ENSC 405W Poster Presentations

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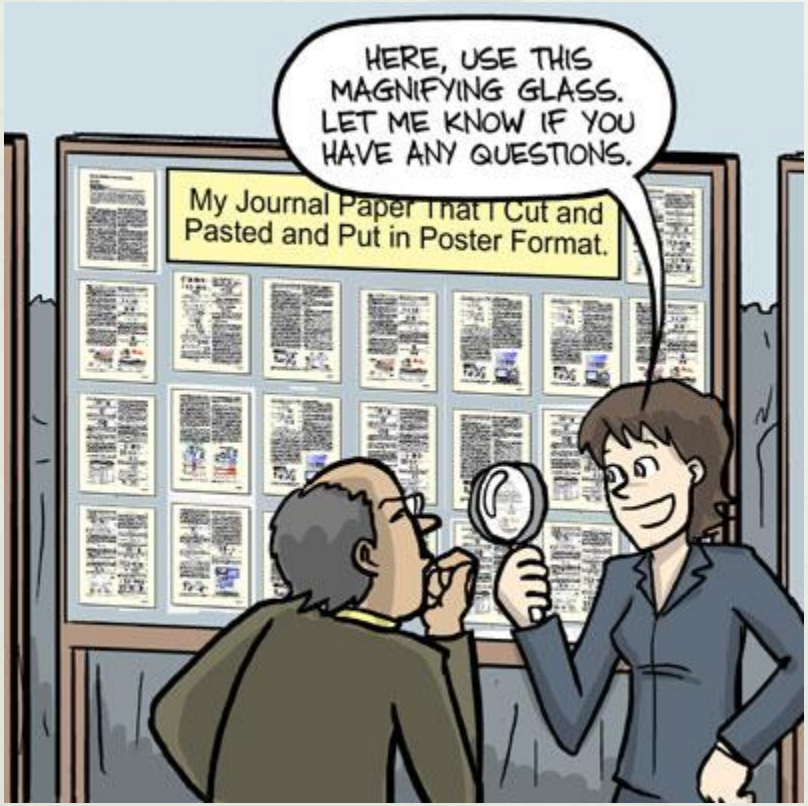
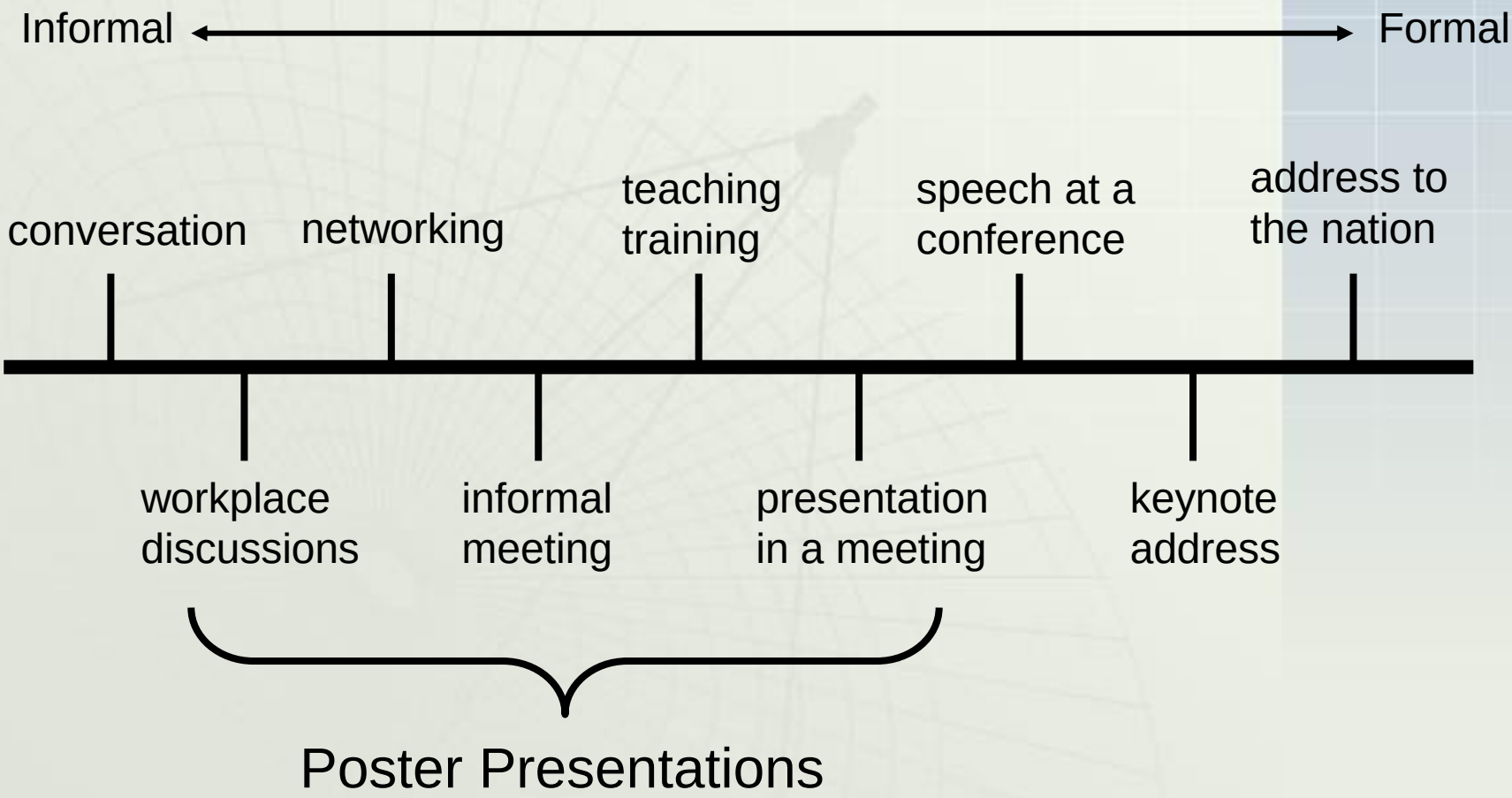
July 2018



Presentation Outline

- Types of Oral Presentations
- Logistics:
  - New Options
  - Time for Design & Execution
  - Set-up & Evaluation Details
- Poster Considerations:
  - Organization
  - Layout
  - Colour
  - Pixelation and Alignment
- Audience Considerations:
  - Questions
  - Learning Styles
- Questions & References

Oral Presentations



Logistics I

- Poster presentations will take place in ASB Atrium South on **Thurs, Aug 02 from 08:30-11:30**. Confidential presentations in ASB 9898.
- **Required:** All team members must attend.
- **New Technology:** Use a laptop connected to a large monitor on which to display your poster (**NOT** on the laptop monitor!).
- **Advantages:** Inexpensive, multimedia potential, the future direction.
- **Disadvantages:** Requires a large (23-24”+) monitor (I have a spare monitor of that size I can loan). Reserve a monitor from AV or bring a widescreen TV from home. Do this ASAP. Bigger is better here.
- **Alternatively:** Use a tri-fold board.
- **Warning:** We do not want a PowerPoint Presentation; we want a single slide on a large screen. You explain the rest of the material.
- **Proof-of-Concept device is required to demo functionality.** Not pretty, but demonstrates the concept works.

Logistics II

- Start early! You will need to **double your time estimates**.
- Bring your **Engineering Journals** to the poster presentations. I pick them up at the end of the day. They are returned in ENSC 440.
- E-mail me a **.pdf of the poster** by 11:59 PM that evening.

