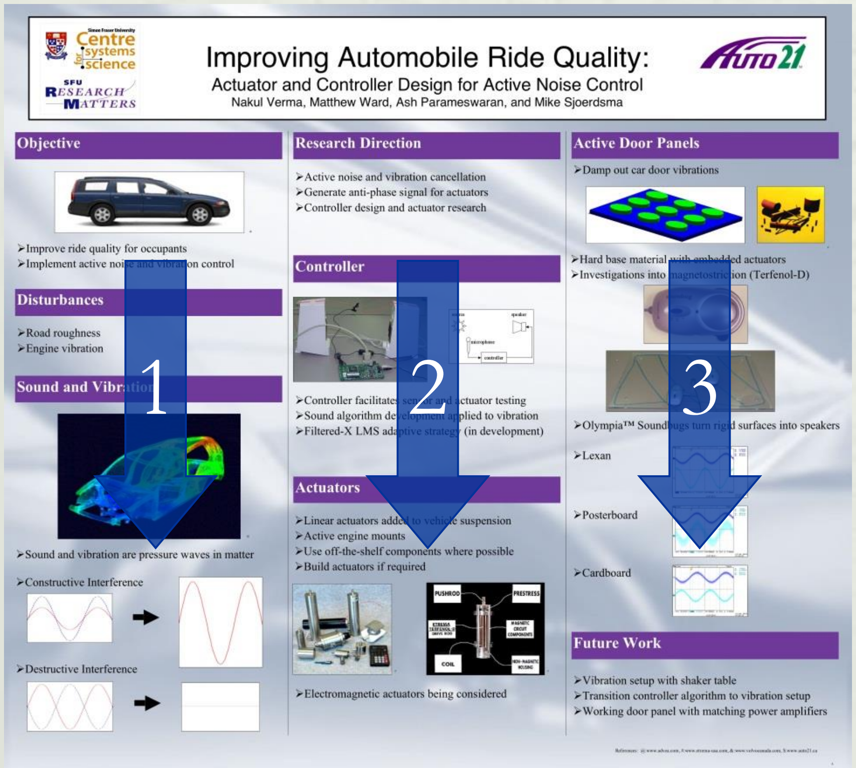
- Becoming more prestigious
- Most conferences have a poster session
- Excellent way to network
- Good if you dislike talking to crowds
- Some have cash awards :-)
- Have seen many bad ones (poor organization and layout are the biggest problems)

Typical Sections

- Title & ID: Name, E-mail, Affiliation, Conf., Where, Date
- Objective/Purpose/Problem Statement
- Background Information
- Research/Results
- Proposed Solution/Future Work
- Conclusion
- Abbreviated References

The Layout

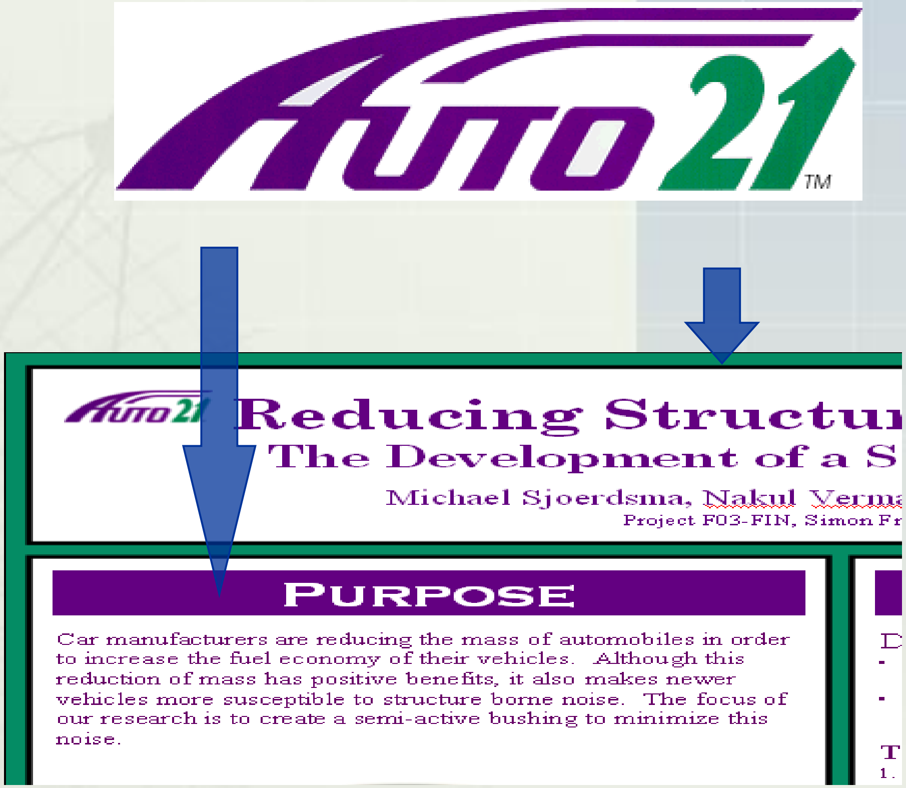
More Intuitive Layout



Less Intuitive Layout

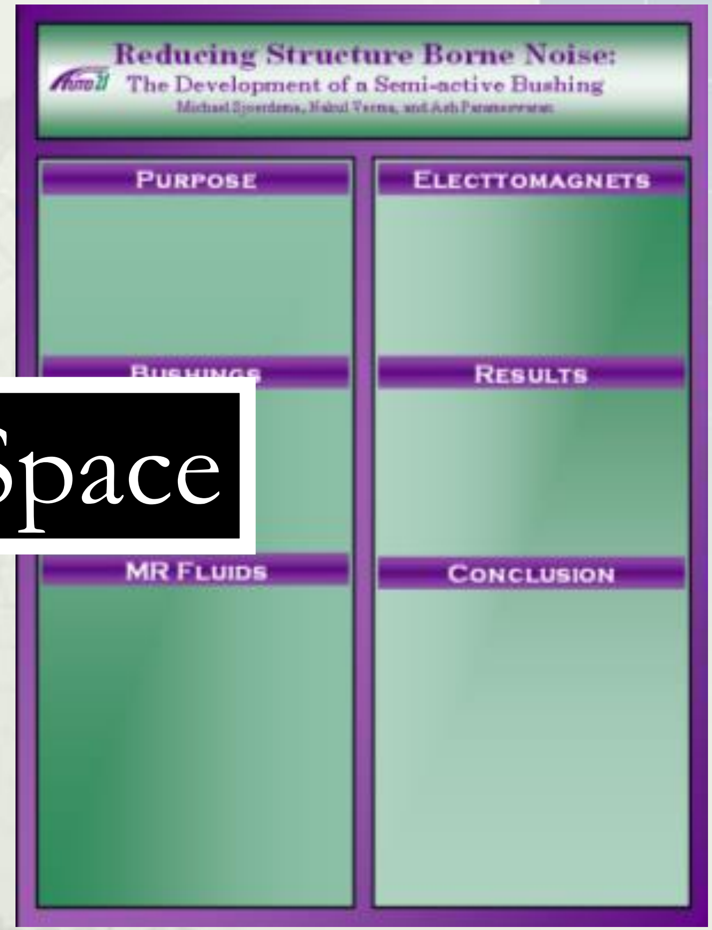
Colour


Reducing Structure Borne Noise:
The Development of a Semi-active Bushing
Purpose
Test Setup
Modified Bushing
Electromagnets
MR Fluids
Results/Remarks


AUTO21
TM
Reducing Structu
The Development of a S
Michael Sjoerdsma, Nakul Verma
Project F03-FIN, Simon Fr
PURPOSE
Car manufacturers are reducing the mass of automobiles in order to increase the fuel economy of their vehicles. Although this reduction of mass has positive benefits, it also makes newer vehicles more susceptible to structure borne noise. The focus of our research is to create a semi-active bushing to minimize this noise.

