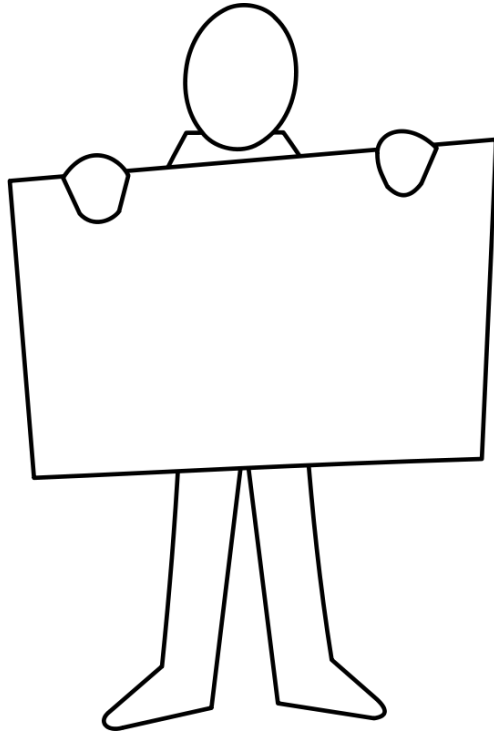


Poster Presentations: Design and Delivery



Joanne Lax
Graduate Technical
Communications & Professional
Development Specialist
jlax@purdue.edu



Don't reuse
the same
poster!



"Haven't I seen this poster somewhere before?"

"It takes intelligence, even brilliance, to condense and focus information into a clear, simple presentation that will be read and remembered. Ignorance and arrogance are shown in a crowded, complicated, hard-to-read poster."

Mary Helen Briscoe, quoted in R. Day, *How to Write & Publish a Scientific Paper*, 5th ed., 1998.

What are Poster Presentations?

- Alternative to paper presentation
 - Allow much more research to be presented



Poster Purpose

- To communicate your research
- To get feedback before submitting a manuscript for publication*
- To network with others in the field
- To promote your work/you before entering the job market

*may have already done this



Adapted from S. Plunkett, "Tips on Poster Presentations at Professional Conferences"

Poster Presentation Pros & Cons



Cons

- No captive audience
- Limited space for message
- Awkward to transport

-
- More relaxed
 - Attractive medium
 - More personal



Pros

Posters ≠ PowerPoint Slides

Slider Lubricant Interactions at the Head-Disk Interface: Rational Flip-Height Control

Sean M. Murray & Prof. David Bogy
Computer Mechanics Laboratory
University of California, Berkeley

UMD System Modeling
Report 2013-004
11/2013

Introduction/Problem Statement

- Formulate and solve the problem statement, which is the key to getting across the slide and the key to the success of the presentation.
- Be clear, concise, and to the point. Use bullet points to organize the information.
- Use a clear, logical flow. Use a clear, logical flow to guide the audience through the presentation.
- Use a clear, logical flow to guide the audience through the presentation.

Experimental Setup

• **Hardware:** Disk drive, Data Acquisition System, etc.

• **Software:** MATLAB, etc.

Procedure

- Describe the procedure used to conduct the experiment.
- Include details about the equipment used, the data collected, and the analysis performed.

Verification of Heater Actuation

• **Figure 1:** Heater actuation verification. The graph shows two data series: "Heater actuation at 1.0 um" and "Heater actuation at 1.5 um".

Verification of Heater Actuation

• **Figure 2:** Heater actuation verification. The graph shows a single data series: "Heater actuation at 1.0 um".

Verification of Heater Actuation

• **Figure 3:** Heater actuation verification. The graph shows a single data series: "Heater actuation at 1.0 um".

Verification of Heater Actuation

• **Figure 4:** Heater actuation verification. The graph shows a single data series: "Heater actuation at 1.0 um".

Critical Protrusion Power

• **Figure 5:** Critical protrusion power. The graph shows multiple data series for different conditions.

Critical Protrusion Power

• **Figure 6:** Critical protrusion power. The graph shows multiple data series for different conditions.

Critical Protrusion Power

• **Figure 7:** Critical protrusion power. The graph shows multiple data series for different conditions.

Observations/Conclusions

- Summarize the key findings of the experiment.
- Discuss the implications of the results and any limitations of the study.

Posters ≠ Written Reports

Slider-Lubricant Interactions at the Head-Disk Interface : Thermal Fly-Height Control

Sean Moseley & Prof. David Bogy
Computer Mechanics Laboratory
University of California, Berkeley



CML Sponsor's Meeting
January 29th, 2008
UC Berkeley

Problem Statement

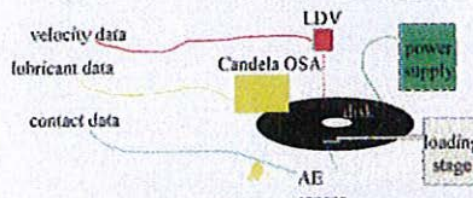
To enable higher-capacity disk drives, both the fly-height (FH) spacing between the slider and disk and the fly-height modulation (FHM) must be reduced. At this small spacing, interactions with the lubricant layer become important in controlling the FHM.

Thermal Fly-height Control (TFC) is a current technology to deal with the difficulties associated with moving the read/write head closer to the disk surface. Thermal heating of the trailing pad is used to move the read/write head closer to the disk surface while keeping the rest of the ABS further away from the disk.

To investigate the unique interaction between a TFC design and the lubricant layer, experiments were performed to:

- Show that our experimental setup could successfully activate TFC designs.
- Determine the behavior of the interface as the heater power is varied from 0 mW to hard contact.
- Determine the heater power at which the slider-lubricant interaction changes dramatically ("critical heater power").

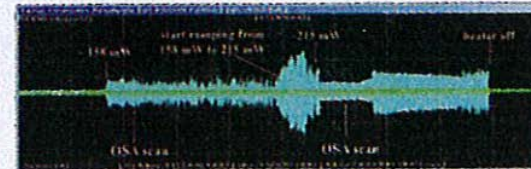
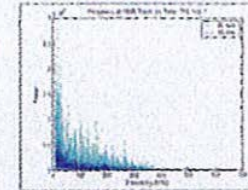
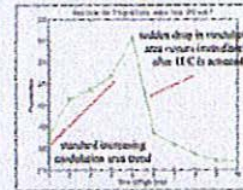
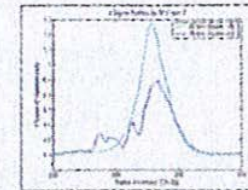
Experimental Setup & Data Collection



Velocity data was collected with a Polytec LDV, sampled at 10 kHz, chosen to qualitatively sense HGA motion. Lubricant data was collected with a Candela 5100 OSA, sampled at $1 \mu\text{m} \times 0.04^\circ$. Lubricant measurements were taken at 1, 5, 10, 15, 20, 25, 30, and 45 min. An AE sensor, sampled at 10 kHz, was used to continuously monitor for contact between the HGA and the disk.