Logistics III

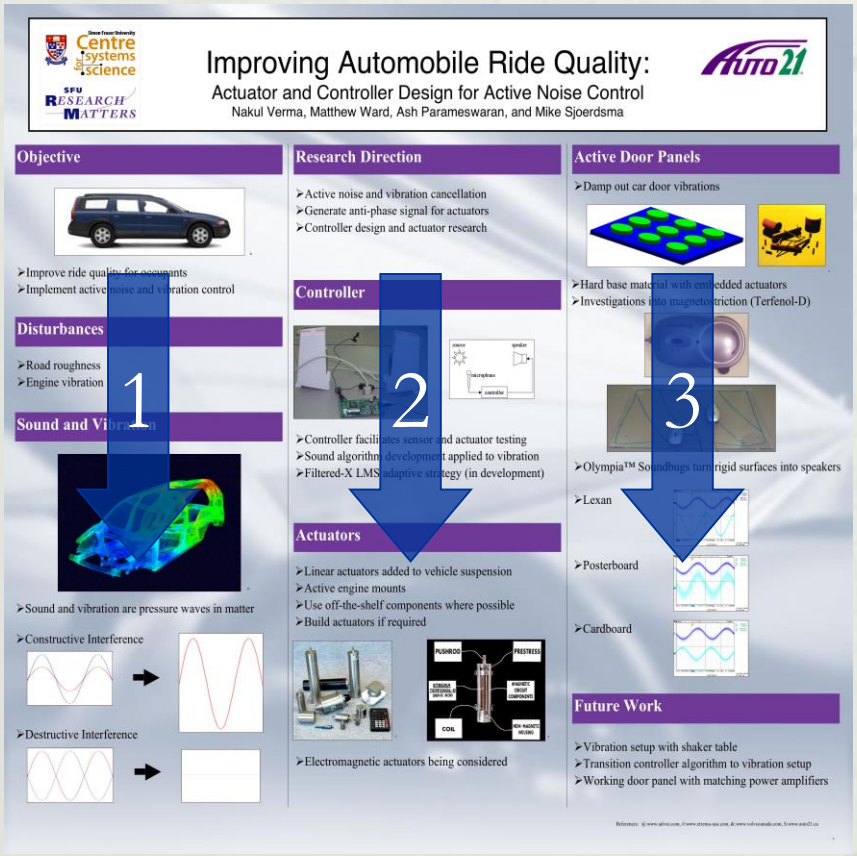
- You require an **interactive element** (model, demo, computer presentation, etc.).
- **Bring your own monitor, powerbar**, etc.
- Everyone should know and be able to defend the content (I suggest everyone practice being able to **explain the poster and demo in 1-2 minutes**).
- **Steve, Andrew, and the TA** will visit each poster for 15-20 minutes; other folks may wander in at random.
- **Poster grades** are the average of your rubric scores, so read over the rubric closely. Note that we discuss (and correct) the grades following the presentations.

Typical Poster Sections

- **Heading:**
  - **Descriptive Title:** *Airplane III: Drone-Based Drug Delivery*
  - **Names of Authors:** Ted Striker & Johnny Jacobs
  - **Name and Logo:** Drop-in Medical Inc. 
  - **Contact:** E-mail address, website (if you have one)
  - **Affiliation:** Simon Fraser University, Engineering Capstone Project
  - **Date:** 02 Aug 2018
- **Objective/Purpose/Problem Statement**
- **Background Information**
- **Research/Results**
- **Proposed Solution/Future Work**
- **Conclusion**
- **Abbreviated References**

The Layout

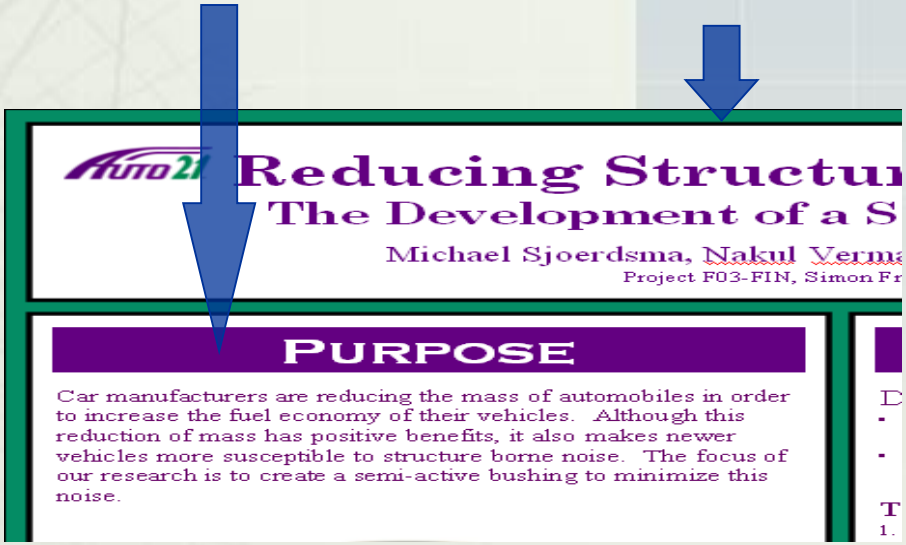
Intuitive Layout



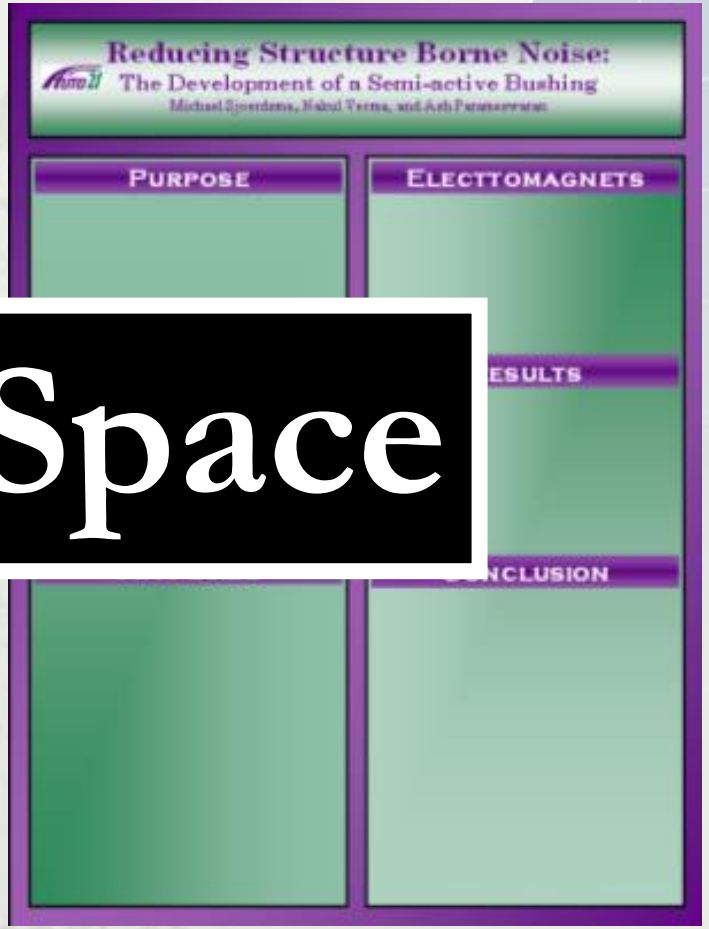
Less Intuitive Layout

Colour


Reducing Structure Borne Noise:
The Development of a Semi-active Bushing
PURPOSE
TEST SETUP
MODIFIED BUSHING
ELECTROMAGNETS
MR FLUIDS
RESULTS/REMARKS