Colour

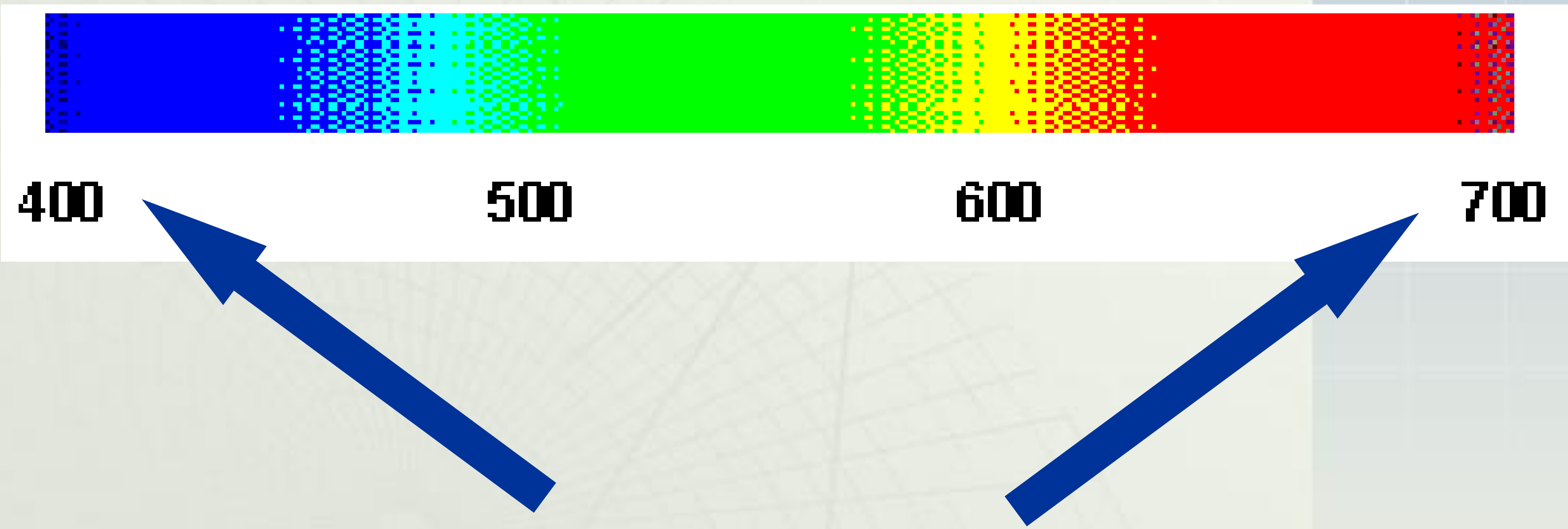
White Space



Colour

Contrast

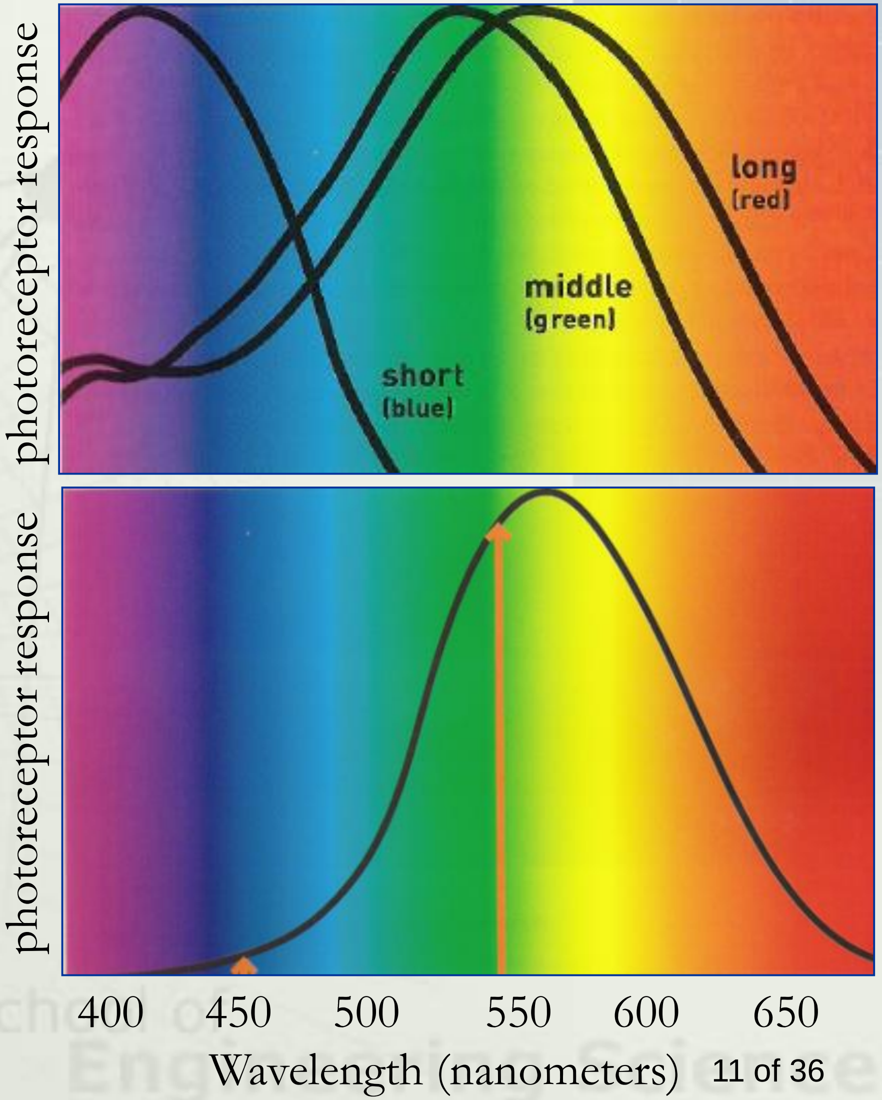
Colour



- Avoid using colours from the opposite ends of the spectrum

Colour

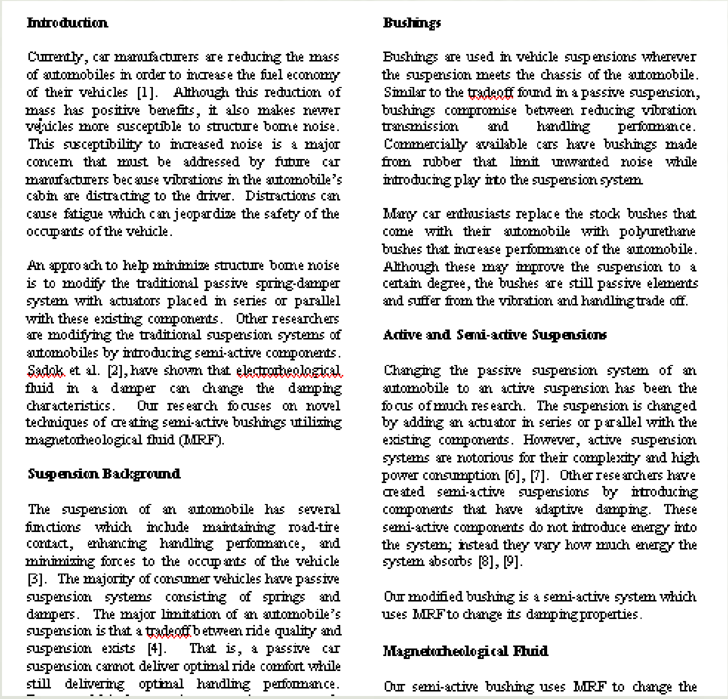
- Green 20 : Blue 1
- Pure blue should not be used for text, thin lines, or small objects
- Blue is good for backgrounds



Pixelation

Other Issues

- Point Form?



