An Introduction to Oral Scientific Presentations

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The CLIMB Program
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

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Creating Slides

● use sans serif fonts
  ○ not sans serif: Times New Roman  AaBbCc
  ○ 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”