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

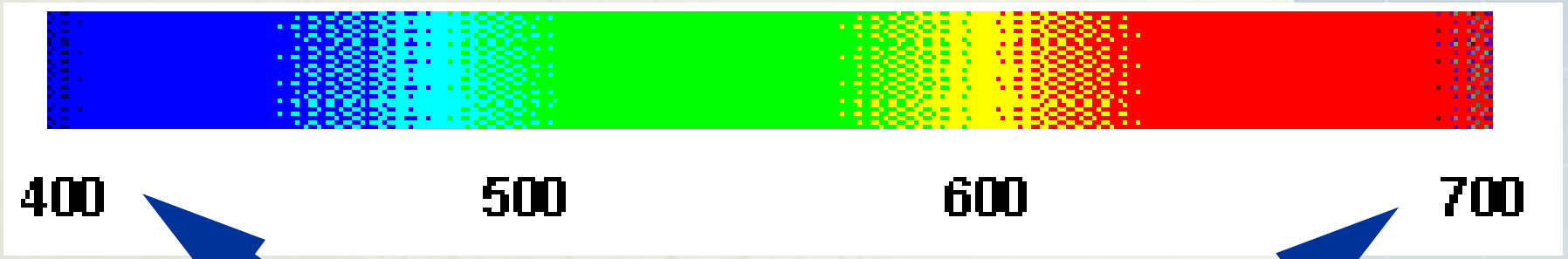


White Space

Colour

Contrast

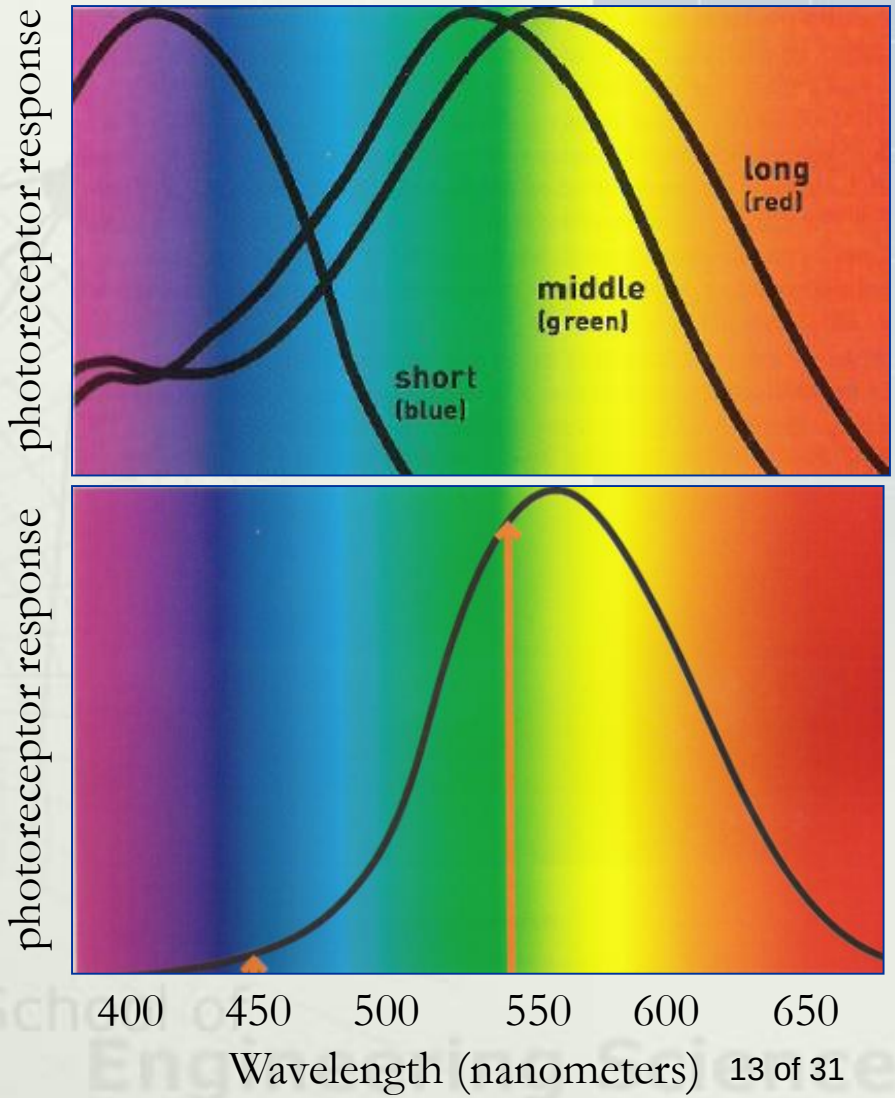
Colour



- Avoid using colours from the opposite ends of the spectrum

Colour

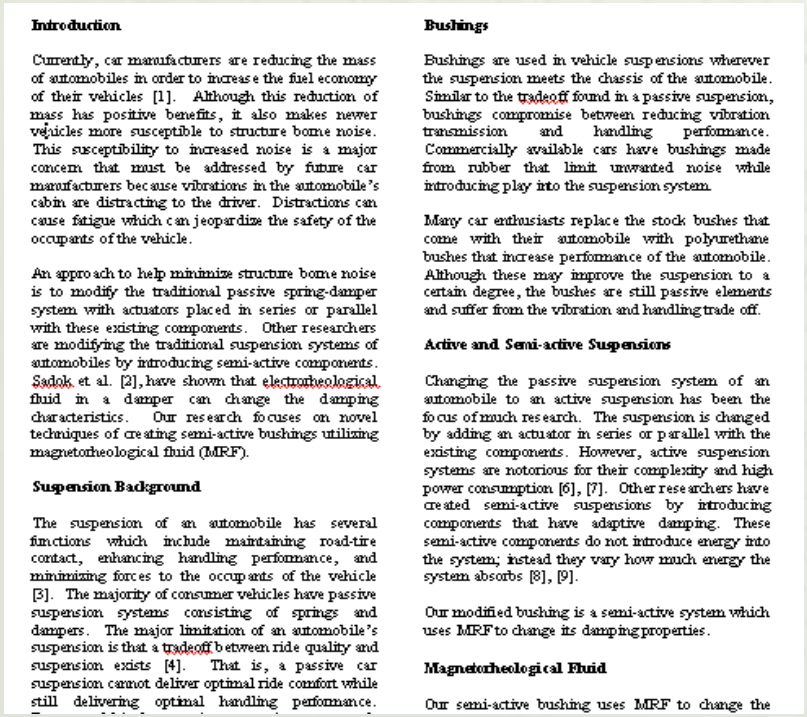
- Green 20 : Blue 1
- Pure blue should not be used for text, thin lines, or small objects
- Blue is good for backgrounds



Pixelation

Other Issues

- Too much text – use 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

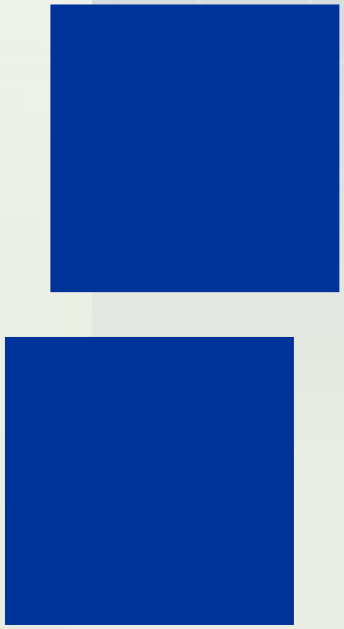
Our semi-active bushing uses MRF to change the

- Full justification – use hyphens !