Introduction

Currently, car manufacturers are reducing the mass of automobiles in order to increase the fuel economy of their vehicles [1]. Although this reduction of mass has positive benefits, it also makes newer vehicles more susceptible to structure borne noise. This susceptibility to increased noise is a major concern that must be addressed by future car manufacturers because vibrations in the automobile's cabin are distracting to the driver. Distractions can cause fatigue which can jeopardize the safety of the occupants of the vehicle.

An approach to help minimize structure borne noise is to modify the traditional passive spring-damper system with actuators placed in series or parallel with these existing components. Other researchers are modifying the traditional suspension systems of automobiles by introducing semi-active components. Sadok et al. [2], have shown that electrorheological fluid in a damper can change the damping characteristics. Our research focuses on novel techniques of creating semi-active bushings utilizing magnetorheological fluid (MRF).

Suspension Background

The suspension of an automobile has several functions which include maintaining road-tire contact, enhancing handling performance, and minimizing forces to the occupants of the vehicle [3]. The majority of consumer vehicles have passive suspension systems consisting of springs and dampers. The major limitation of an automobile's suspension is that a tradeoff between ride quality and suspension exists [4]. That is, a passive car suspension cannot deliver optimal ride comfort while still delivering optimal handling performance.

Bushings

Bushings are used in vehicle suspensions wherever the suspension meets the chassis of the automobile. Similar to the tradeoff found in a passive suspension, bushings compromise between reducing vibration transmission and handling performance. Commercially available cars have bushings made from rubber that limit unwanted noise while introducing play into the suspension system.

Many car enthusiasts replace the stock bushes that come with their automobile with polyurethane bushes that increase performance of the automobile. Although these may improve the suspension to a certain degree, the bushes are still passive elements and suffer from the vibration and handling trade off.

Active and Semi-active Suspensions

Changing the passive suspension system of an automobile to an active suspension has been the focus of much research. The suspension is changed by adding an actuator in series or parallel with the existing components. However, active suspension systems are notorious for their complexity and high power consumption [6], [7]. Other researchers have created semi-active suspensions by introducing components that have adaptive damping. These semi-active components do not introduce energy into the system; instead they vary how much energy the system absorbs [8], [9].

Our modified bushing is a semi-active system which uses MRF to change its damping properties.

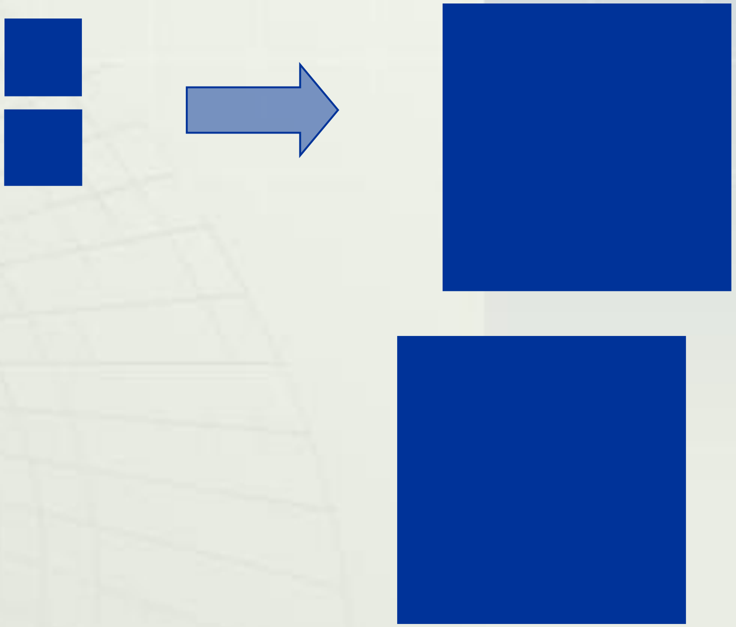
Magnetorheological Fluid

Our semi-active bushing uses MRF to change the

- Alignment

Screen View

Printed View



Other Issues

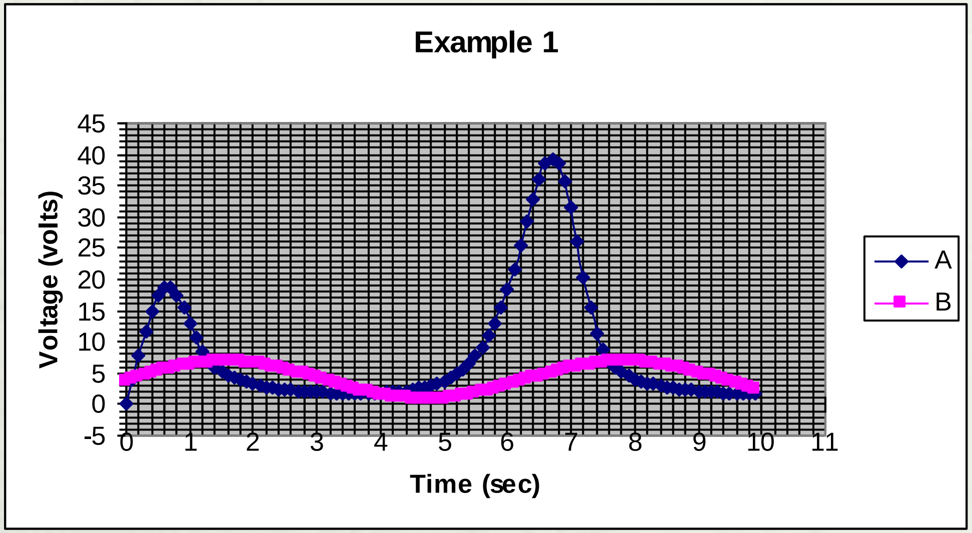
- Background Images
- Font Size

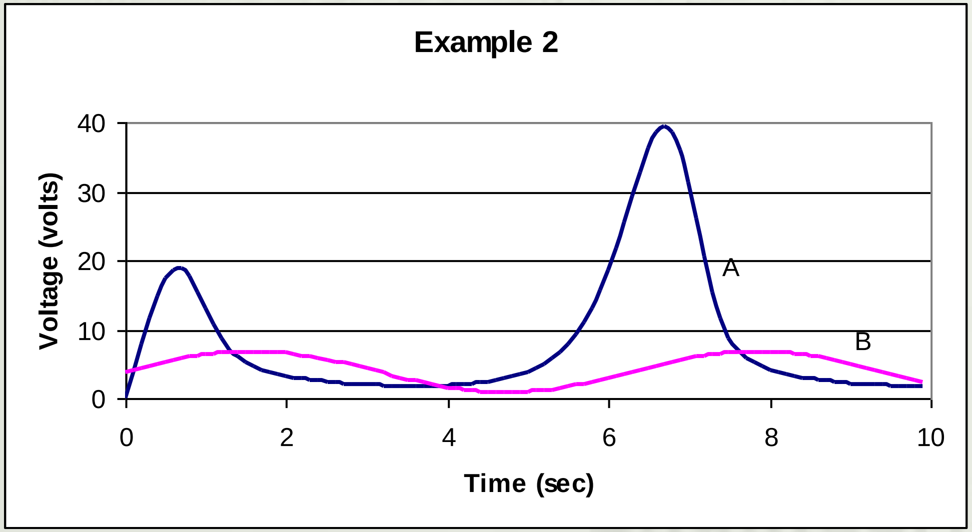
Graphs (Tufte)