Data



Observations/Conclusions

Qualitatively, we observe from the verification test (OSA data) that at 10,000 rpm, the modulation track becomes depleted immediately after the TFC is actuated with high power (greater than 300 mW) while lesser power (270 mW and below) does not produce strong changes in the interaction between slider and disk surface. The modulation area decreases immediately after high-power TFC actuation, along with the power spectrum of the Maximum Modulation Band. From the critical power test (OSA/AE/LDV data), we observe that the AE sensor picks up a change at lower power than the LDV sensor, so the AE sensor appears more sensitive. The "critical heater power" where these dramatic changes occur is around 300 mW for 10,000 rpm and 200 mW for 7,200 rpm disk speed.

Unprofessional Poster Design



Effective Poster Design

Slider-Lubricant Interactions at the Head-Disk Interface : Thermal Fly-Height Control

Sean Mowley & Prof. David Bogy
Computer Mechanics Laboratory
University of California, Berkeley



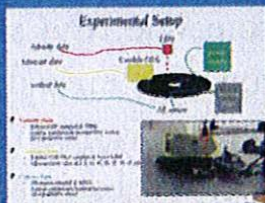
CMR, Sponsor's Meeting
January 29th, 2008
UC Berkeley

Understanding the effect of thermal protrusion technology on the disk lubricant layer is necessary to enable further increases in hard drive storage density.

This experiment was designed to:

- Verify successful TFC actuation
- Determine the qualitative behavior as heater power is increased to hard contact
- Determine the heater power at which the slider-lubricant interaction changes dramatically (the "critical heater power")

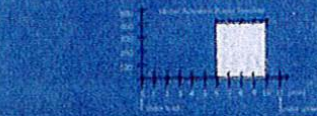
The experimental setup consisted of Laser Doppler Velocimeter, Optical Surface Analyzer, and Acoustic Emission measurement devices.



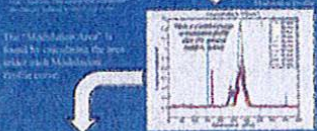
The experimental procedure was conducted using a famo form-factor slider design (provided by Western Digital) and a Kenwood DC power supply.

High-power TFC actuation causes localized changes in lubricant thickness and Lubricant Modulation.

The verification test occurred at a disk speed of 10,000 rpm (approx. 40 m/s). Only lubricant thickness data was captured.



A Modulation Profile was generated for plotting the localized thickness of the lubricant. The profile shows a peak in thickness corresponding to the TFC actuation.

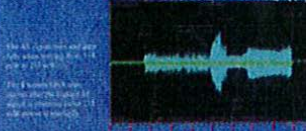
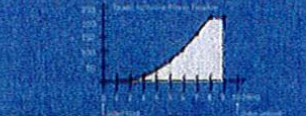


The "Modulation Index" is found by comparing the area under each Modulation Profile curve.

Disc OSA data shows that we have successfully observed TFC slider-lubricant interactions under the test conditions. Similar results are seen at less or 100 mW, but not below 250 mW.

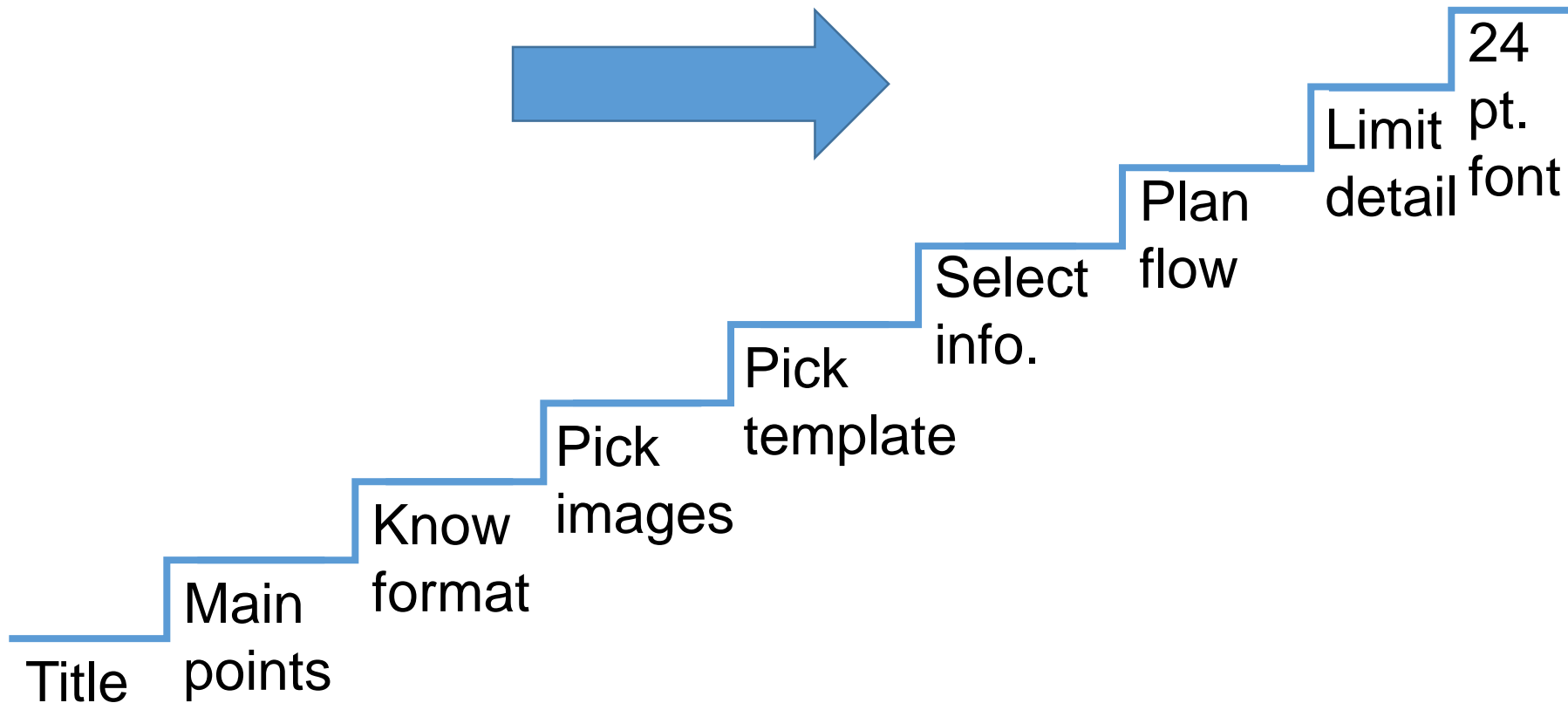
The "critical heater power" where sudden changes occur is around 200 mW for 7.2k rpm (300 mW for 10k rpm).