- Faulty Alignment

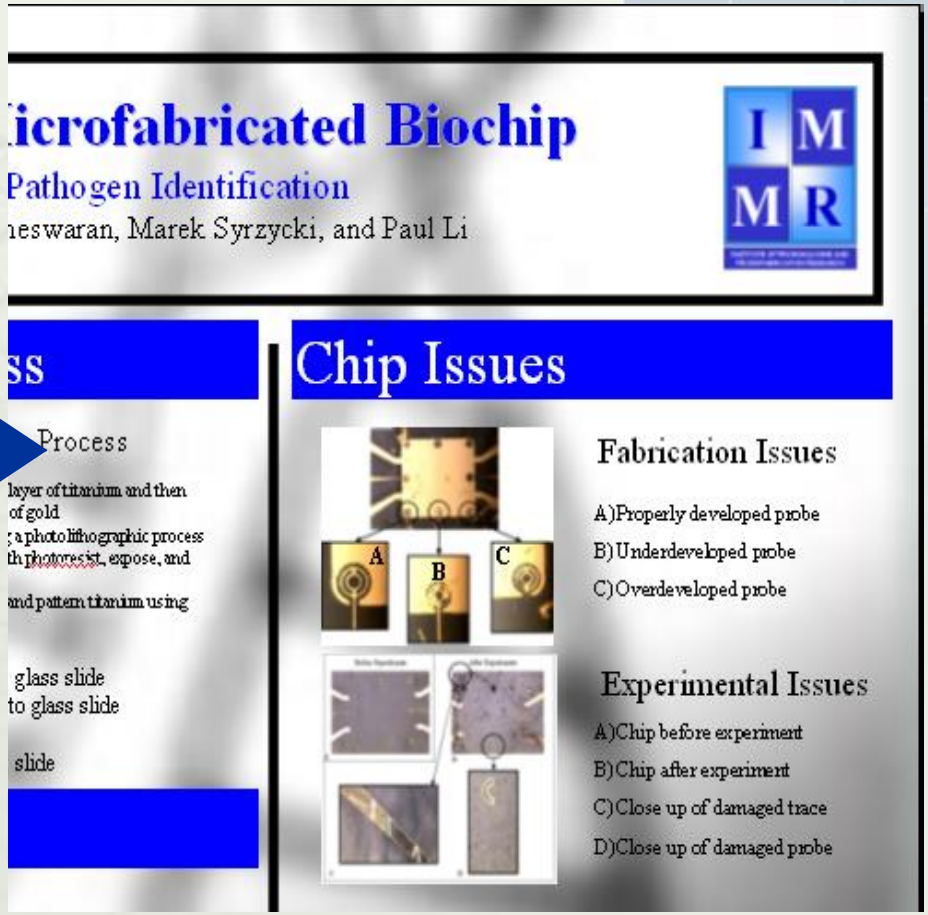
Screen View

Printed View



Other Issues

- Background Images
- Font Size

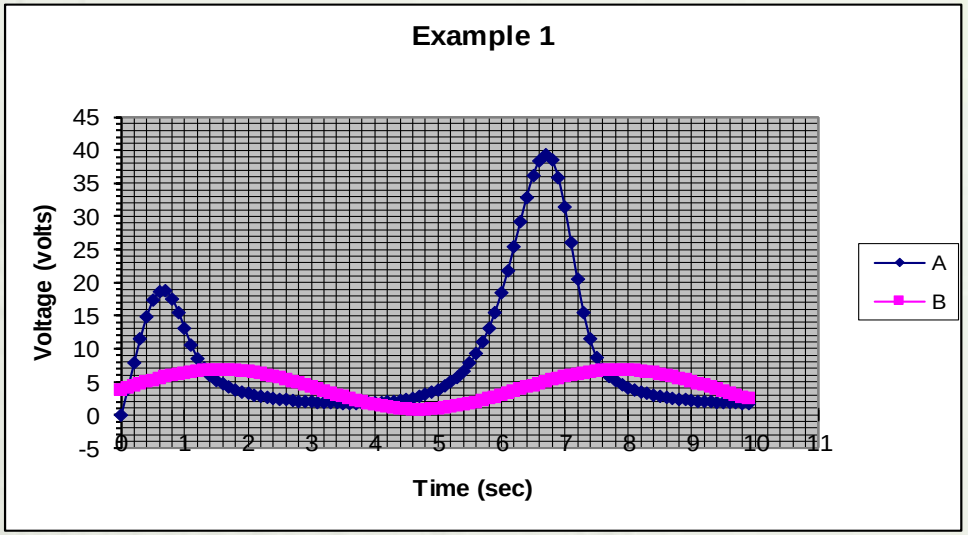


Maximize Data-Ink Ratio (Tufte)