Maximize:

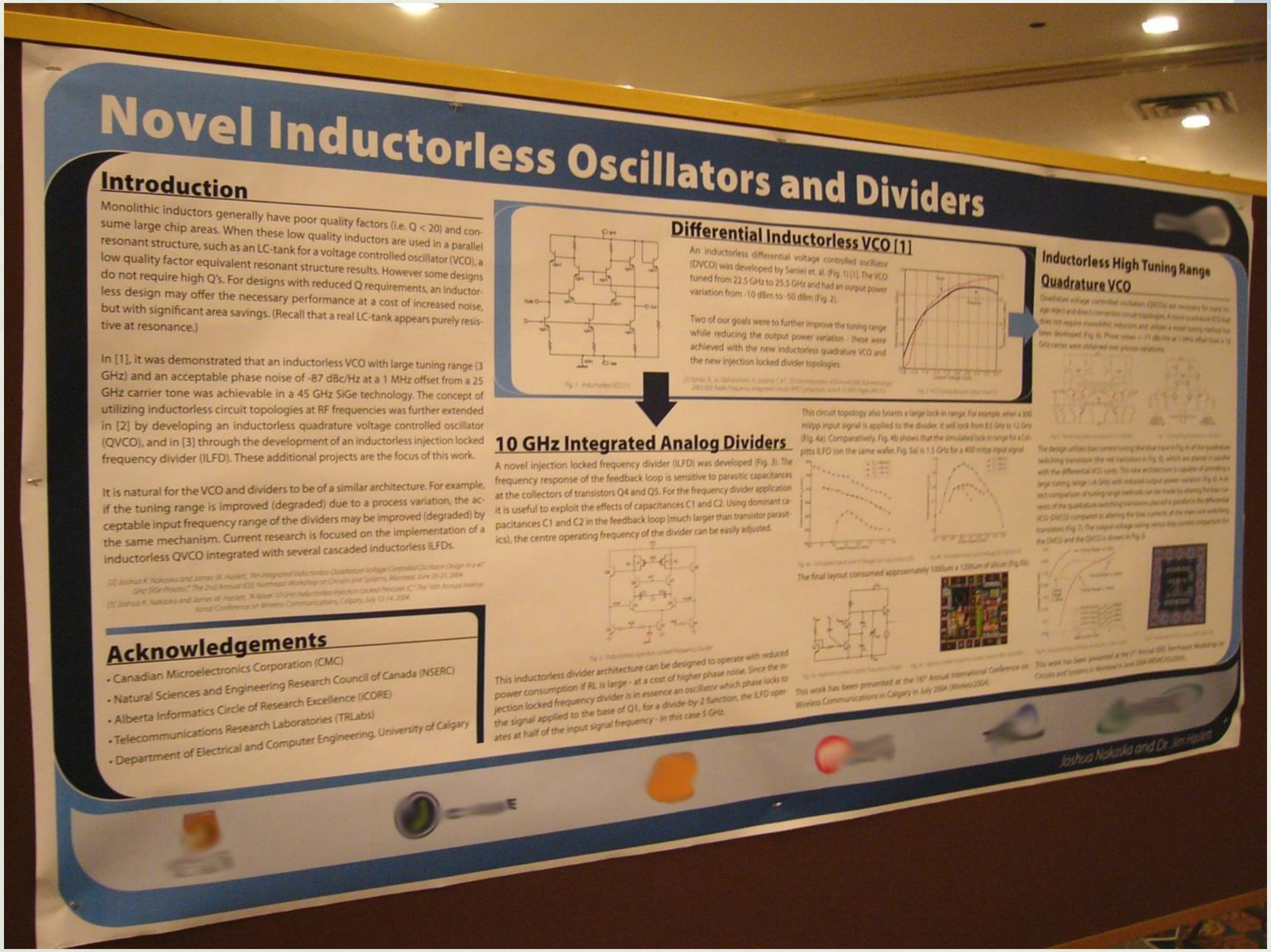
$$\text{Data-ink ratio} = \frac{\text{Data-ink}}{\text{Total ink used to print the graphic}}$$