The critical power test occurred at a disk speed of 7,200 rpm (approx. 23 m/s). Lubricant thickness, slider motion, and contact data was captured.



Disc OSA data shows that we have successfully observed TFC slider-lubricant interactions under the test conditions. Similar results are seen at less or 100 mW, but not below 250 mW.

Poster Planning Steps



Poster Negatives

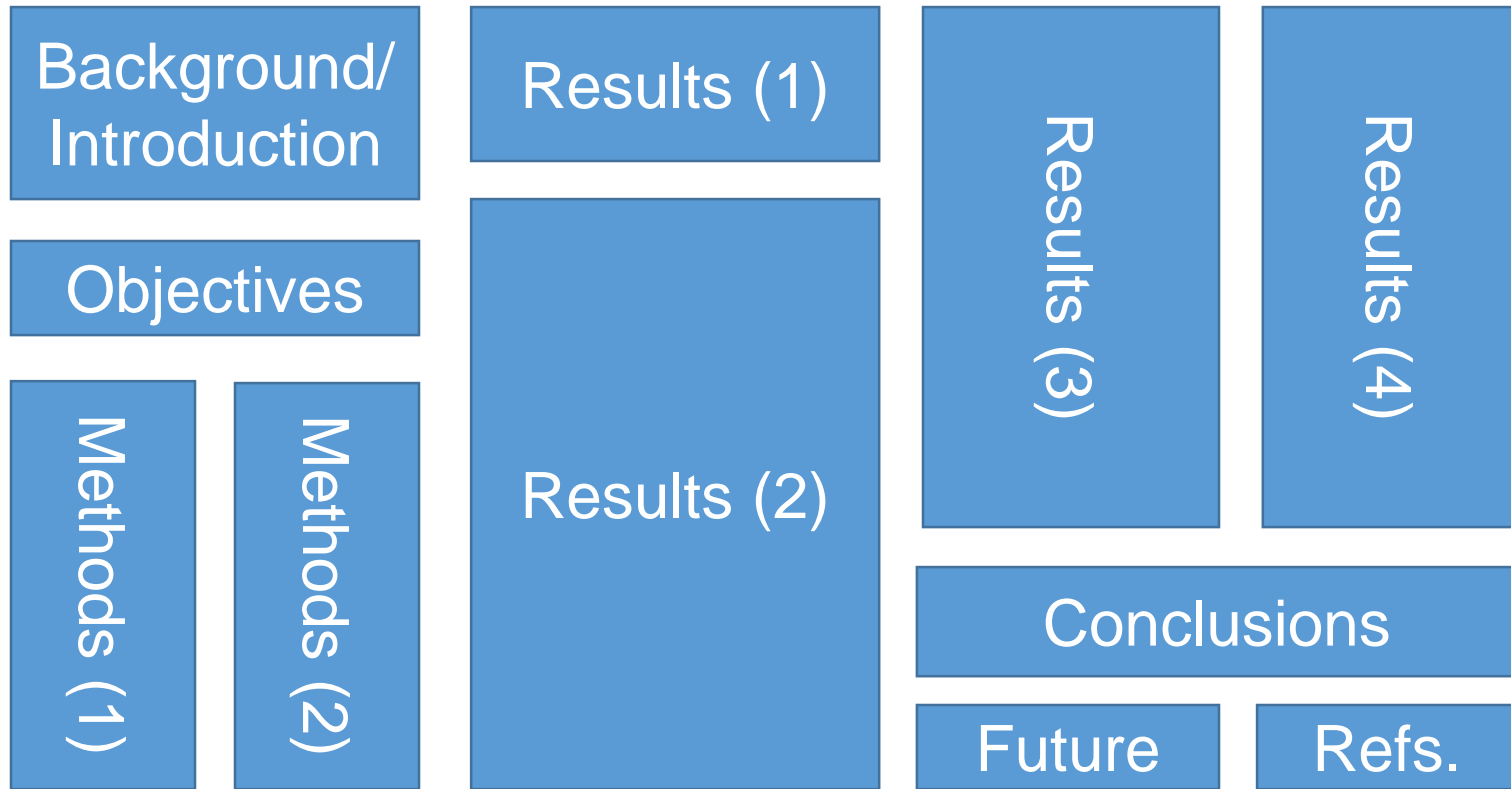
- Too much text & too small font size
- Poor organization
- Too crowded
- Poorly reproduced/enlarged images
- Interference from color/background
- No 'take-away' message



Think Visually

- Avoid large blocks of continuous text
 - Use bullet points
- Create a logical flow of information with boxes and headings
- Include relevant, colorful, clearly labeled, and legible images
- Remember that white space is good