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

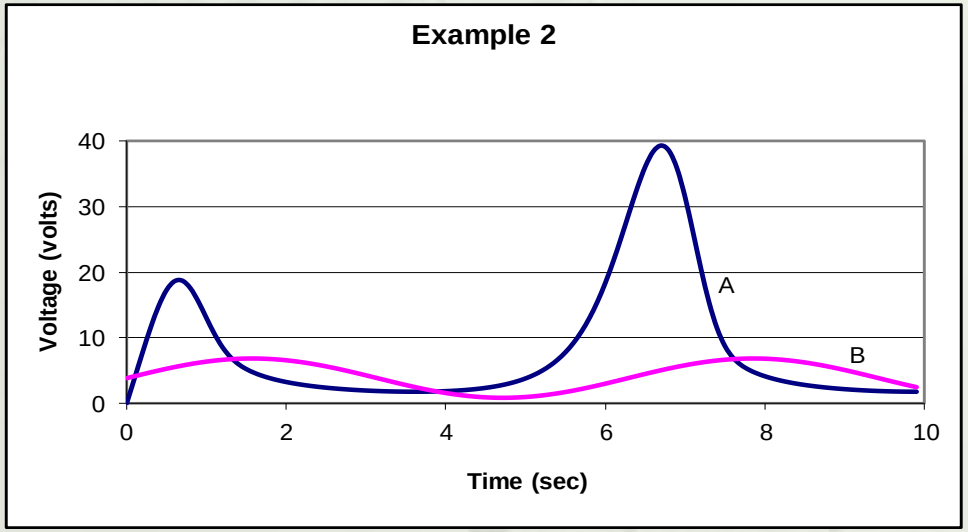
Example Data-Ink Ratio in Graphs

- **More** *Total Ink* than *Data Ink*



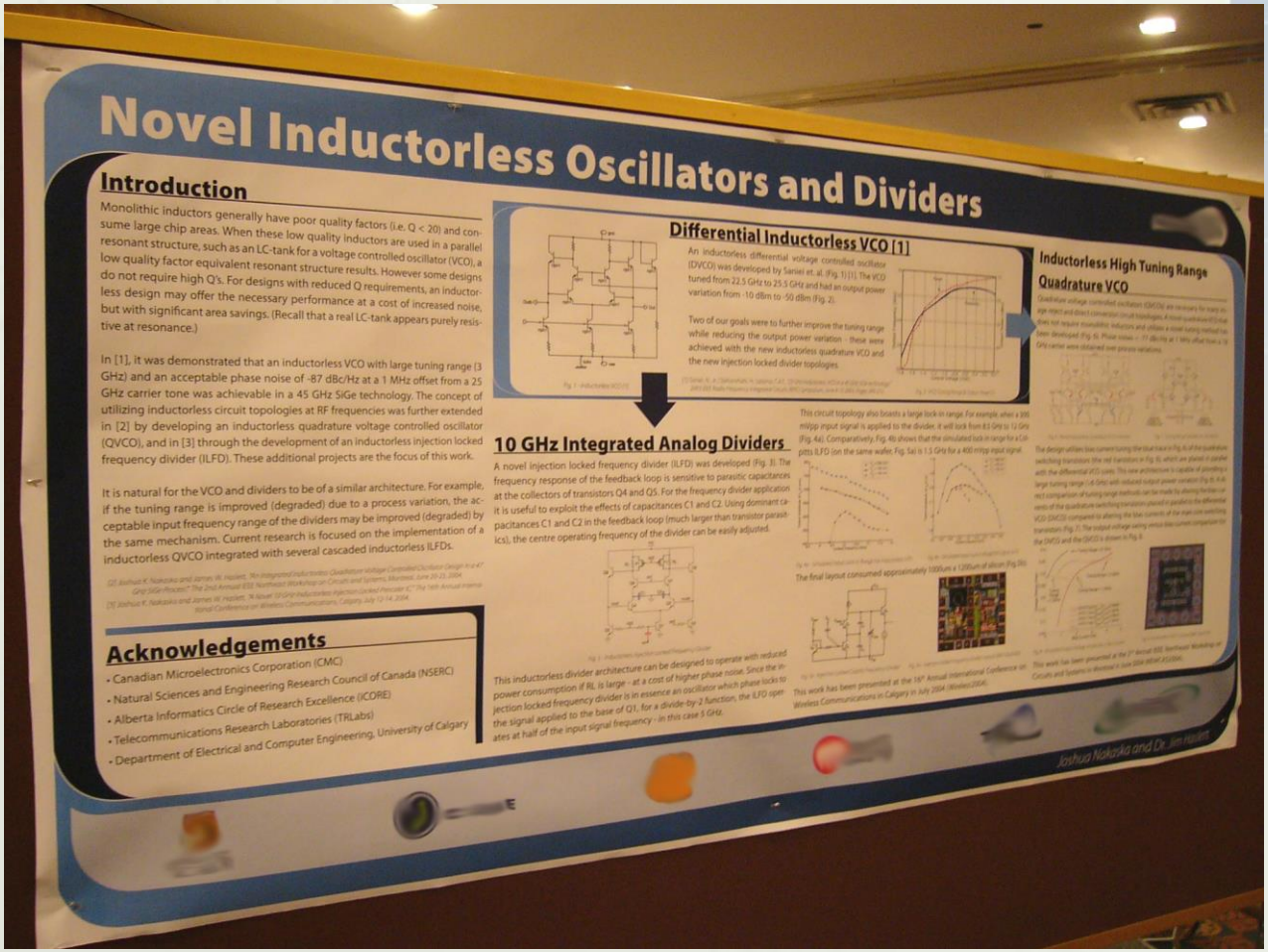
X

- **Less** *Total Ink* than Data *Ink*

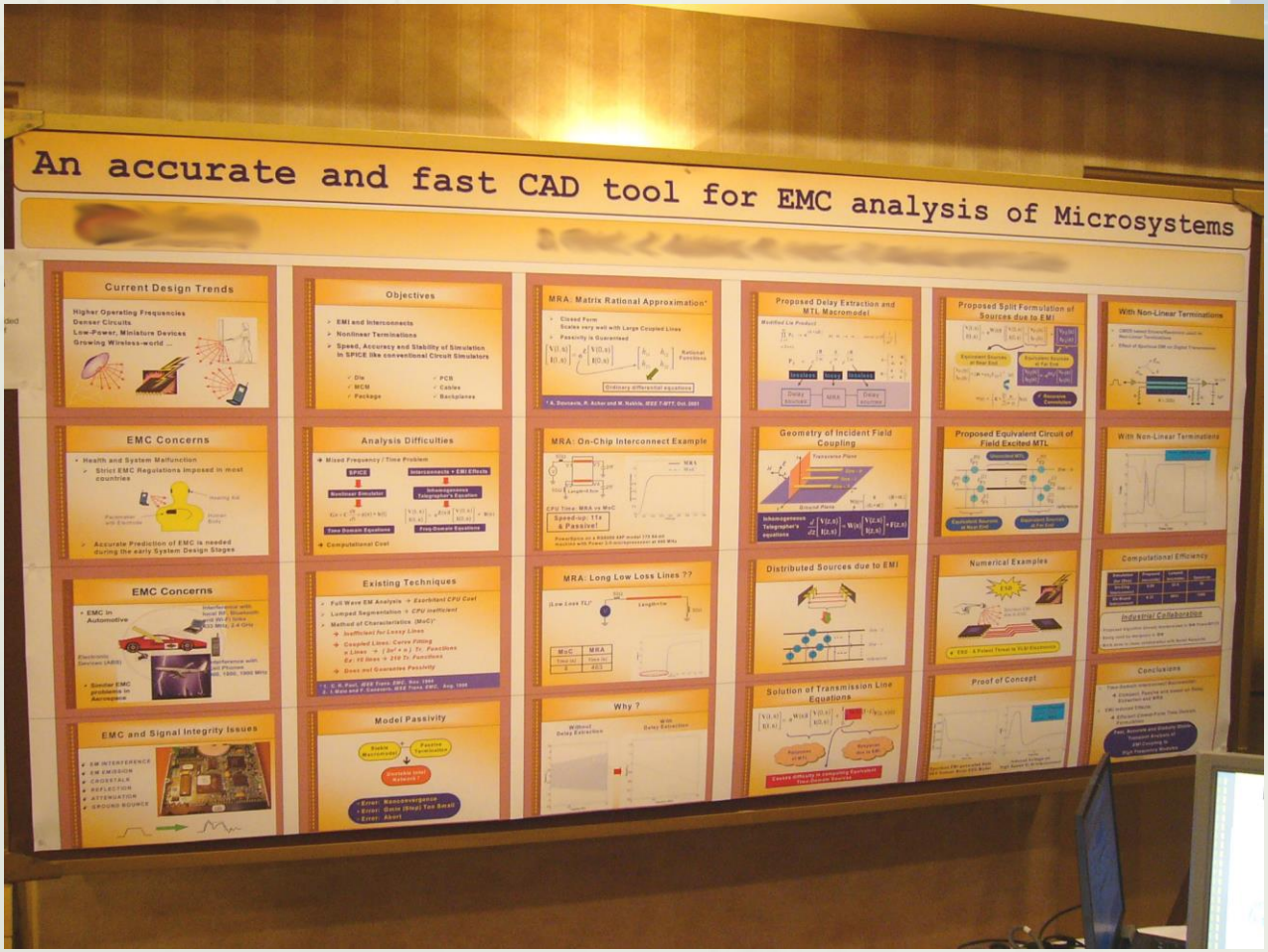


✓

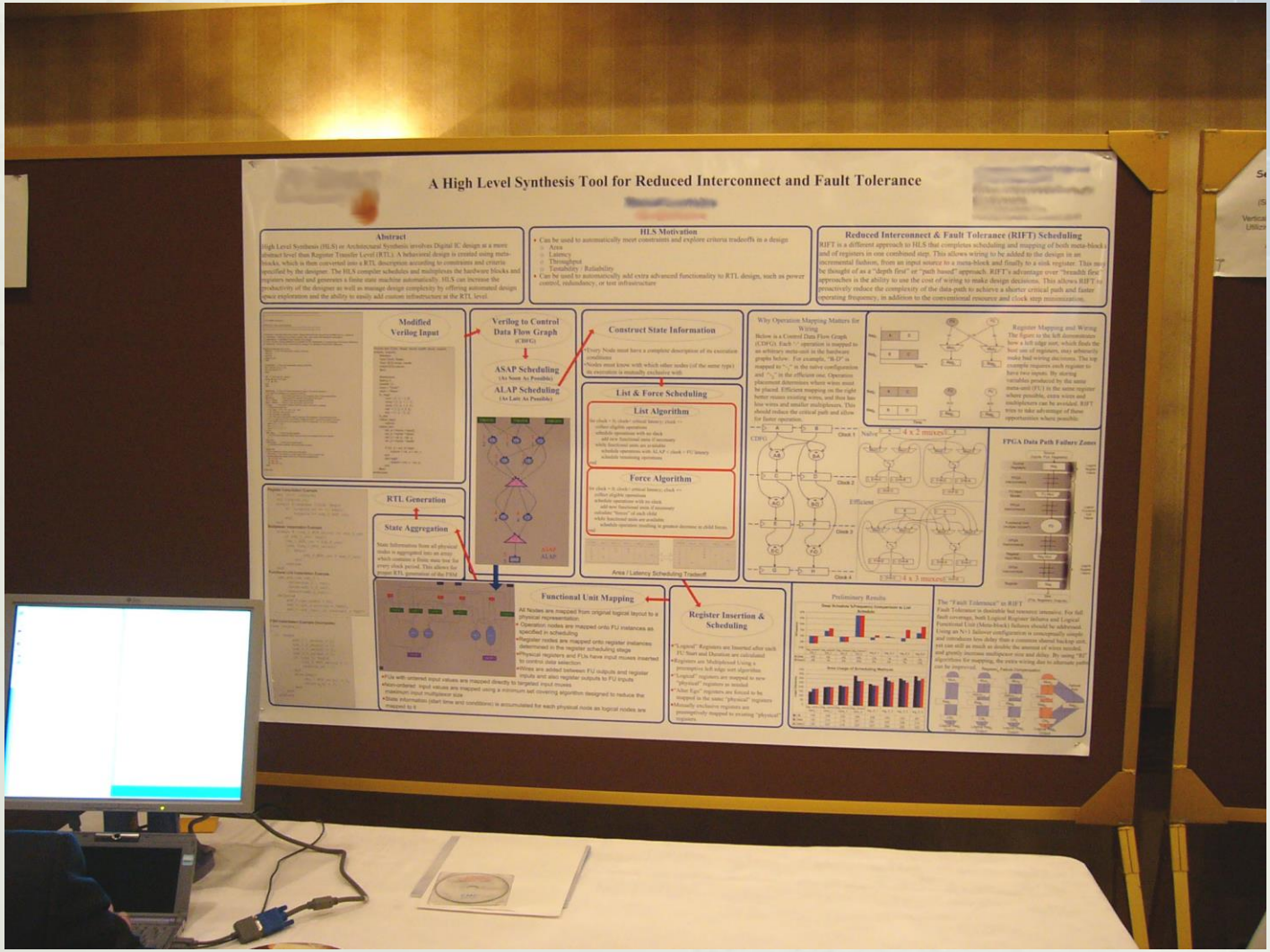
Formal Poster 1: The Poster Walk



Formal Poster 2: The PP Poster

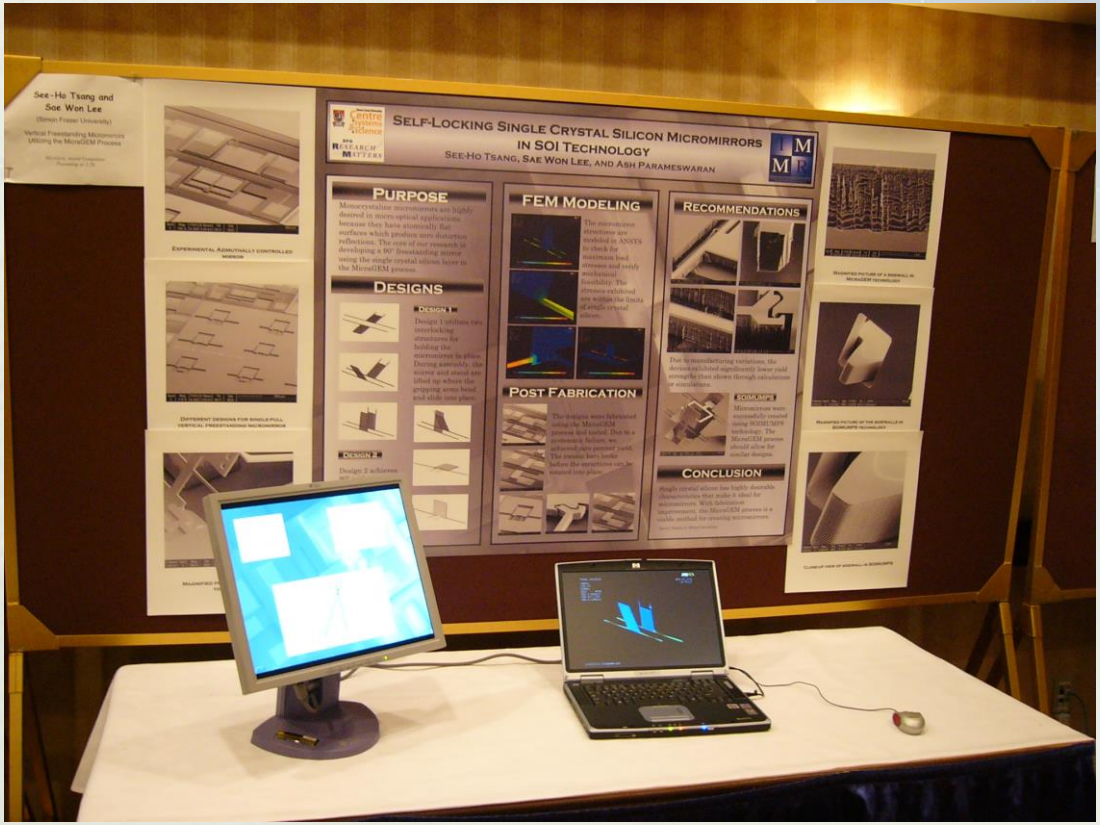


Formal Poster 3: The Maze Poster



Learning Styles

- Bring demos
- Have a computer
- Interactive elements

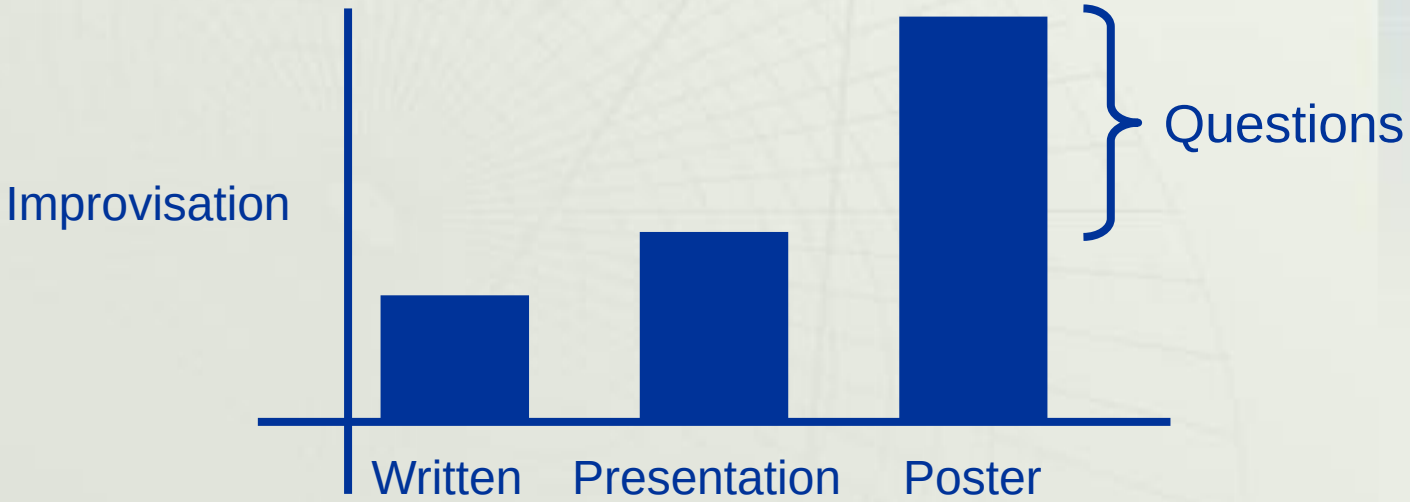


Gardner's Multiple Intelligences

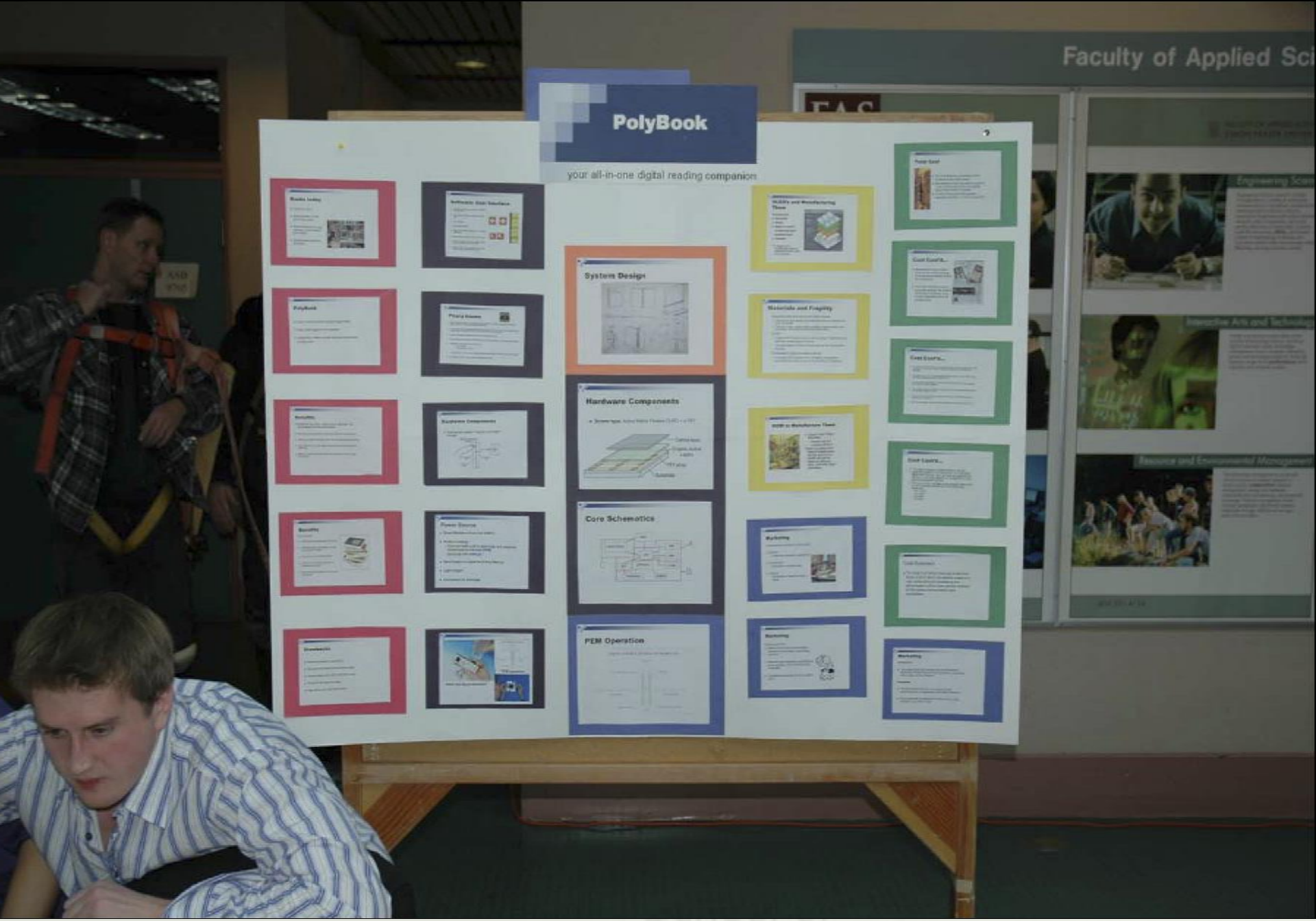
