Preparing & Giving a Research Talk/Presentation

ENGR 361: Scientific Research Communication

https://www.csulb.edu

References

- Alred, G. J., Brusaw, C. T., & Oliu, W. E. (2009). *Handbook of technical writing*. Macmillan.

- Day, R. A., Sakaduski, N., & Day, N. (2011). *Scientific English: A guide for scientists and other professionals*. ABC-CLIO.

Presentation Content

I. Background/Problem Statement

II. Project Long Term Goal

III. Objective, Hypothesis

IV. Specific Aims

V. Project Methods/Design

VI. Project Evaluation

VII. Outcomes & Impact

VIII. Timeline

IX. Budget

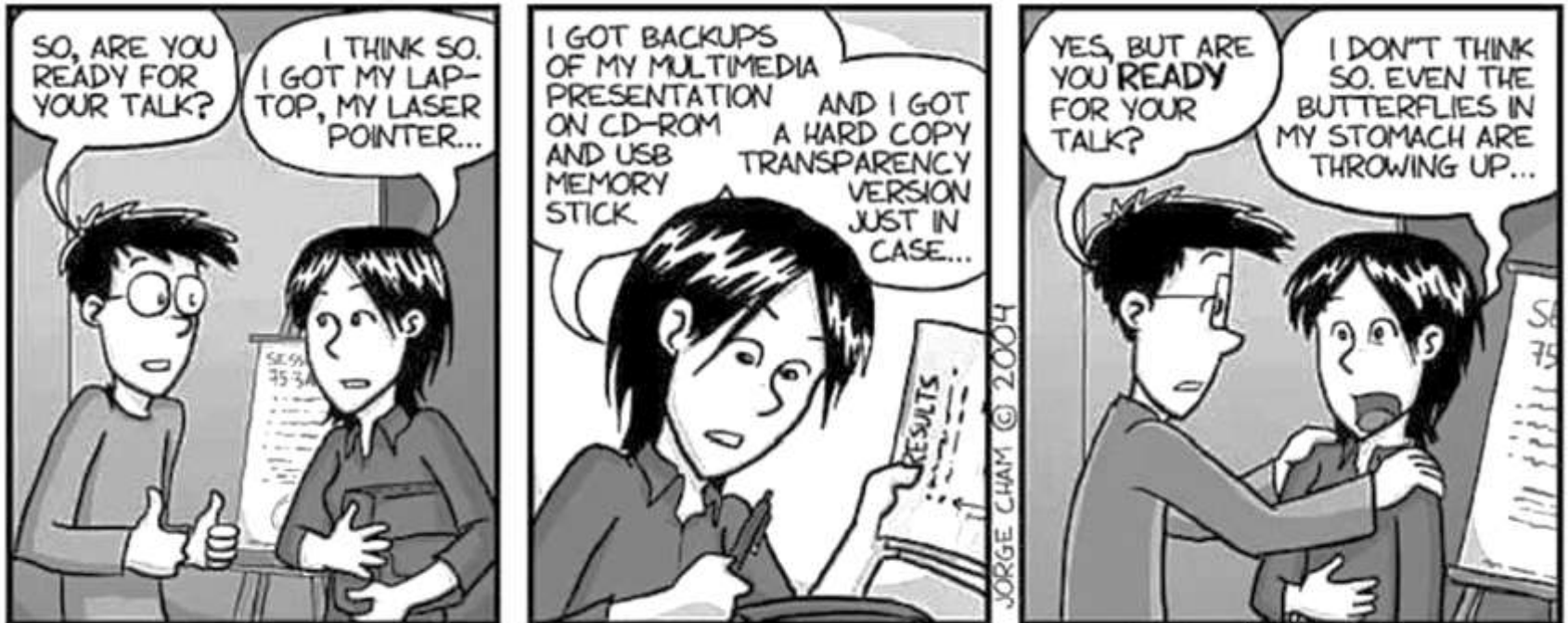X. References (and as needed in each slide)

Outline

- **Introduction to Research Talks**

- Organizing your research Talk

- Preparing the Content of your Presentation

- Preparing Visuals

- Starting and ending your presentation

- Becoming an Effective Presenter

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Introduction to Research Talks