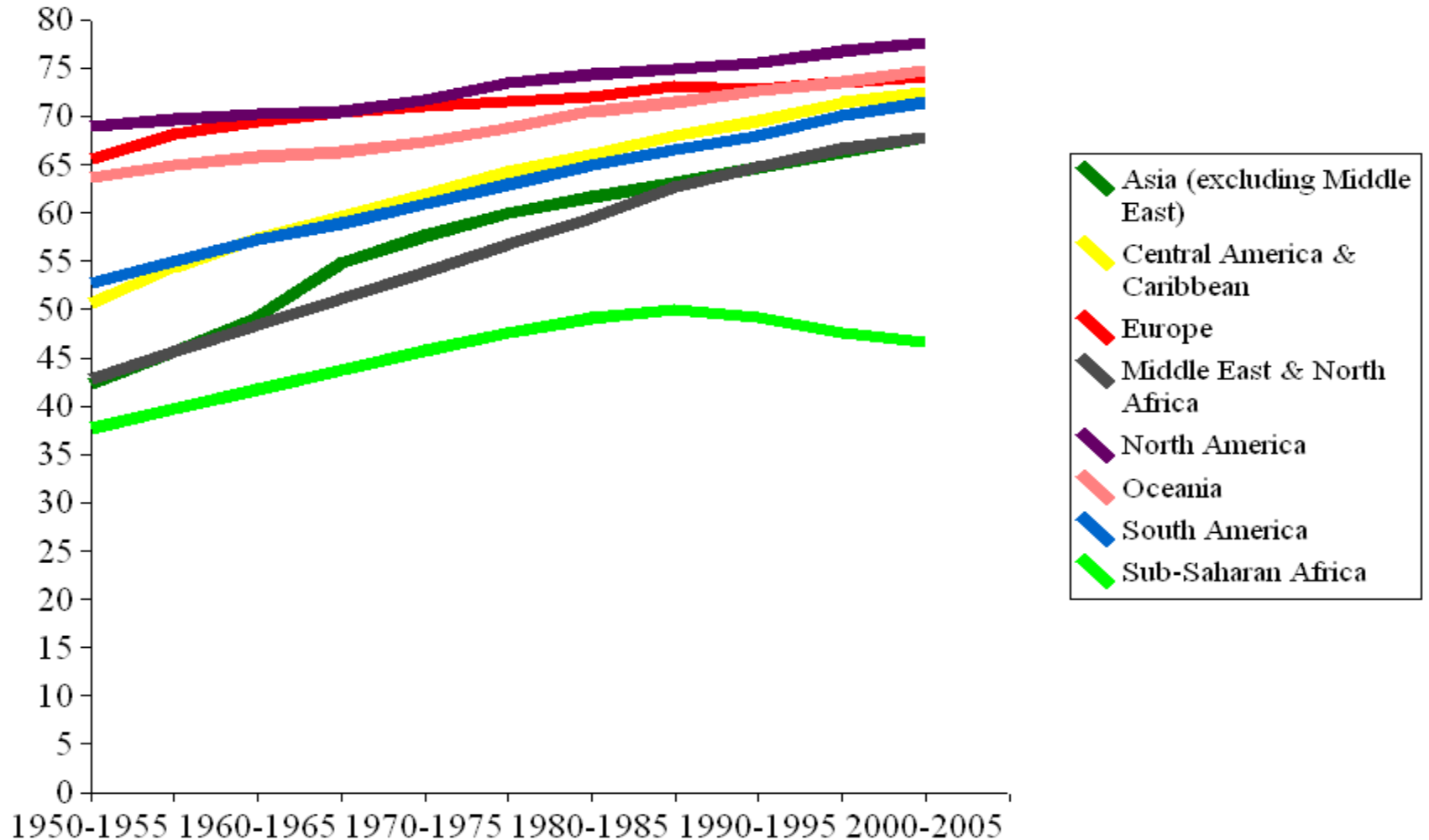
Poster Presentation Design



Common TAIMRAD headings

Bad Line Graph

Life expectancy 1950-2005



Layout for Equal Content

Poster Title Goes Here:

Subtitle if needed

Affiliation & Team Name

Team member 1, Team member 2,
Team member 3, Team member 4

Introduce the reason for
the investigation

Describe the experimental
setup

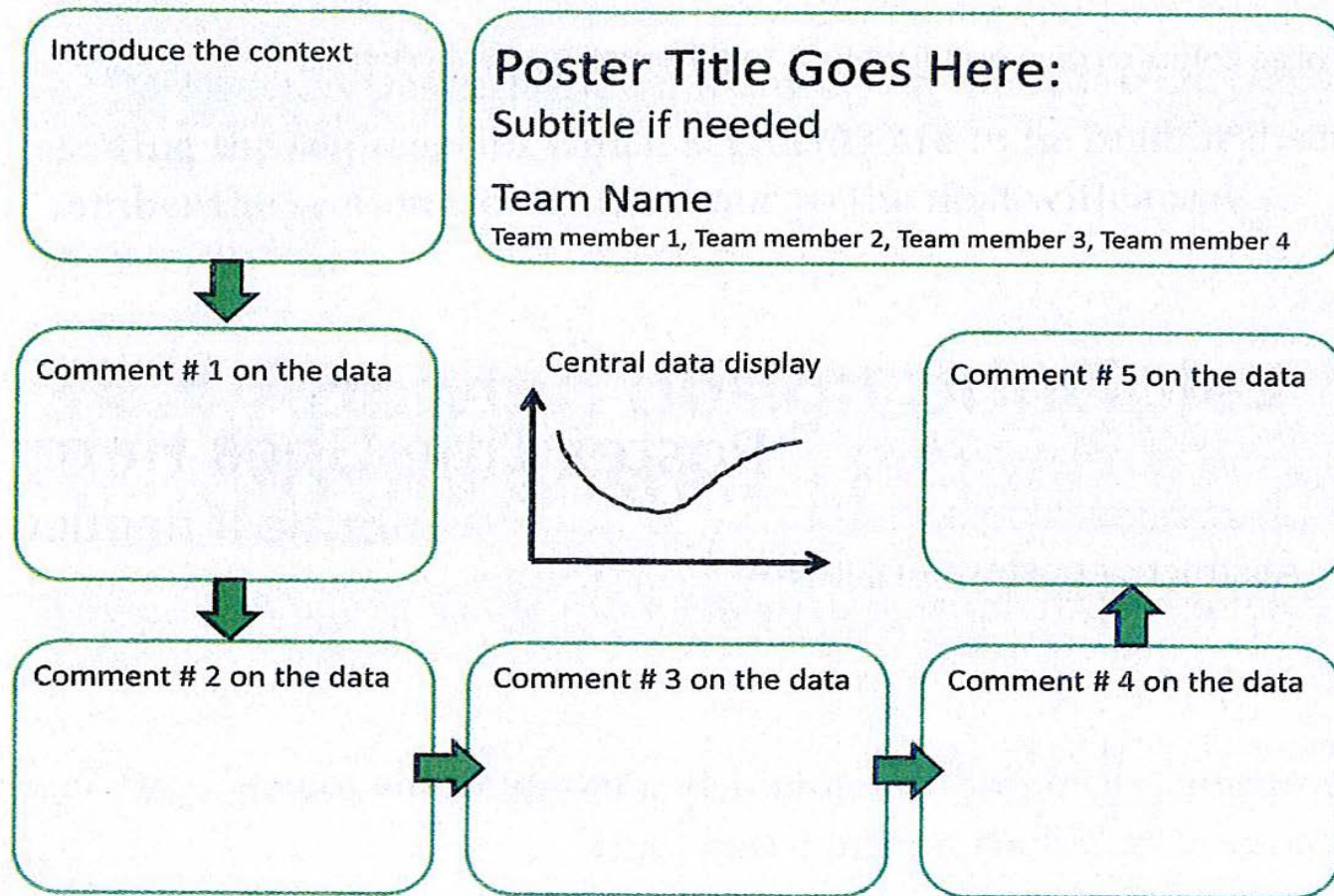
Interpret the results

Describe the experimental
theory

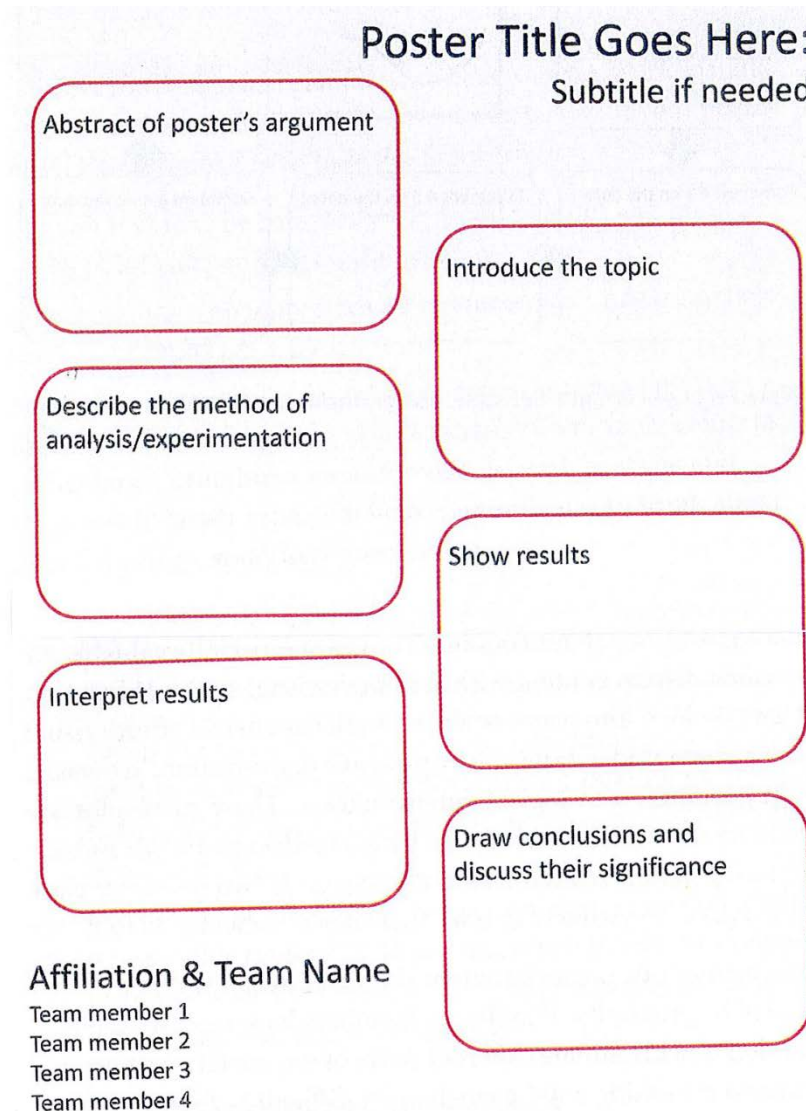
Show the results

Draw conclusions and
discuss their significance

Radial Layout for Single Main Visual Display

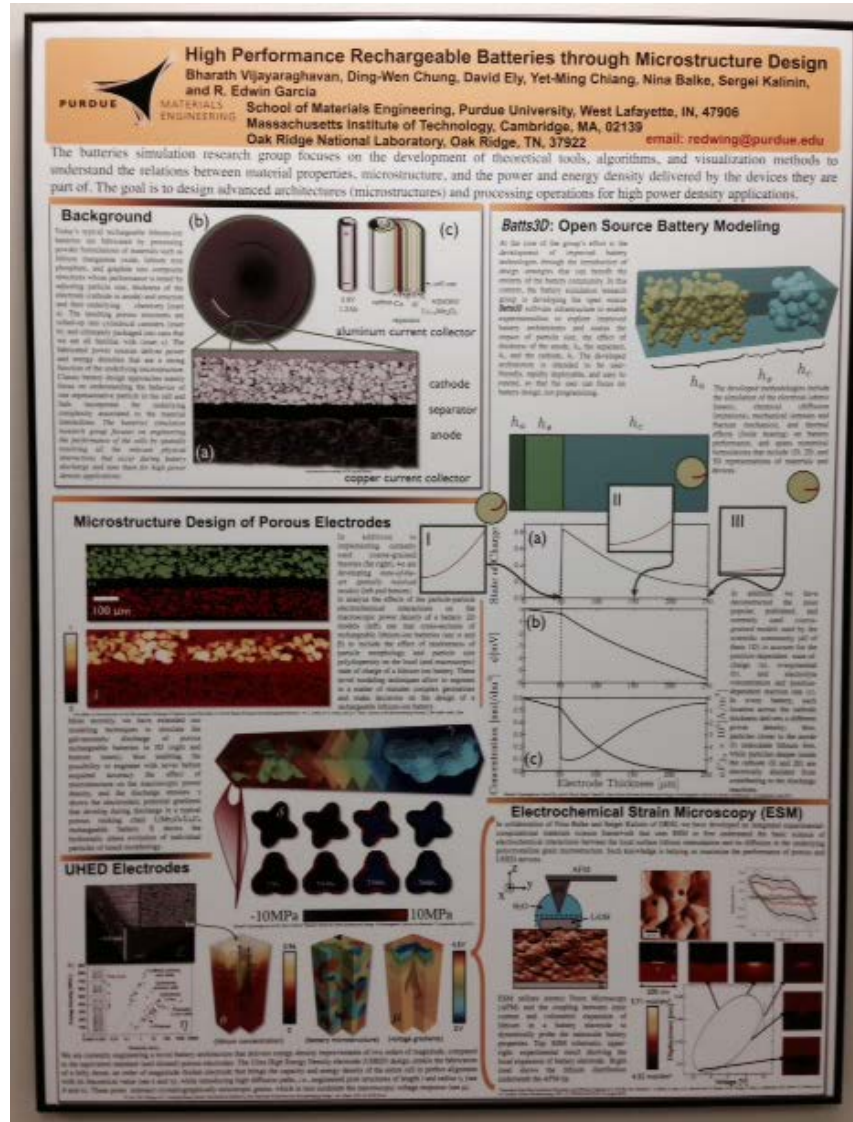


Staggered Layout for Steps



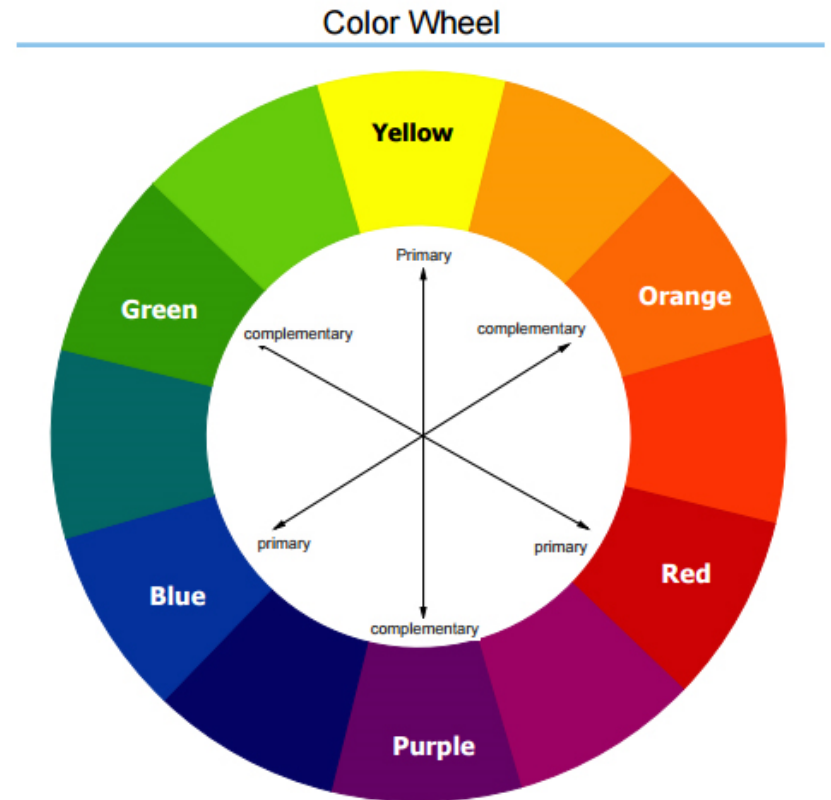
Poster Templates

MSE
frequently
uses this
portrait
template



Poster Design Principles

- Proximity
 - Related elements
- Alignment
 - Left or center justify
- Repetition
 - Design elements
- Contrast
 - Different fonts
 - Contrasting colors or ones with meaning