- Gardner's theory of multiple intelligences, while virtually untested after 31 years, is worth considering in teaching.
- In poster presentations, you might try some of the differing approaches illustrated.

Handling Questions

- Andrew, I, and the TA will have lots of questions
- Encourage questions/suggestions from others
- Reiterate the questions if they are unclear
- Don't make stuff up – you'll get caught. BS kills.
- Remember your audience (level of detail)




Sniff and Destroy
GROUP ETA
Mines: A Background
Antipersonal Mines
Victims
Urgent Removal Necessary
SNIFF (mine detection)
DESTROY (mine elimination)
COMPARISON TO EXISTING METHODS
COST ANALYSIS


Faculty of Applied Sci
PolyBook
your all-in-one digital reading companion
System Design
Hardware Components
Core Schematics
PEM Operation


Faculty of Applied Sciences
FAS
Kinesiology
Communication
Computing Science
iDate
Vision
Purpose for iDate
Features
Specifications
Future Developments
Marketability
Is it Profitable??
Potential Hurdles and Competitors
iDate

Group Gamma
Developing Safe and Friendly Alternative Housing Solutions

UNDERWATER HABITATS

what would life be like...
being a part of a e[illegible]w revolution...
living just two minutes away from d[illegible]wntown Vancouver...
without the worries about be[illegible]ng stuck in rush hour traffic...
...if you lived underwater?

BACKGROUND

Why Underwater?