- Very important component of your experience as a scientist

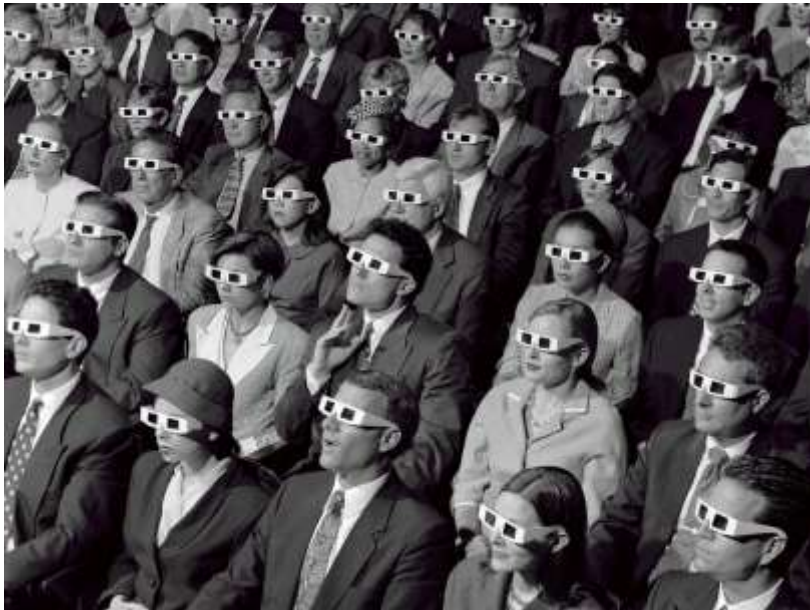# Introduction to Research Talks

Introduction to Research Talks

"I've still got 37 more slides to go!"

Introduction to Research Talks

- How is listening to a science talk different from reading a science paper?

Introduction to Research Talks

- What makes a Scientific *Talk* GOOD or BAD?

Introduction to Research Talks

- What the Audience wants…

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Organizing your Research Talk

- **Key(s) for your Presentation**
  - What do you want to say?
  - What is the Audience interested in hearing?

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Organizing your Research Talk

- **Essential Elements**
  - What is the problem?
  - What have others done?
  - What did I do?
  - What did I found?
  - What does it mean?

Organizing your Research Talk
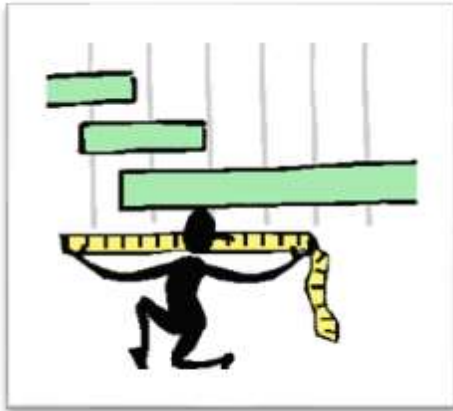
- **During the talk…**
  - Avoid extensive review of the literature
  - Method details should be limited

  - Review main points at each segment

Organizing your Research Talk

▪ **Types of Oral Presentations**

Short	Medium	Long
5-10 min	*10-20 min*	*1 hour*

- Lab/Group Meeting
- Research Conference
- R&D Meeting
- Classroom Lecture

Organizing your Research Talk

- **Short Talks**
  - Limited time for background
  - Focus should be limited to essential info

  - 10-12 slides for 15 min talk
    - Not including Title, References, or Thank You slides
  - Highlight the important key points
  - The literature review should be minimal
  - Use schematics & graphs
  - Practice your story