Graphs

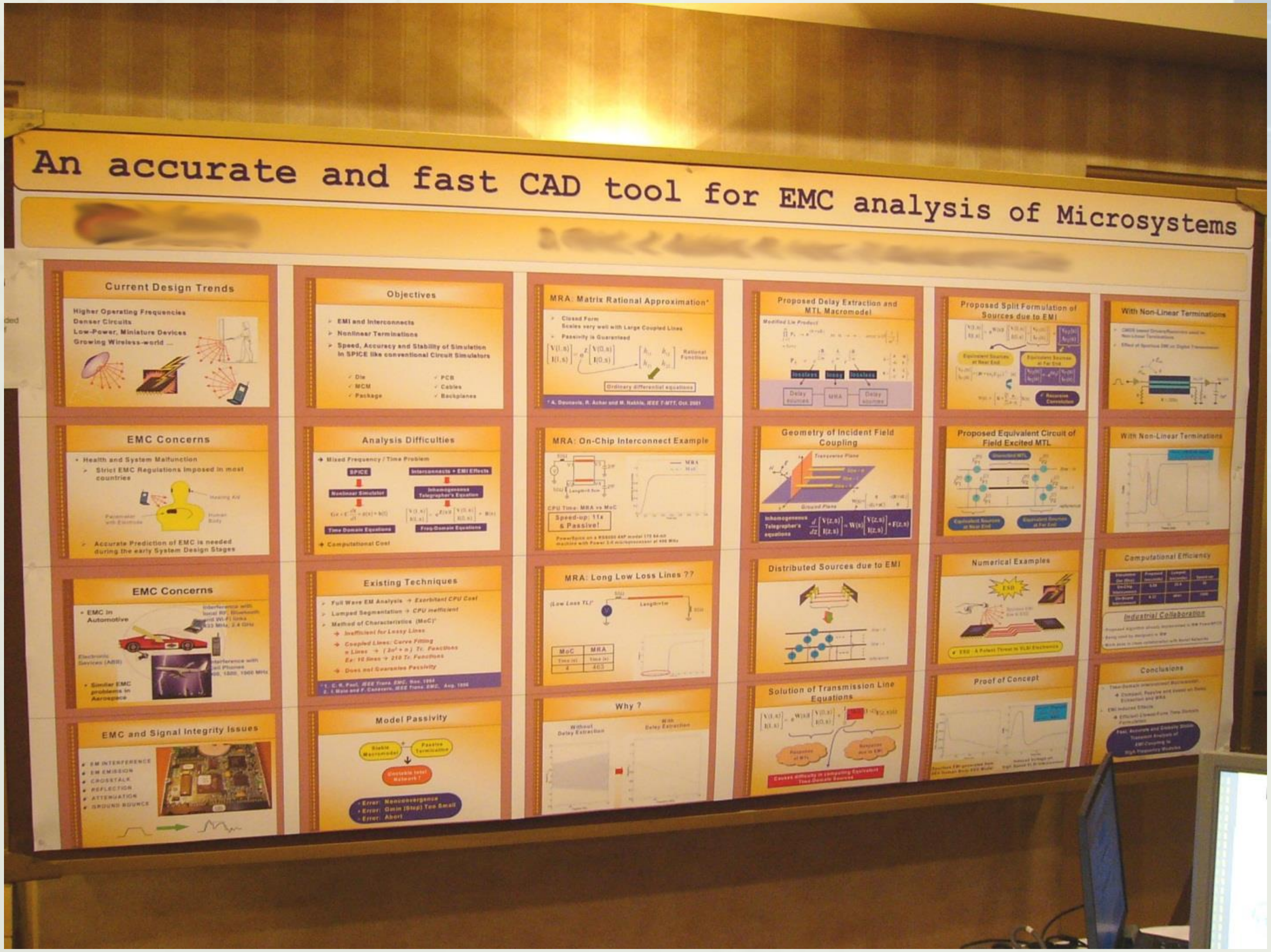

Example 1
Voltage (volts)
45
40
35
30
25
20
15
10
5
0
-5
0 1 2 3 4 5 6 7 8 9 10 11
Time (sec)
A
B