Poster Font Advice

- ≥ 18 pt. (can be read from 6'-9' away)
 - 24 pt. for text, bigger for headings
- Sans serif font for titles/headings
 - Arial or Helvetica
- Serif font for text
 - Palatino or Times New Roman



Be consistent in font style & size for same place in hierarchy

Ethical Considerations

- Only actual authors' names belong
 - Don't list 'ghost' authors
- Use citations (in conference-appropriate style) for
 - Summarizing, paraphrasing
 - Use of visuals created by others

Proofreading is Necessary

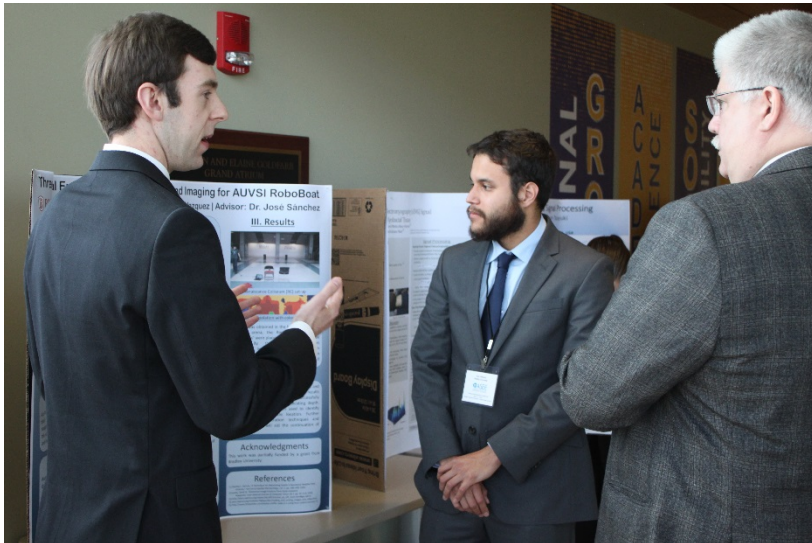


Poster Guidelines & Resources

- Vary according to the conference
 - Check poster specs!
- Google for guidelines for creating a poster using PowerPoint 2007, 2010, 2013
- Check out YouTube for numerous instructional videos

Audience Considerations

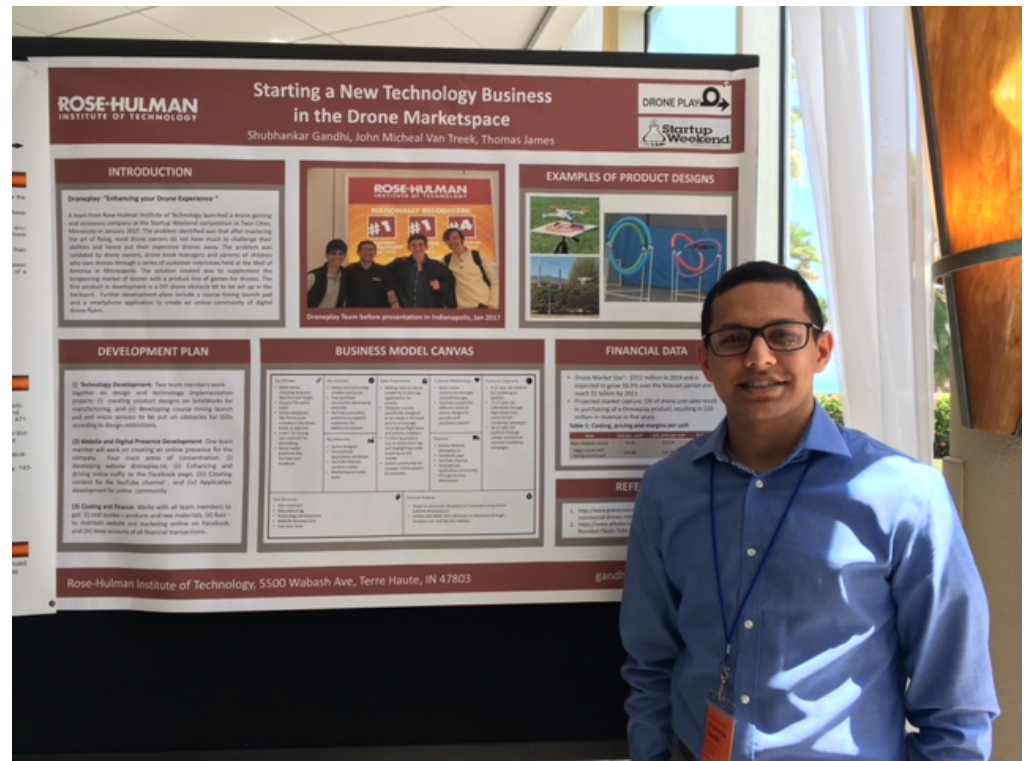
- Who are they?
- How do you find out?
- What is the impact of audience awareness on the poster?



Next Session

- Learn about delivering a poster presentation
- Review several authentic conference posters

Winning undergraduate poster from the 2017 ASEE Zone II Conference in San Juan, Puerto Rico.



Poster Transportation/Set-up

- Use a rigid cardboard poster tube or borrow one
- Keep it with you during travel
- Know the logistics for displaying posters
 - Bring necessary mounting supplies
- Bring it back or trash it?