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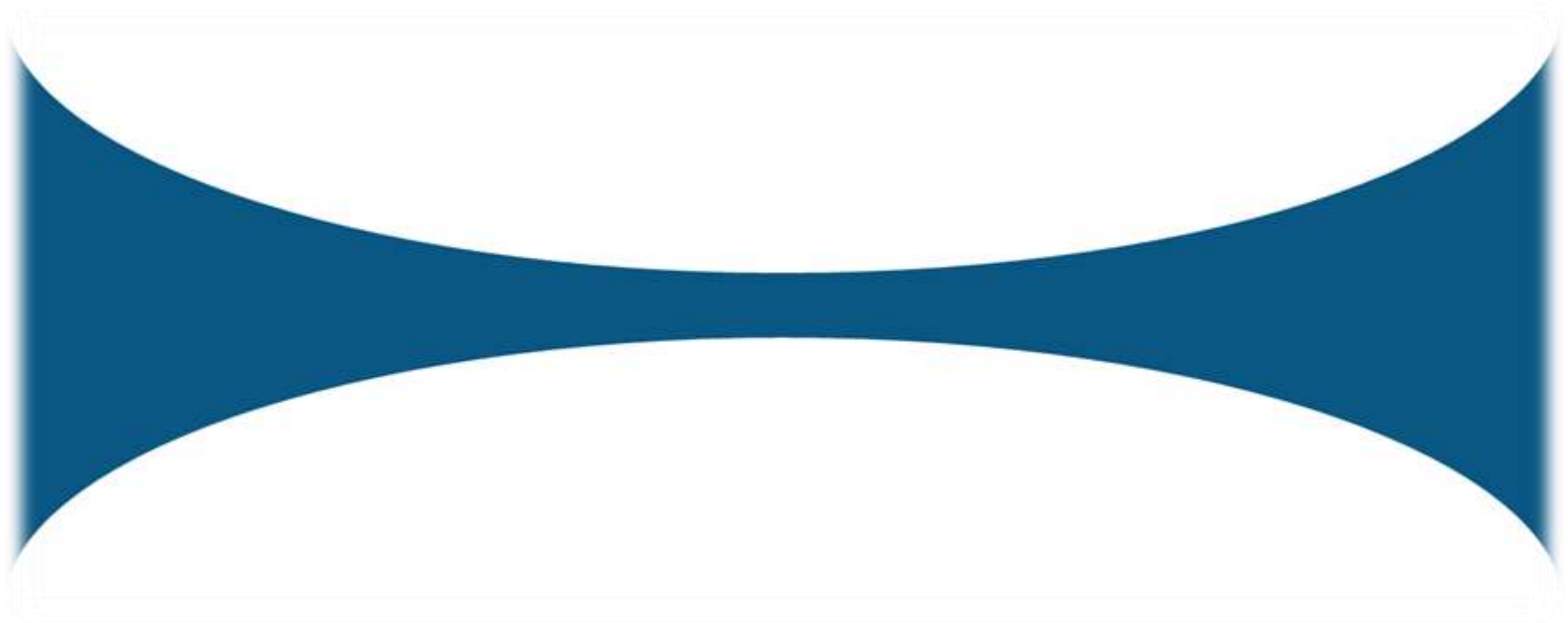# Organizing your Research Talk

- **Long Talks**
  - More flexibility in information
    - Limit number of themes or ideas presented
    - Don't go too fast in introduction
      - Do not lose the audience

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Organizing your Research Talk

- The structure of a good talk
  - Start broad, get specific, & end broad

Susan McConnell, Department of Biological Sciences, Stanford University

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Organizing your Research Talk

- **The "Home Slide" for Long Talks**
  - Design and introduce a "Home Slide" that you'll come back to at each major transition in your talk

  OR

  - Set up a slider bar indicating where you are at in the talk

Methods

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Preparing the Content of your Presentation

- Two Main Components
    1. Create Clear & Concise Content

    2. Deliver your Presentation Dynamically!

Preparing the Content of your Presentation

- **Content of Presentation**
  - Consider & target your audience

  - Explain why it is important to them

  - Tell a compelling story

  - Keep it simple

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Preparing the Content of your Presentation

- **Know your Audience**
  - What is their background?
  - What information will they find interesting?
    - Length of talk is CRUCIAL

Preparing the Content of your Presentation

- **Keep the Message Focused**

  – Too Many Ideas ➡ **CONFUSION**

  – Talk to Quickly

Preparing the Content of your Presentation

- **Tell a Compelling Story**
    1. Start with Context
    2. Explain the specific problem
    3. Provide highlights
    4. Conclude

Preparing the Content of your Presentation

- **Tell a Compelling Story**
  1. **Start with Context**
     - Describe previous work and current challenges
     - Explain importance of current work

Preparing the Content of your Presentation

- **Tell a Compelling Story**
    2. **Explain the Specific Problem**
        - Justify your Approach

Preparing the Content of your Presentation

- **Tell a Compelling Story**
  3. **Provide Highlights**
     - Explain your methods & results
     - Connect results to the audience's interests

Preparing the Content of your Presentation

- **Tell a Compelling Story**
  - **4. Conclude**
    - Present the central conclusion
    - Sum up key points (support central conclusion)
    - Next steps/Future work
    - Acknowledge others