Example 2
Voltage (volts)
40
30
20
10
0
0 2 4 6 8 10
Time (sec)
A
B

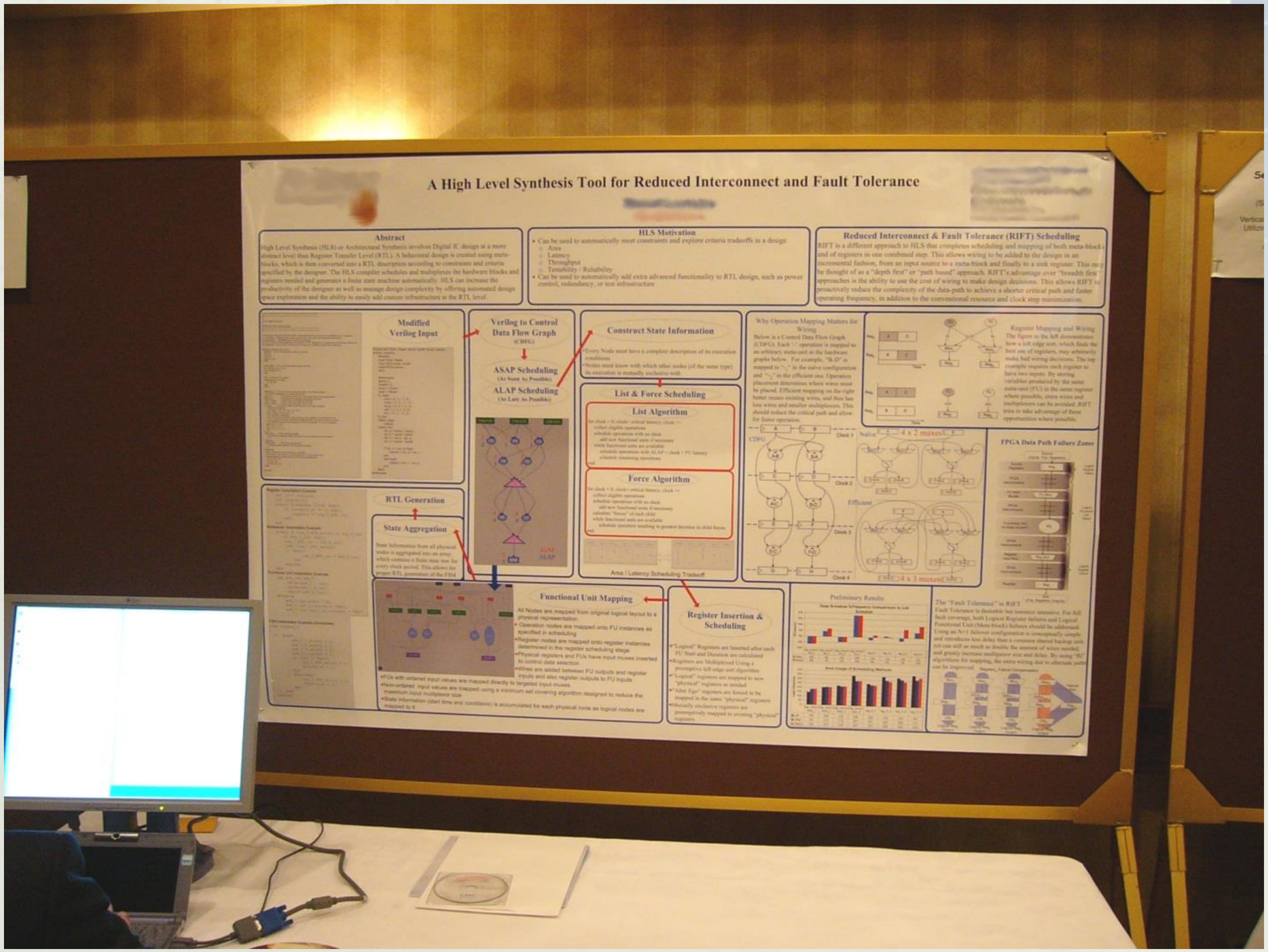
Example 1: The Poster Walk



Example 2: The PowerPoint Show



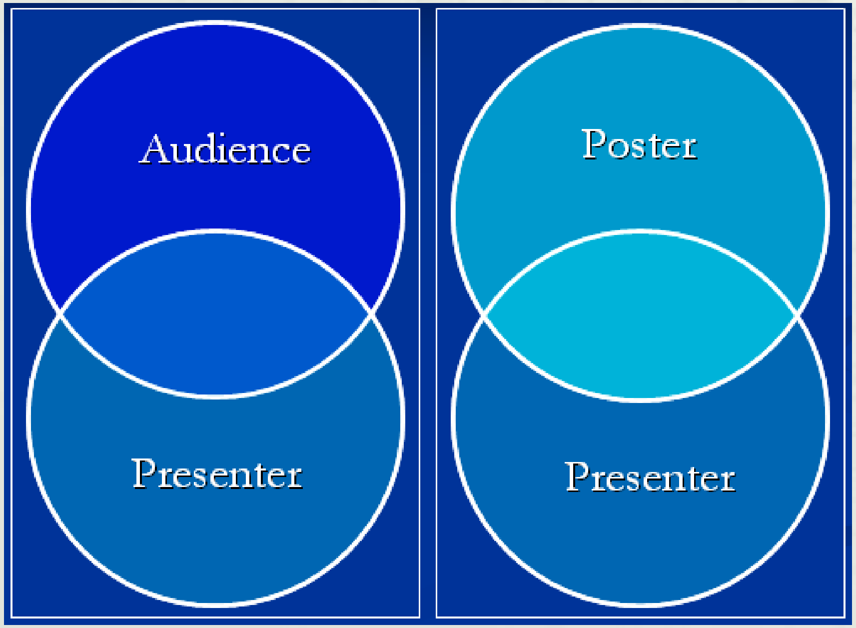
Example 3: The Maze



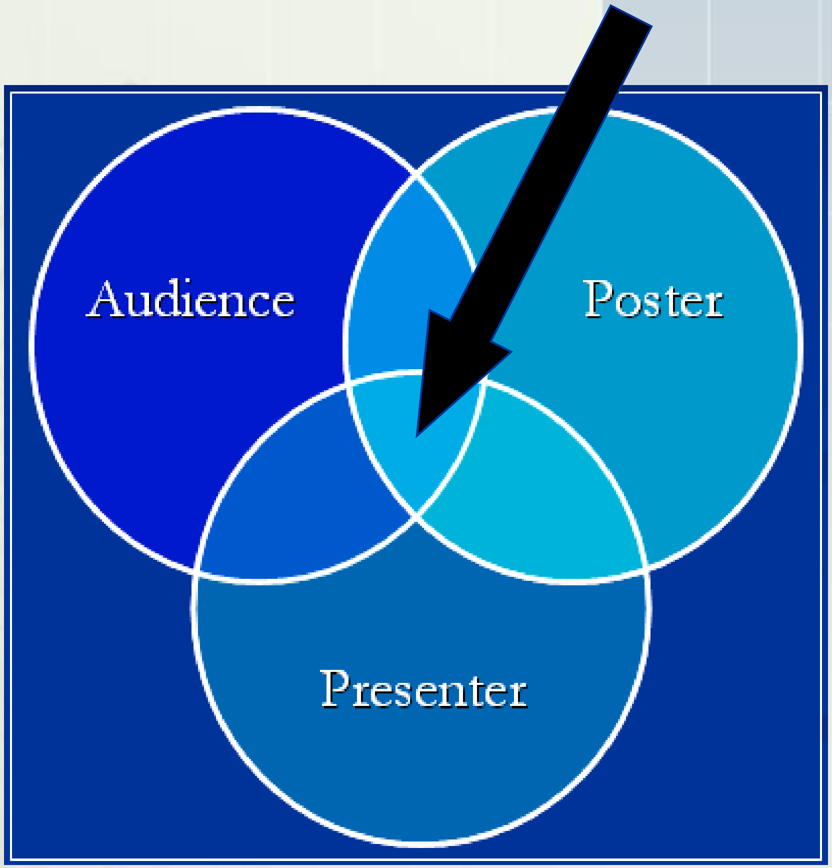
Information Deployment

Synergy

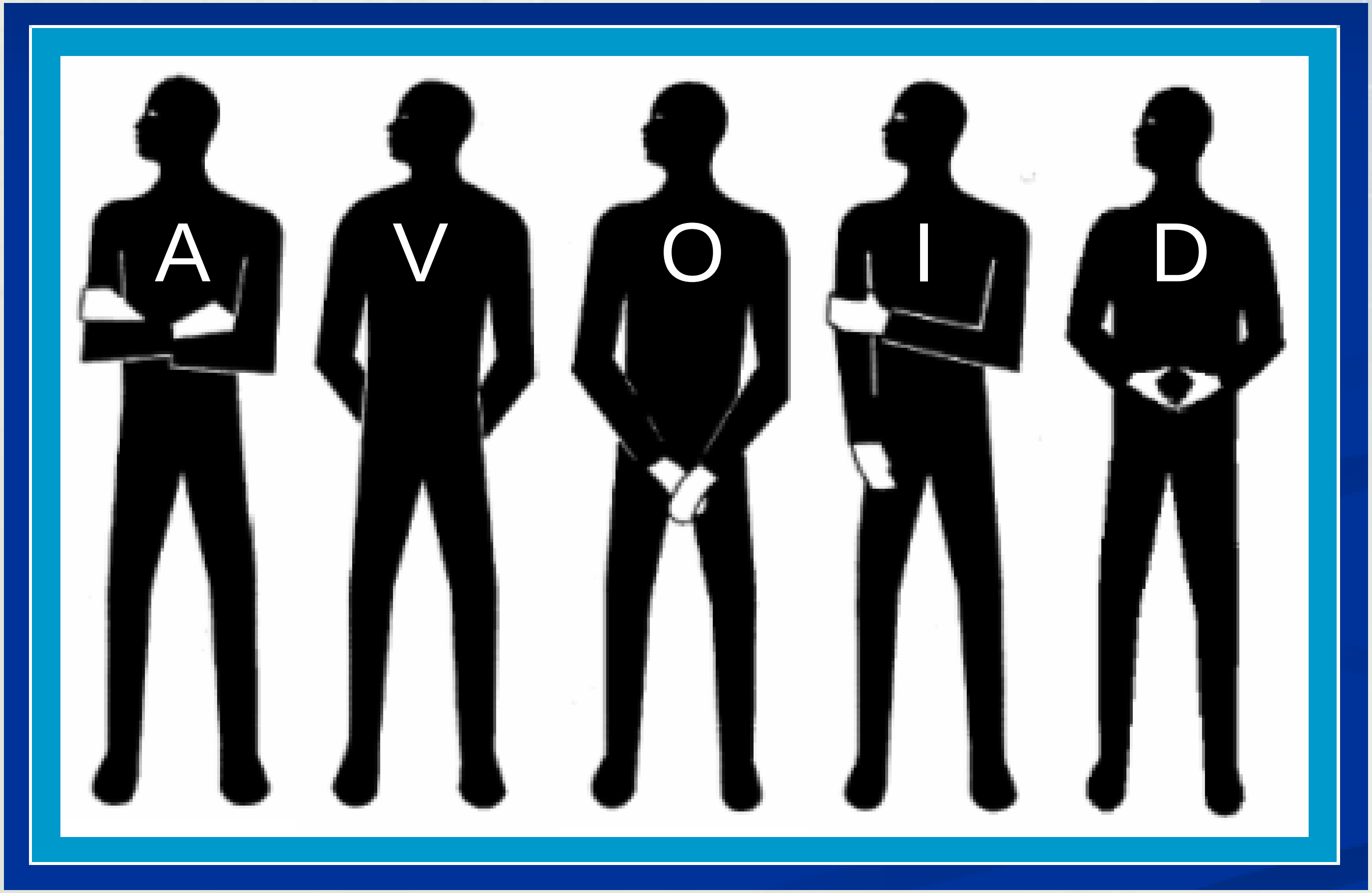
NO



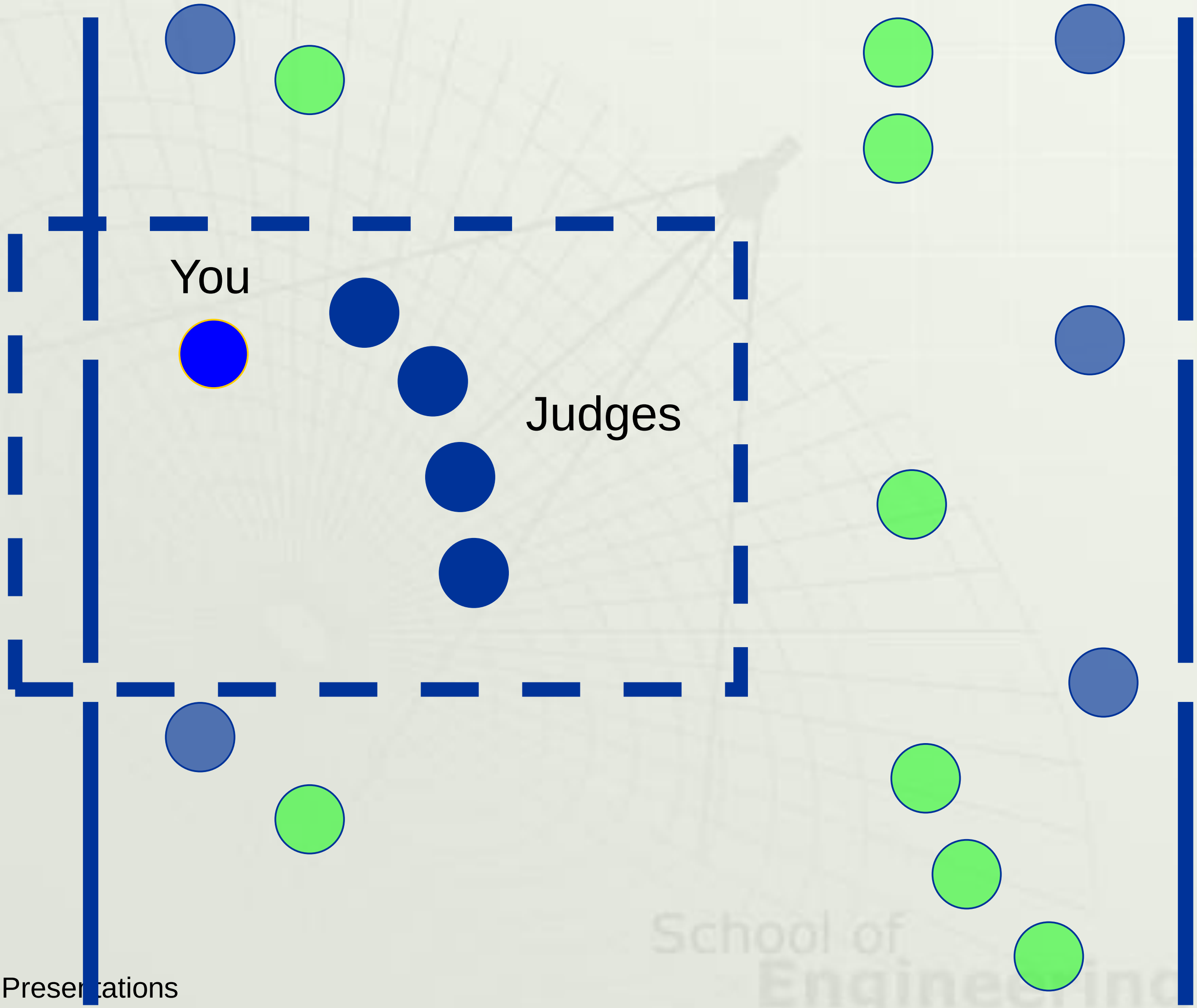
YES



Body Language