STRUCTURE

Interior

Exterior

POWER

Hydroelectricity

Offshore Wind Farms

Alternative Resources

FOOD AND WATER

Fish...lots of fish

Crops

Meat

Water

LIGHTING

For Plants

For Humans

WASTE

Bodily Excreta

Gases

Industrial Waste

TRANSPORTATION

Submarines

PSYCHOLOGICAL EFFECTS

EMERGENCIES

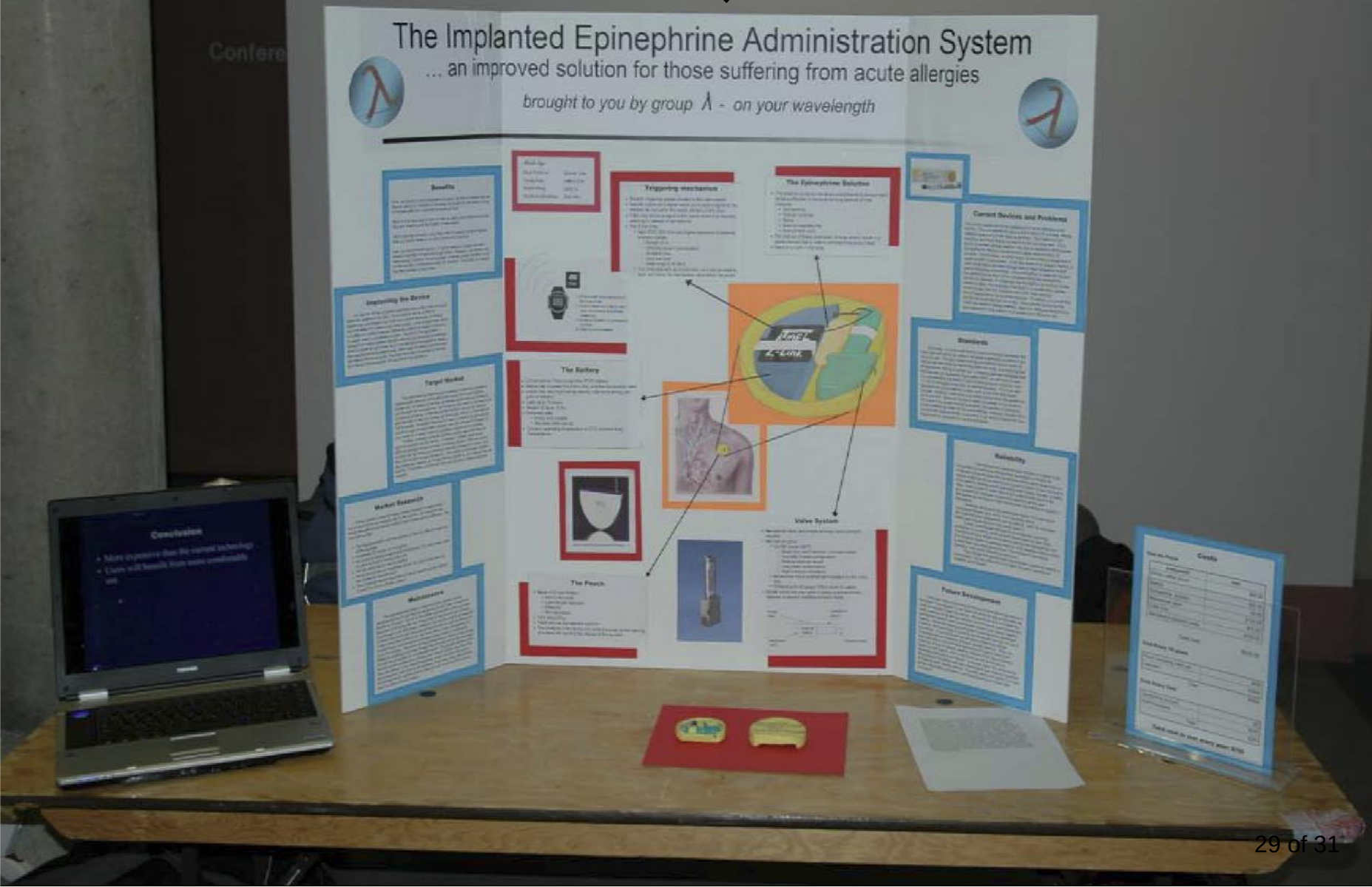
CONCLUSION

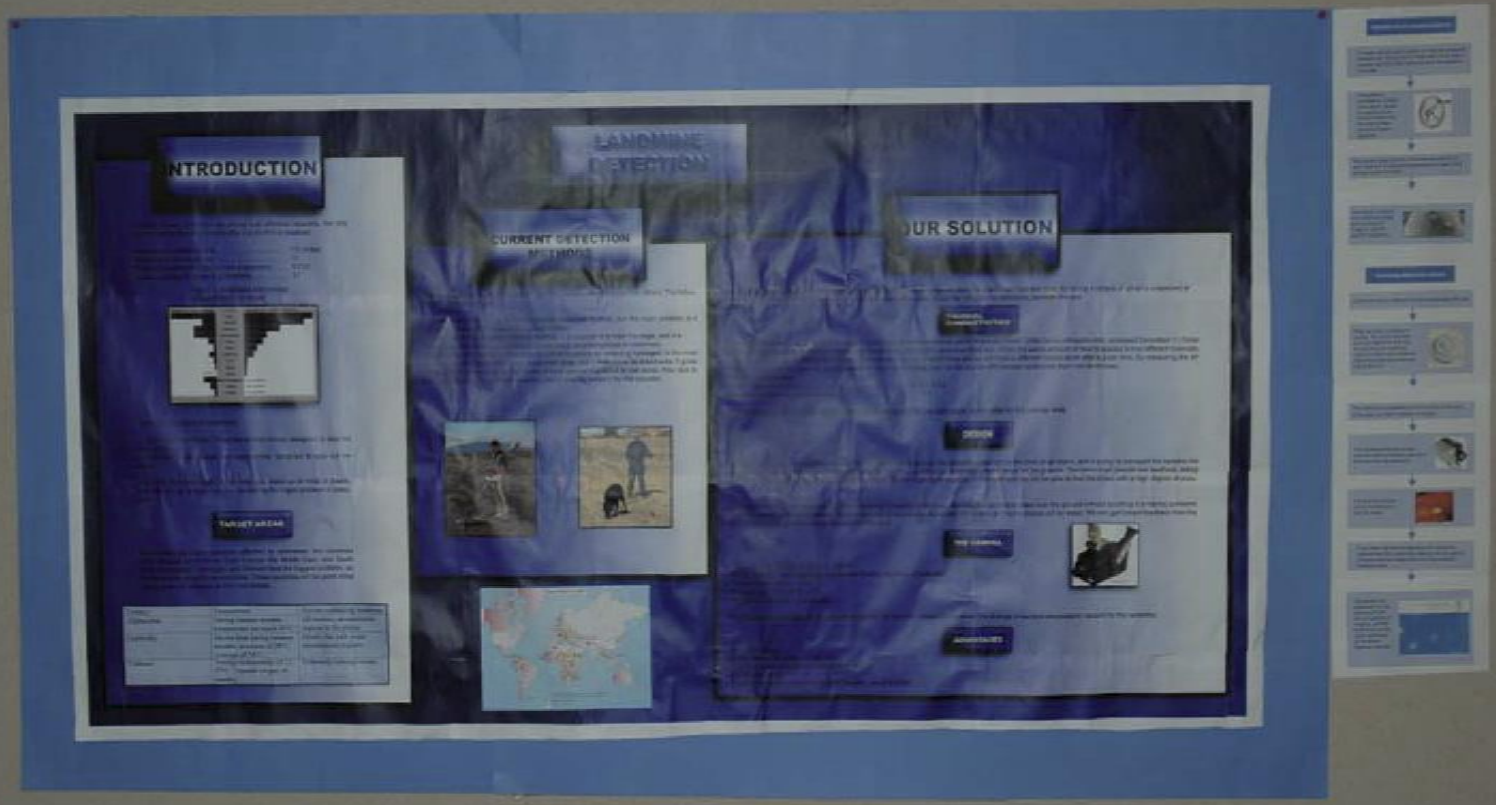
Problems to Solve

Further Improvements

ENGC 1000 Fall 2005
Group Gamma

Trifold Board




INTRODUCTION
LANDMINE DETECTION
CURRENT DETECTION METHODS
OUR SOLUTION

Questions?

- **More information:**
  - 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.