An Introduction to Oral Scientific Presentations

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The CLIMB Program

NORTHWESTERN
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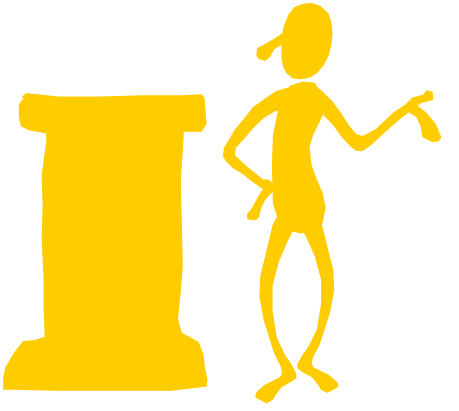
Preliminary Questions for Discussion:

- **What types of presentations will you have to prepare soon?**

- **Consider a presentation or poster that you recently saw. What positive features helped to communicate the presenter's ideas to you?**
- **What are some of your pet peeves from scientific presentations?**

Outline and Schedule

- **Oral Presentations**
  - Preparations before the talk
  - Delivery during the talk
  - Feedback after the talk
  - Examples, common errors, resources
- **Posters**



- **Winter and spring quarters**
  - practice; video record
  - visual display of scientific information

Consider your goals and the context for your talk or presentation

- **What do you want to communicate?**
- **What do you want to achieve?**

- **Types of presentations**
  - research seminar
  - lab group meeting
  - poster presentation
  - chalk talk
  - job talk
  - informal group meeting
  - leading a discussion

Consider your audience

- experts, non-experts but scientifically literate
- undergrads, grad students, postdocs, faculty, general public, etc
- lab group members
- potential employers

- Your audience really drives what you need to communicate and how, i.e. your content, style, dynamics, etc

Consider your audience's Myers-Briggs types

- **Myers-Briggs Types:**
  - Introvert/Extrovert: where do you get your energy?
  - Sensing / iNtuition: how do you gather information?
  - Thinking / Feeling: how do you make decisions?
  - Judging / Perceiving: how do you interact with your environment?
- **Communicate to S types**
  - provide the facts and details
  - use visual displays
- **Communicate to N types**
  - provide the big picture and goals
  - tell stories
- **Communicate with a broad range of styles and approaches**

Tell an engaging story - use the CCQH approach

Context

- **introduce the main ideas that your audience will easily accept**
  - explain why your work is significant

Complication

- **present the problem or twist in the story, that should lead to a compelling question**
  - tell what we know and don't know

Question

- **clearly state and specify the question that addresses the problem**

Hypothesis

- **propose a clear, testable hypothesis that will advance our understanding**
  - your hypothesis then provides the focus for the rest of your presentation

Preparing Slides

- **what's the big picture or problem?**
  - talk through the presentation with a friend (for extroverts and introverts)
  - write an outline of key points
- **write notes for each slide**
  - main points
- **create the title near the end of your preparations**
- **you can be creative, but not "cute"**
- **organize your slides**
  - outline (optional), intro, problem, methods, results, conclusions, acknowledgements, funding