Preparing the Content of your Presentation

- **Presentation Formula**
  - Tell the them what you are going to tell them
  - Tell them in detail
  - Tell them what you have told them

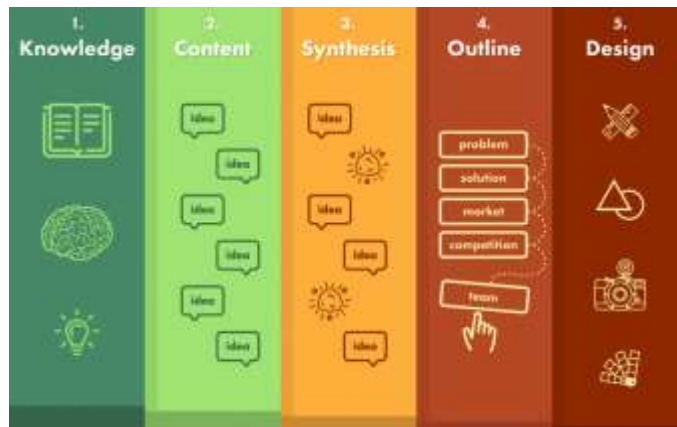Tell the audience what you're going to say, say it; then tell them what you've said.

(Dale Carnegie)

Preparing the Content of your Presentation

- **Slide Presentation**
  - Present Slide in Landscape view
    - Like watching TV, not reading a book
  - Don't crowd slides with too much information
    - Limit the number of ideas on a slide
    - Slide should be understood in a matter of seconds

Preparing the Content of your Presentation

- **Quality of Content & Expertise**
  - Do your research & cite any work you used
  - Use appropriate terminology

  - Credibility: Expertise & <u>Preparation</u>

Technical Expertise

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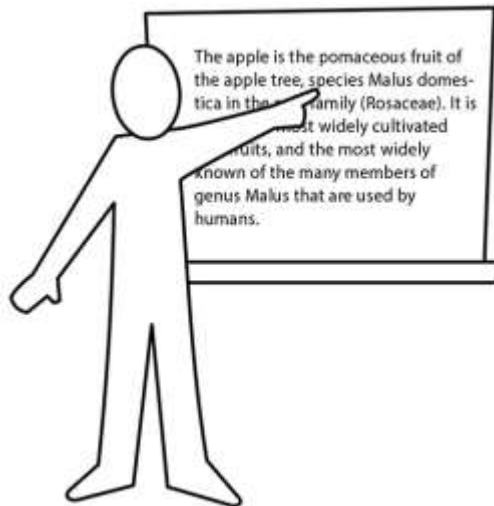**LONG BEACH**

Preparing Visuals

- **Visual Aids**
  - Presenters that use graphics effectively are perceived as
    - Better prepared
    - More professional
    - More persuasive
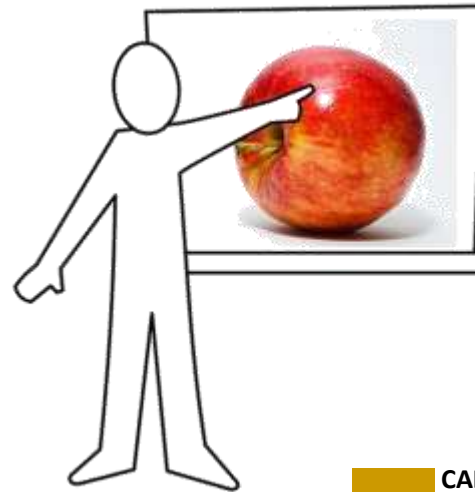   - More interesting

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Preparing Visuals

- **Visual Aids**
  - Use illustrations & graphs
  - Present one idea per slide
  - Avoid distracting animations
  - Appropriate color scheme

versus

Preparing Visuals

- **Visual Aids**
  - Appropriate Color Scheme

  Not an appropriate color scheme

  Not an appropriate color scheme

  Appropriate color scheme

  Appropriate color scheme

  Appropriate color scheme

Preparing Visuals

▪ Visual Aids

– Font & Font Size

Arial 40   Appropriate Font

Arial 24   Appropriate Font Size

Comic Sans MS 40   Not an Appropriate Font

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Preparing Visuals

- **Visual Aids**
  - Serif -vs- San Serif Fonts

AaBbCc
- In typography, a **Serif** is a small line attached to the end of a stroke in a letter or symbol
  - Times New Roman, Garamond