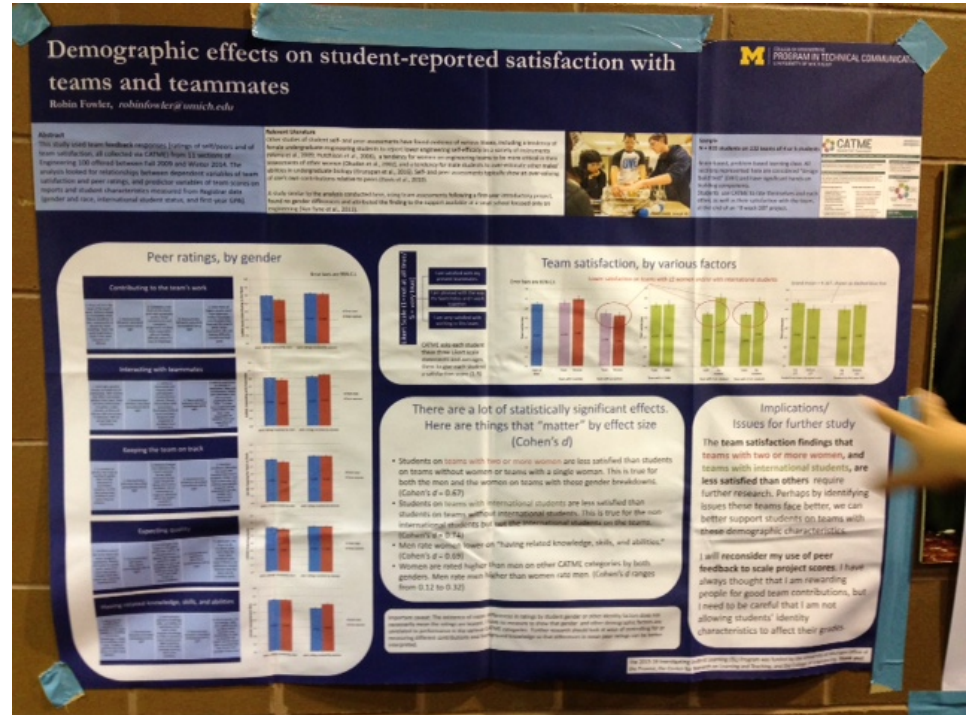
Fabric Posters

Pros:

- Lightweight
- Packable

Cons:

- Cost
- Planning time



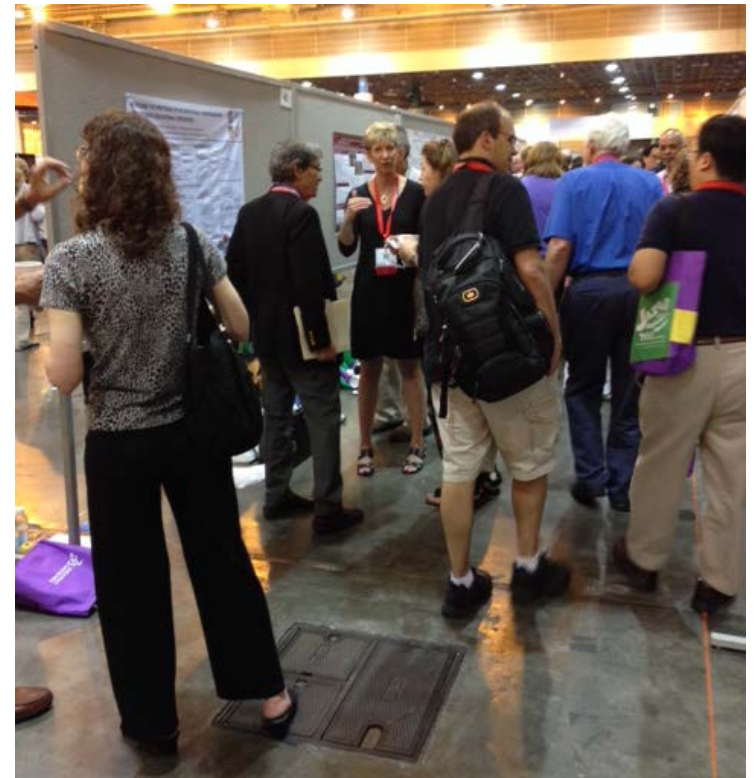
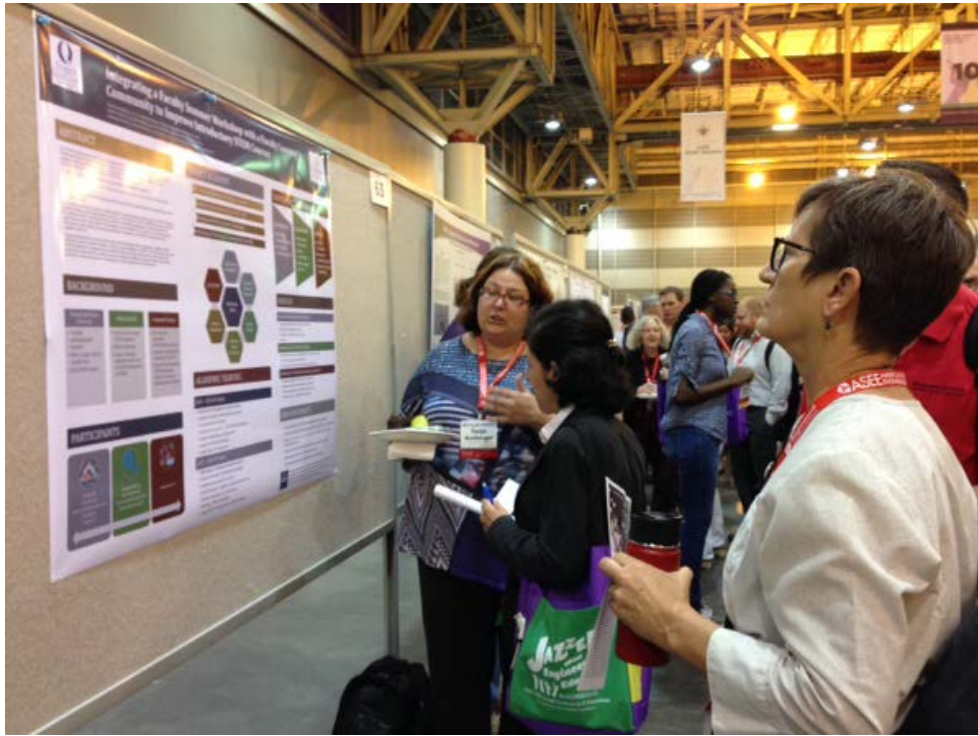
http://www.posterpresentations.com/html/fabric_research_posters.html

Environmental Logistics



- Standing for hour+
 - Wear comfortable shoes
- Lighting, temperature, noise variations