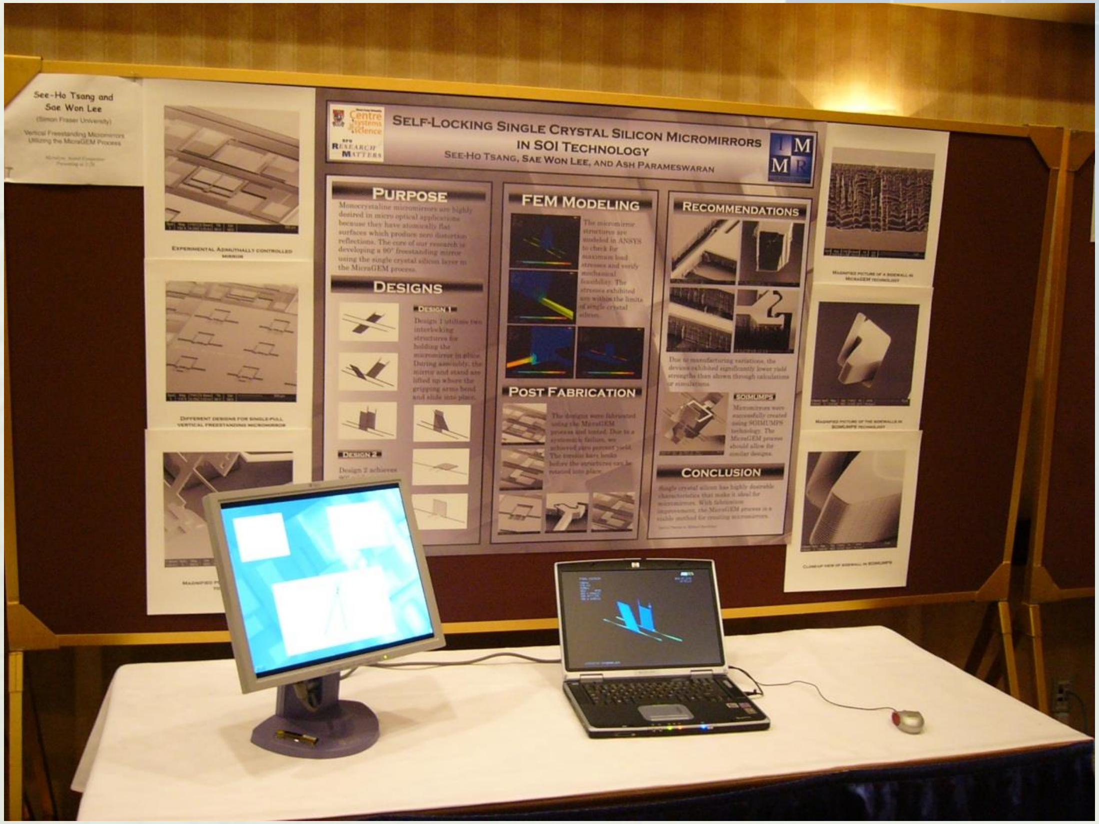


Eye Contact and Voice



Learning Styles

- Bring demos
- Have a computer
- Interactive elements

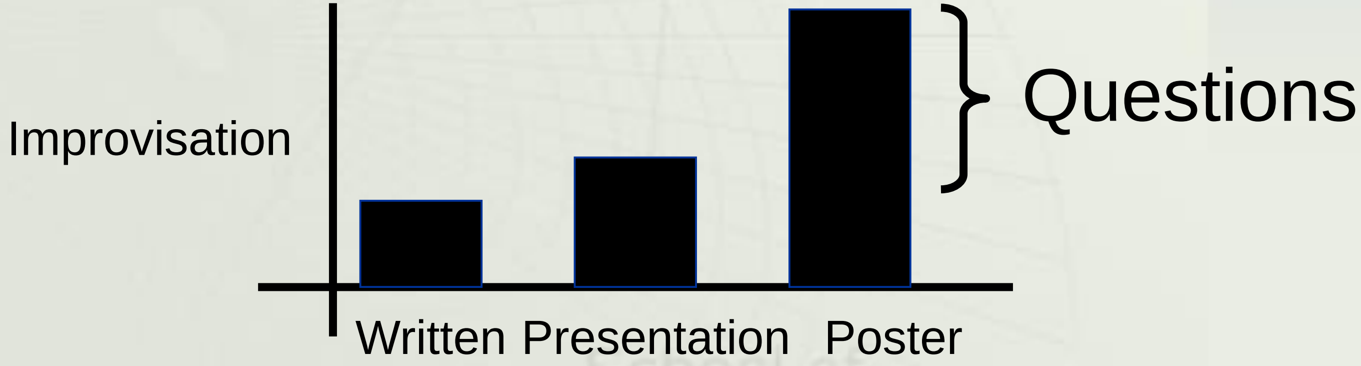


Gardner's Multiple Intelligences

- Gardner's theory of multiple intelligences, while virtually untested after 31 years, is worth considering in teaching.
- In poster presentations, you might try some of the differing approaches illustrated.