AaBbCc
- A typeface without serifs is called **Sans Serif** from the French sans, meaning "without"
  - Arial, Helvetica, Gill Sans

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Preparing Visuals

- **Template Color Recommendations**
  - First Choice: Black on White
    - Easy to read
    - Highly flexible for slide design
    - Matches background of imported graphs & figures
    - Not distracting to audience

Preparing Visuals

- **Visual Aids**
  - Template Recommendations
    - Less "busy", the better
    - Use template appropriate with talk content, audience
    - Do not change templates within a presentation

Preparing Visuals

- **Other Considerations**
  - Slides should supplement what you say, not repeat what you say
    - Keep text to a minimum
    - Use Graphics & Images

Preparing Visuals

- **Ask for Feedback**

Lorem *ipsum* DOLOR **sit**

- Mauris eget dui. Phasellus mollis dolor quis libero. Aliquam ipsum massa, fermentum eget, tincidunt molestie, dictum id, purus.
- Nullam sed sem. Aliquam dictum felis ac ante. Pellentesque aliquam. Nulla in leo. Pellentesque tempor elit a nisl. Maecenas sagittis purus nec purus. In vulputate tempus erat.
- Integer viverra quam sed metus. Aliquam tincidunt sollicitudin orci. Quisque dignissim, dolor eget ornare ornare, ante enim gravida nisl, eget mattis ipsum orci nec est. Aliquam tempus suscipit lorem. Suspendisse auctor, enim vitae eleifend tempus, sapien urna cursus elit, et bibendum nibh purus at libero.
- Etiam leo. Integer ut arcu.
- Pellentesque sed dui at ligula posuere auctor. Morbi quam nibh, tristique non, malesuada eu, laoreet id, libero. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Integer vel nisl. Nullam nisi. Donec et nisl. Cras quis neque scelerisque ligula malesuada tempus. Integer non libero et nibh adipiscing tempus. In convallis. Aliquam a lorem in elit condimentum bibendum.
- Integer in nisl. Phasellus nisl odio, auctor et, luctus sed, luctus sit amet, nisl. Etiam tempor pede sit amet nunc. Maecenas vehicula iaculis quam. In hac habitasse platea dictumst. Nulla ante ligula, rutrum vel, pharetra in, laoreet id, ipsum.
- Aliquam magna purus, mollis et, feugiat id, sollicitudin eu, orci. Vestibulum tempor. Proin non tellus. Lorem ipsum dolor sit amet, consectetuer adipiscing elit. Vivamus consectetuer.
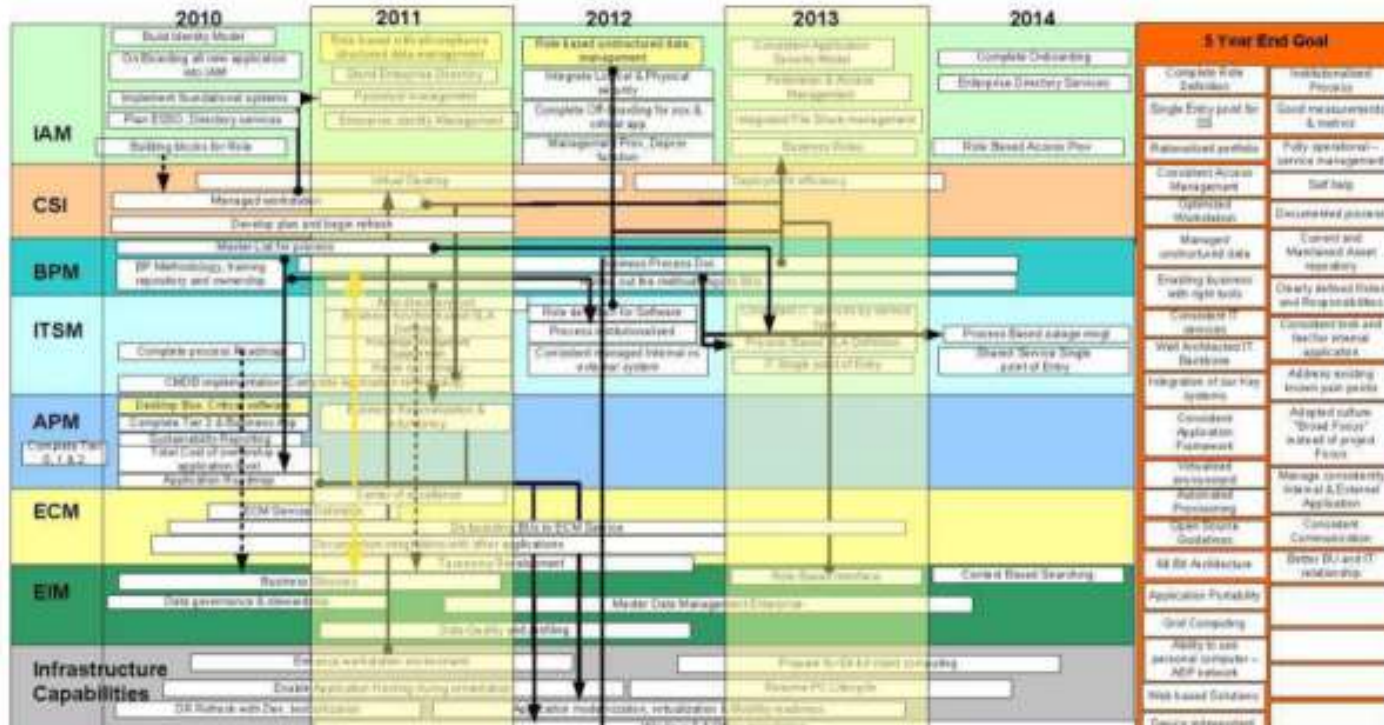
Problems with this slide?