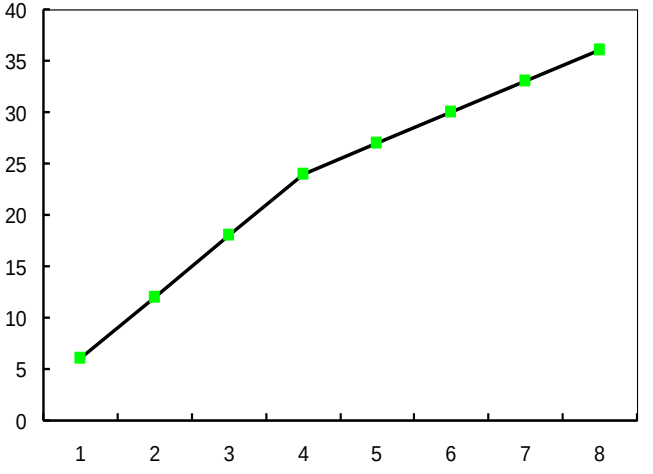
Creating Slides

- **Plan to spend ~2 minutes per slide**
  - 10 min talk: 5-7 slides
  - 60 min talk: 25-30 slides
- **put additional slides in end in case for questions or extra time**
- **minimize text**
  - use bullet points; full sentences are not always needed
  - but write complete thoughts
- **maximize visuals: pictures, graphs, tables, etc**
- **Maximize the "info to ink ratio" – provide the most amount of info with the least amount of ink**

Creating Slides

- number and/or outline slides, esp. for long talks
- avoid distracting slide designs
- use a consistent design and format for all slides
- consider the medium for presenting data

X	Y
1	6
2	12
3	18
4	24
5	27
6	30
7	33
8	36



Creating Slides

- **use sans serif fonts**
  - not sans serif: Times New Roman 
  - Arial
  - Helvetica
- **organize experiments for clear communication**
  - trials done in lab
    - trial A; trial B; trial C; trial D - successful
  - during a presentation
    - chronological order: A, B, C, D
    - logical order: D and A, B, C
  - don’t drag the audience through useless information

Rehearse Your Talk

- **Practice is key to a successful presentation**
- **rehearse by yourself and in front of friends**
- **videotape and watch yourself**
- **rehearse in the exact room for your talk**
- **check your images and animations**
  - Mac vs PC (create a pdf if needed)
  - test your slides on the actual projector
- **time your talk**
- **rehearsing helps decrease nervousness**
- **attend other talks and pay attention to their delivery**

Delivery of Your Talk

- **optional: memorize your first slide or two**
  - have your words written out
- **briefly introduce each slide**
  - purpose
- **refer to your slide**
  - talk through each slide, especially for data
  - your spoken words should correlate with the slide
  - but don’t simply read each slide
- **watch the time**
- **be concise and complete**
  - present only what is truly essential and relevant
  - present the whole story

Delivery of Your Talk

- ***common mistake*: going too quickly**
  - teach or explain your topics thoroughly
- **avoid distractions: empty your pockets, turn off phone**
- **face the audience, not the screen**
- **don't block the view of the screen**
- **if handouts, distribute them before or after, *not during* your talk**
- **speak loudly and clearly**
- **repeat key points and full terms of abbreviations**
- **express your enthusiasm in your topic**

Delivery of Your Talk

- **behaviors to avoid**
  - "um", "uh", "like", "OK", etc
  - fidgeting with pointer
  - covering mouth
  - nervous laughter
  - pacing

- **when handling questions:**
  - be polite; actually answer the question
  - be willing to admit that you don't know
    - "That's an interesting question. I honestly hadn't thought about that, but it seems to me…"
  - it's OK to ask for a question to be clarified
  - practice will help you to anticipate questions and think on your feet

Getting Feedback and Improving

- **ask friends to give you honest feedback**
  - learn how to receive criticism
  - practice “failing” and trying again
- **video record and watch yourself**
- **help someone else practice and give feedback**
- **seek more opportunities to give talks**
- **develop your own style of presenting**

Summary

- **prepare in advance**
  - Preparations often take longer than you might think!
- **consider what the audience needs to hear**
  - practice speaking to a broad audience
- **practice, practice, practice!**
- **seek feedback and more opportunities to give talks**
- **Developing your oral communication skills will also sharpen your scientific skills.**

Additional Resources

- **"Making Oral Presentations: Dealing with Nervousness"**
  - BA Fischer and MJ Zigmond from the Survival Skills and Ethics Program at the University of Pittsburgh
- **"Creating Posters Using PowerPoint"**
  - Galter Health Sciences Library at Northwestern
  - will be posted on our Blackboard site

- **Edward Tufte**
  - "Visual and Statistical Thinking: Displays of Evidence for Making Decisions"
  - "The Cognitive Style of PowerPoint"