Handling Questions

- Encourage questions/suggestions
- Reiterate question if unsure
- Don't make stuff up
- Remember your audience (level of detail)



Making the Poster

- Start Now!
- Double (at least) the amount of time you think you'll need

Reprographics

- Ground floor of Maggie Benston Building
- Open 8:30 am to 4:30 pm, Mon to Fri
- General enquiries call 778-782-4160

Cost

- Poster printing \$7.50/ft^2
- Lamination \$3.00/ft^2
- Foam core and lamination \$3.00/ft^2
- Total cost = Printing and lamination = \$150.00 (check for latest prices)

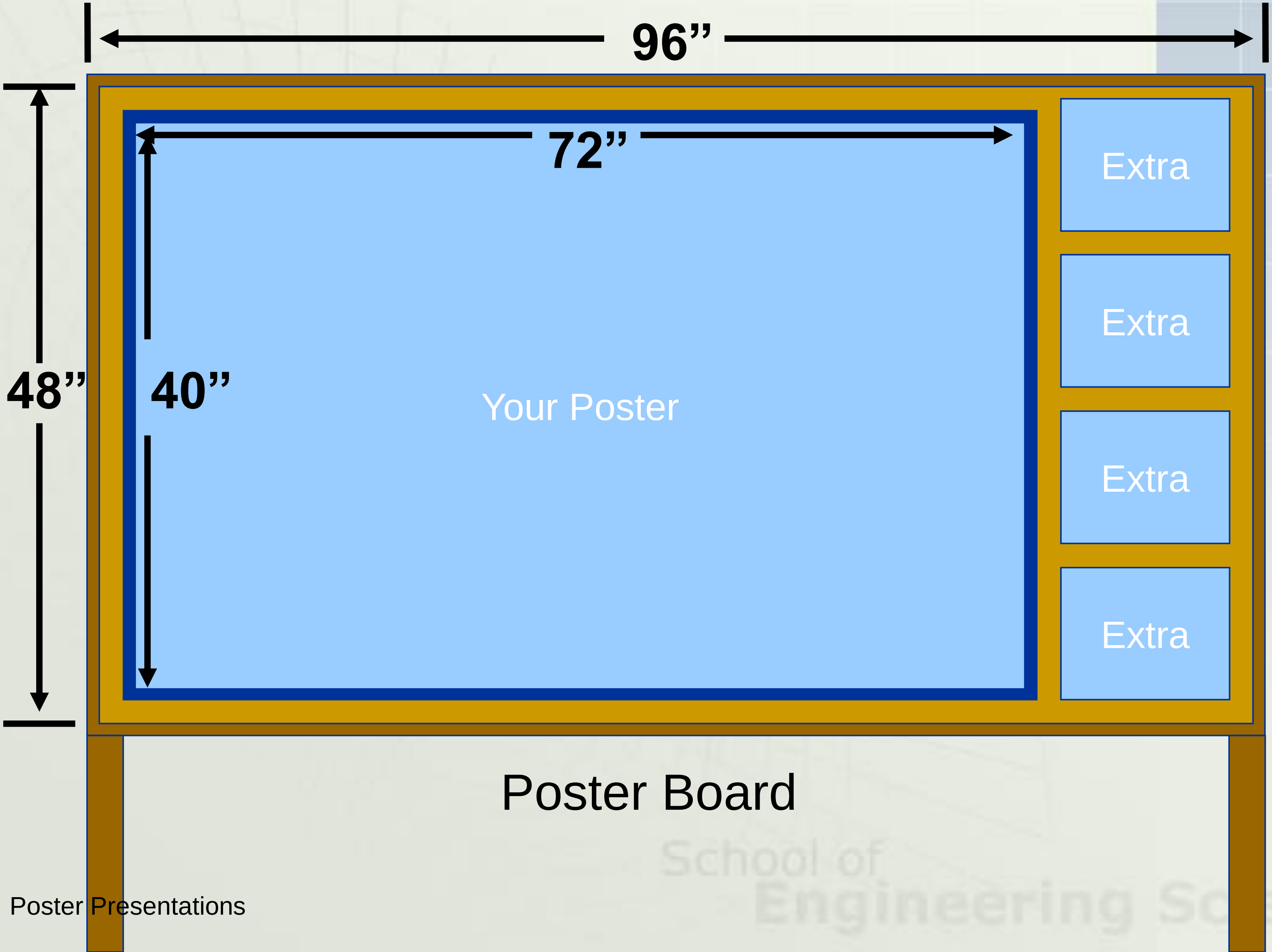
Payment

- Reprographics only takes work orders
- Supervisor fills out and pays from grant
- Or, Department pays and you reimburse

Poster Size

- Check conference for size allowed
- HP DesignJet 5000 printer/plotter
- Paper is 42” wide and any length
- Account for margins (i.e., 42”x48” poster would be 40”x46”)

Poster Size



File Types

- PDF file recommended (turn around time 48 hours)
- PowerPoint files (turn around time a little bit longer)
  - Technician changes to pdf, if longer than 15 min, then charges $45/hour

ENSC 803 Virtual Poster -- 1

1. One of the easiest ways to create your poster is to do it in Power-Point. But if you prefer to make it in an alternative manner (i.e., using a graphics program), you are welcome to do so (if you choose to follow this path, however, please submit it as a .pdf file).

2. The poster should be 4 feet wide by 3 feet high (122 cm by 92 cm). Set the page size in PowerPoint by going to the <File> tab and clicking <Page Setup> and then set the Width and Height to the appropriate dimensions. You can then import drawings and text (or simply enter them in PowerPoint). Ensure you set the font sizes appropriately.

3. Once you have completed your poster, you can convert the .pptx file to a .pdf file, but the settings for this can be a bit tricky. I prefer the PowerPoint format, so I recommend you submit it in that format.

ENSC 803 Virtual Poster -- 2

4. If the file is small enough (under 20 MB), you can e-mail it to me (but I expect some files will exceed that limit). Alternatively, you may post it on the web and e-mail me the URL. Please name the file using the following convention: “Your_Name.ppt”.

5. A colleague and I will assess the poster presentations by projecting them on a screen. The grading criteria are available on the website. Examples from a few years ago are also posted on the website (be cautious here – I chose these examples based upon the various approaches used rather than the quality of the poster).

6. Be creative! Your audience will appreciate it.

7. Due: Monday, August 7th.

Questions?

- Colour:
  - ✓ M. Livingstone, *Vision and Art: The Biology of Seeing.* New York: Harry N. Abrams, Inc., 2002.
  - ✓ G. M. Murch, “Physiological Principles for the Effective Use of Color,” *IEEE CG&A*, pp. 49-54, November 1984.

- Graphics:
  - ✓ E. R. Tufte, *The Visual Display of Quantitative Information.* Cheshire, Connecticut: Graphics Press, 1990.