Problems with this slide?

IT Modernization Roadmap

Problems with this slide?

TMI?
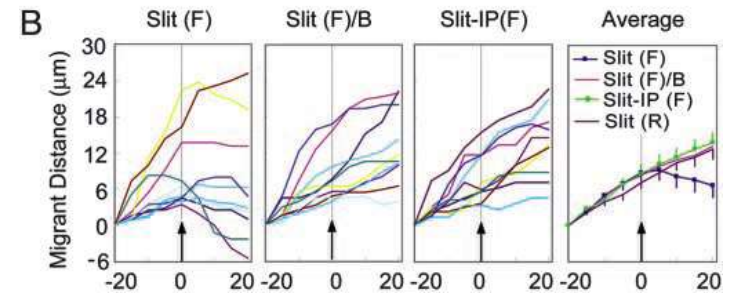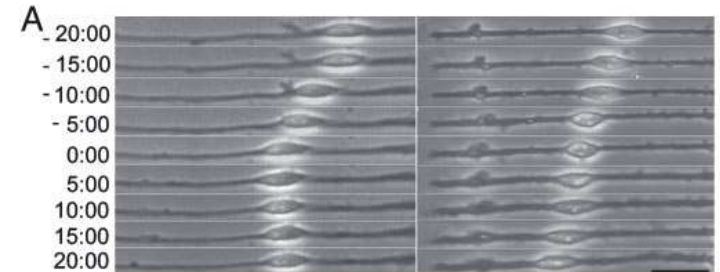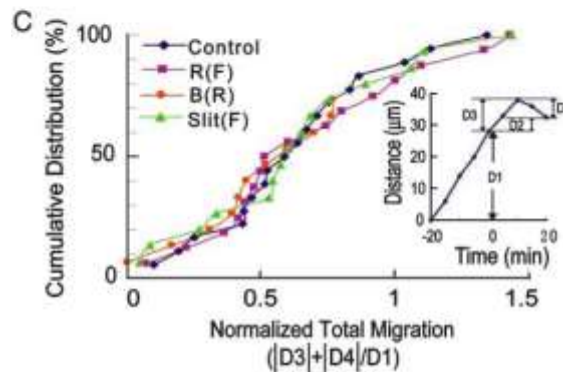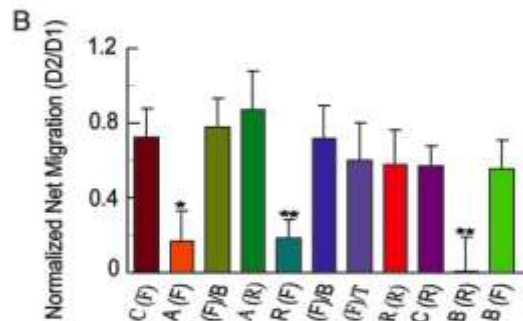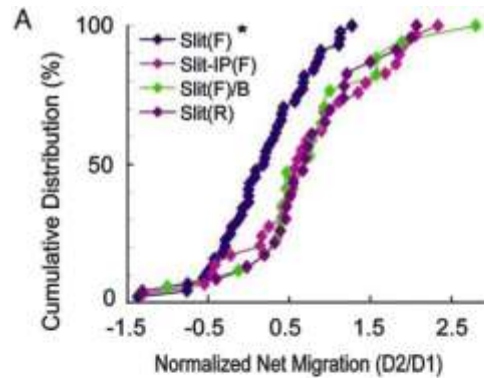
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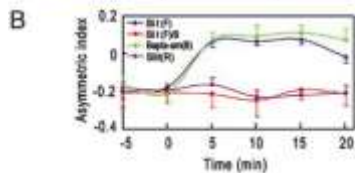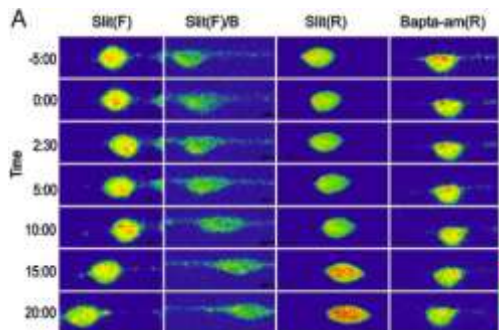
Slide Transitions