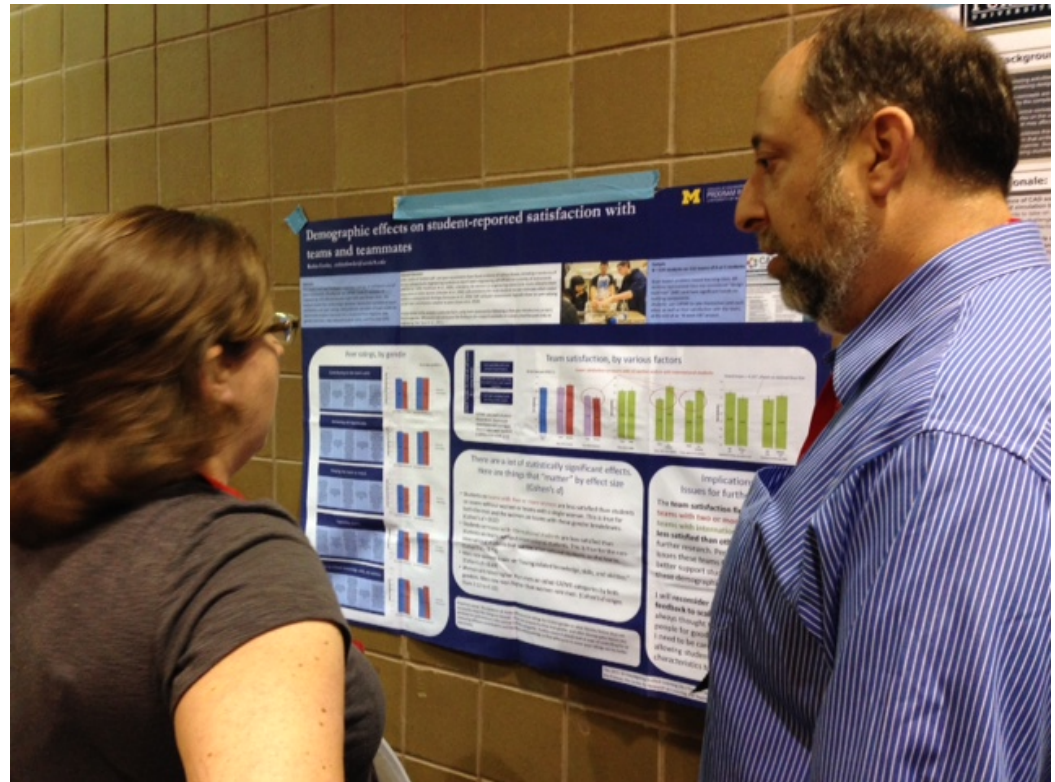
ASEE '16 Poster Session



“Postcard” Talk Poster Session (ASEE 2016)

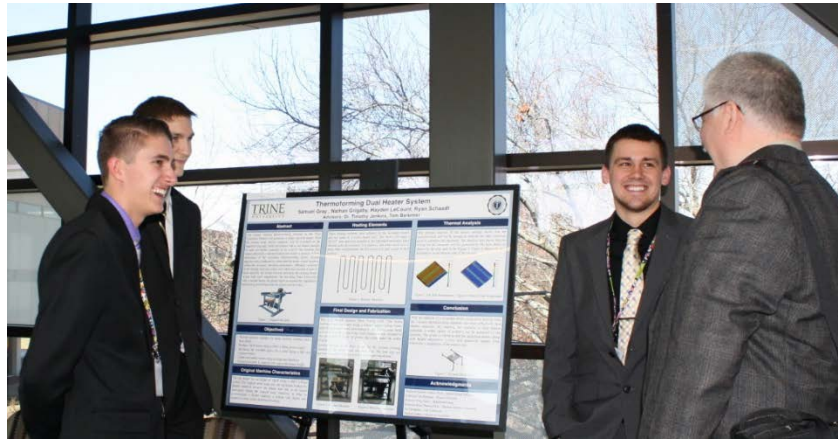
Features:

- Fewer slides
- Shorter talk
- Poster session follows



During the Poster Presentation

- The **visual appeal** of the poster draws people in; you keep them there with your **oral message**

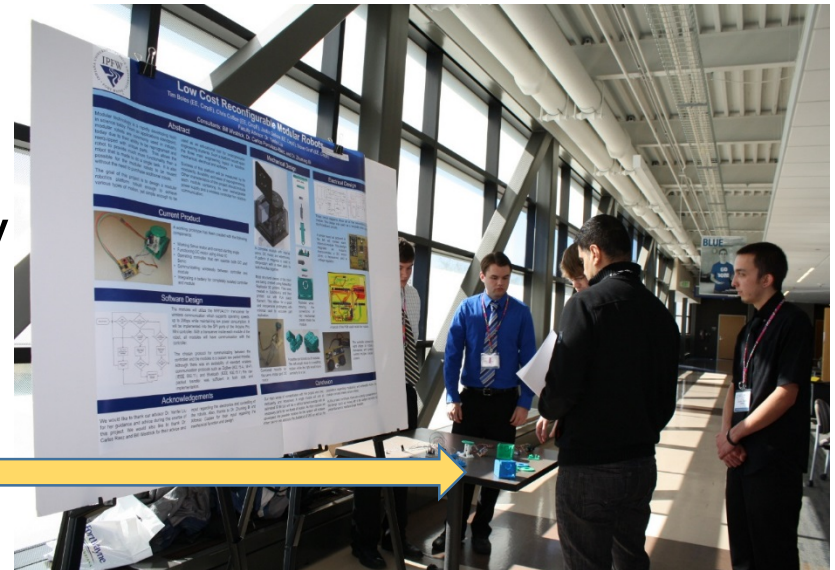


Poster Presentation Expectations

Presenters stand by poster

- Answer questions
- May present short talk every few minutes

Table may be provided for objects, demos, handouts



Short Talk Components

- Concise, well organized
- Stress motivation/objectives, method(s), key results, impact
- Be conversational in tone
- Adjust technical content to audience



Know your main points!

Good Communication is Crucial



Oral and
nonverbal



- Eye contact
- Gestures
- Posture
- Attire



Special Challenges



Listeners come and go & spend varying amounts of time



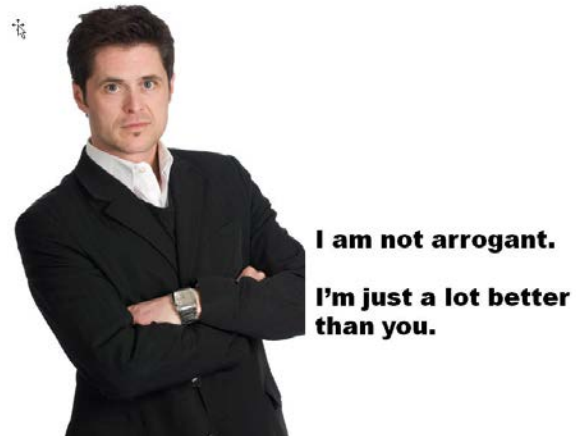
Presenters interact with a changing, diverse audience



- Expect interruptions
- Be flexible

Poster Session Problems

- Presenter involved in conversation unrelated to poster
- Presenters who are
 - Arrogant
 - Overzealous
 - Uninviting
 - Not available for questions



Adapted from a survey done at an American Psychological Association meeting, www.isanet.org/Portland/posterguide.html

Professional Behavior Tips

Be early,
stay the
whole time

Wear a
nameta
g

Greet
viewers
with smile,
“hello”



Don't talk with
one person,
ignore others

Offer
business
cards,
handouts

Bring a
notebook

Remove
poster
at the
end