- Be judicious using transitions
  - Avoid distracting styles
- *Fancy* & *involved* transitions should be avoided in science talk

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Presentation

- **Starting your Presentation**
  - Starting can be difficult
  - Memorize the first few lines (if this helps you)

  1. Introduce yourself
  2. Mention that you are excited/grateful for the opportunity
  3. Thank & acknowledge the other authors
  4. State the purpose of your presentation and connect it to the audience

Presentation

- **Ending your Presentation**

Presentation

- **Ending your Presentation**
  - Return to the central purpose

  - Present key points

  - Include a graphic

  - Ask if they have questions

  - Thank them for their time

Presentation

- **Rehearse your Presentation**

Vader used to practice in front of the mirror for hours.

Presentation

- **Preparing & Giving your Presentation**
  - Know your audience

  - Prepare a compelling story

  - Use slides & visuals effectively

  - Practice your delivery

Presentation Content

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X. References (and as needed in each slide)

Assignment 7

- **Oral Presentation**
  - Your team will prepare a 12-15 minute oral presentation with Google Slides, PowerPoint, or Prezi to present your proposal to the class
  - All members of the team must speak in the presentation (~4 min)

Assignment 7

- **Oral Presentation – Rubric**

Student Name_____	5 Points	4 Points	3 Points	2 Points
	High Professionalism	Professional	Participation	Unprofessional
Well Prepared				
Communicated Clearly				
Physical and verbal delivery				
Logical delivery of information				
Effective use of visual aides				
Required content presented				
Demonstrates understanding of the subject				
Applied concepts learned in class effectively				
Answered questions effectively				
Overall performance				
Comments				
Reviewed by				

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References

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Becoming an Effective Presenter

Clear Goal + Solid Preparation + Practice = Speaking Success

Becoming an Effective Presenter

- The Speech
  - Write down your presentation speech!

Becoming an Effective Presenter

- **Allocate Time for Preparation**
  - Takes time to make a good presentation
  - Do not start your preparation in the last minute
  - Plan your content
  - Don't ever wing it!

Becoming an Effective Presenter

- **Why is practicing a good idea?**
  - Gain confidence
  - Work through transitions
  - Ensures focus on key ideas
  - REALLY important for short talks

Becoming an Effective Presenter

- Takes practice and many opportunities to become an excellent presenter

- Learning & practicing key principles early on will facilitate this process

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Becoming an Effective Presenter

▪ **Practice**

- – Inspire trust and confidence

- – Stand up in a room and deliver your presentation

- – Familiarize yourself with the words in your talk

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Becoming an Effective Presenter

- **Practice**
  - **Know your main argument** and explain how the elements of your presentation fit together

  - Find a compromise between completely memorizing & reading notes

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Becoming an Effective Presenter

- **Asset Yourself**
  - Be assertive, not aggressive

- **Posture**
  - Show confidence
  - Match your physical postures to the objectives of your presentation

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Becoming an Effective Presenter

- **Connect with your Audience**
  - Establish links with the audience
    - To maintain an audience's interest
    - To demonstrate that you are genuinely interested in talking to them

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Becoming an Effective Presenter

- **Connect with your Audience (cont.)**
  - Make eye contact with all members of a small audience and all areas of a large audience
  - If you can't make eye contact in a large group, try looking at people's foreheads

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Becoming an Effective Presenter

- **Gestures**
  - Using arms and hands in a conversation adds emphasis and helps describe events
  - Use gestures to welcome your audience
    - Add emphasis to your main points

http://www2.le.ac.uk/offices/ld/resources/presentations/delivering-presentation

Becoming an Effective Presenter

- **Gestures (cont.)**
  - Use open gestures which move away from your body, toward your audience
    - Helps break any audience/presenter divisions
  - Avoid distracting your audience

http://www2.le.ac.uk/offices/ld/resources/presentations/delivering-presentation

Becoming an Effective Presenter

- **Verbally Acknowledge Audience**
  - Acknowledge your audience by making verbal contact
    - Ask if they can see and hear you (maybe?)
  - Check that lighting & sound levels on audio-visual equipment are satisfactory (Prior to talk)
  - Ask rhetorical questions that you can then answer (e.g. "How do we know this was true?" or "So, what does this prove?")

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Becoming an Effective Presenter

- **Verbally Acknowledge Audience (cont.)**
  - Give your audience an opportunity to ask questions or to clarify details

    - Encourages them to take ownership of your material

  - Draw an audience in with clear, focused questions

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Becoming an Effective Presenter

- **Welcoming Language**
  - Involve your audience

  - Ask questions (rhetorically) such as "What can we learn from this?"

  - Introduce your visuals by saying

    - "If we look at this slide we can see that .."

    - "The figure on this slide shows us that…"

Becoming an Effective Presenter

- **Voice**
  - Your voice is very flexible
  - Do not deliver the speech in **monotone**!

- **Volume**
  - Loud enough for your audience to hear clearly
  - Use voice changes with purpose:
    - A whisper can draw an audience in
    - A loudly spoken exclamation can make them sit up and listen

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Becoming an Effective Presenter

- **Pace**
  - The speed of your delivery should be easy to follow
    - Slightly faster might convey enthusiasm
    - Slightly slower can emphasis or caution

- **Pitch**
  - The pitch of your voice can be used with purpose
    - Pitch rises when asking a question
    - Pitch lowers when you wish to sound severe

http://www2.le.ac.uk/offices/ld/resources/presentations/delivering-presentation

Becoming an Effective Presenter

- **Breathe**
  - Always remember to breath steadily

  - Take a few deep breaths before you make your presentation

  - Slow down the pace of your presentation if needed

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Becoming an Effective Presenter

- **Have a Beverage**
  - Have a drink available if you are speaking for a long time
    - Ice-cold water will constrict your throat and affect the quality of your voice
    - Drink a warm (not hot) cup of tea to relax your throat and ease your speaking voice

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Becoming an Effective Presenter
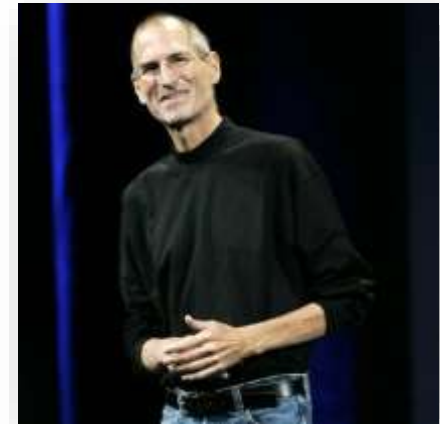
- **Is Humor Acceptable?**
  - Only use humor if you know it will work
  - Use humor if you know you can and if it is appropriate to do so

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F=ma

ANDERSON

"It's not a text abbreviation, it's a formula."

"Don't worry, I welcome stupid questions because I have plenty of stupid answers."

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Becoming an Effective Presenter

- **Delivering your Presentation**
  - Make eye contact
  - Smile
  - Do not sway
  - Use effective hand gestures to emphasize your points
  - Remember to pause

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