A Step-By-Step Guide for Creating Effective Technical Presentations

By Dr. Robyn Javier
STEM Communication Specialist and Lecturer
Division of Engineering & Applied Science

STEP 1: STRATEGIC "TAG" PLANNING

Before you begin working on your presentation, consider what you're doing and why! Do this by answering the "TAG" questions (type, audience, goal).

What TYPE of presentation is it? *Consider format (e.g. poster, PPT), context (e.g., conference, group meeting, seminar), and expectations (e.g., time limit)*	
Who is the AUDIENCE? *Who are they (e.g., faculty, peers in your sub-field, broader scientific community, etc.) and what do they know / care about*	
What is your GOAL? *(e.g., to get feedback on your research findings, persuade people to support your proposal, etc.)*	

STEP 2: CENTRAL MESSAGE

When planning the content of your presentation, start by drafting a central message. This should be a clear, concise sentence that captures the essence of your entire talk (it's not just a topic statement – it's the *answer to a specific question about that topic*).

NOTE: This statement might evolve as you get further along in developing your presentation, but it's helpful to create a draft as a reference very early in the content planning process.

Central Message *(one sentence only)*:

STEP 3: OUTLINE

Next, begin creating an outline for your presentation. Consider **what type of story you want to tell** (e.g. problem-solution, iterative/chronological process, etc.) and **how that story can be broken down into sections**. Your goal at this stage is to ensure that the story flows logically and that the details are aligning with your central message. Also, remember the hourglass structure and your strategic TAG plans when deciding how much detail to include and where.

The following template is a common way to outline an academic talk:

- **Introduction**
  - Significance of topic (audience-specific!)
  - Necessary background info to orient your audience to the topic / problem
  - Central message
- **Body**
  - Section 1 key takeaway (should align with your central message)
    - Supportive details (try to keep details focused within each section)
  - Section 2 key takeaway
    - Supportive details
  - Additional sections as appropriate
- **Conclusion**
  - Summarize what you presented and why it matters
  - Optional: talk about what's next / future directions

STEP 4: STRATEGY CHECK

Before you proceed with developing your full presentation, look back at the content you've created so far and check it against your strategic plans:

What TYPE of presentation is it? *Consider format (e.g. poster, PPT), context (e.g., conference, group meeting, seminar), and expectations (e.g., time limit)*	☐ Does the planned presentation work within the required format? ☐ Is the amount of content reasonable for the presentation time limit?

Who is the AUDIENCE?	☐ Is the level of detail appropriate for your audience?
Who are they (e.g., faculty, peers in your sub-field, broader scientific community, etc.) and what do they know / care about	☐ Did you include any technical terminology that may be jargon to them? ☐ Is the big-picture importance broad enough and relevant for them?
What is your GOAL? (e.g., to get feedback on your research findings, persuade people to support your proposal, etc.)	☐ Does the planned presentation meet your goal? ☐ Does the central message reflect this goal?

STEP 5: CREATE SLIDES

PowerPoint and other presentation software can be a powerful tool when wielded responsibly (or a terrible mess when used irresponsibly!). The goal is to have visuals that are ***useful*** (i.e., relevant, valuable) and ***clear*** (i.e., clean, easy to read, as simple as possible). Remember that your slides should complement your spoken words – *not* replace them. You want people to listen to what you're saying instead of reading a lot of text. And aim for ***ONE*** key takeaway per slide!

BEST PRACTICES FOR SLIDE DESIGN

TEXT	GRAPHICS
• Make text sufficiently large (depends on the room, but usually ≥20pt is good) • Choose a clean, sans serif font • Use highly contrasting colors for background vs. text • Limit word count (use bullets… but not too many, and no complete sentences!) • Use descriptive slide titles (should summarize key takeaway)	• Avoid gratuitous animation/effects • Use relevant visuals that add value • Keep it simple! (may require modifications to existing graphics) • Avoid information overload / visual jargon • Choose high-res images whenever possible • Consider color blindness • Try to include some visual variety

If dense information is ***truly*** necessary, consider ways to help guide the audience's attention:
- Reinforce content structure visually
  - Vary formatting
  - Break up text
  - Group related info
  - Use color-coding
- Direct attention with visual cues
  - Builds
  - Pointing (laser pointer, or walk right up to screen)
  - Highlighting

STEP 6: PRACTICE YOUR TALK!

The best way to practice your talk is out loud, with people who are as similar as possible to your target audience. This helps you fine-tune the level of detail, gauge pacing, and identify any trouble spots. This is also an opportunity to work on your presentation style.

Consider the following nonverbal and verbal factors as you refine your own personal style:

- **Posture**
  Stand up straight, with your hands out of your pockets and both feet firmly planted on the ground. A solid stance can help you feel more confident, avoid fidgeting, and breathe more freely (which improves your vocals).

- **Eye contact**
  Scan the room and engage everyone in the audience. A helpful variation if you're uncomfortable is to look at people's foreheads or just above their heads.

- **Movement**
  Try out different movements to find what feels natural. Avoid mindless, distracting movements like swaying and fidgeting. Utilize gestures where appropriate.

- **Attire**
  Dress appropriately for the context and audience.

- **Clear speaking**
  Enunciate and project so that you can be clearly heard. Find a comfortable pace and avoid rushing (if you find it's hard to fit your presentation within the time limit, trim content rather than speeding up). Don't forget to breathe!

- **Dynamic vocals**
  Use variations in tone, pitch, and pace to keep the audience engaged. Insert pauses to emphasize key points. Try to reduce filler words (writing out a script for certain parts of your talk – especially the intro, conclusion, and transitions – can help).

Remember: Everyone's presentation style is different, and it's not necessary (or sufficient) to be a loud, charismatic extrovert in order to be effective. One of the most effective ways to improve your presentation skills is to record yourself. While it can be extremely uncomfortable to watch/listen to yourself, it's invaluable for identifying strengths and weaknesses that you might otherwise overlook.

FINAL CHECKLIST:

☐ **Central Message**
Have a clear and compelling thesis statement / take-home message that is strongly supported by the details of your presentation. Make it stand out so your audience can easily identify it. For longer presentations, it may be helpful to state this more than once.

☐ **Organization**
- o *Introduction* – Set up the problem or topic, providing a level of background information that is appropriate for your audience.
- o *Body* – Present details about the topic / how you solved the problem, in a way that aligns with your central message and advances your story. In some cases, you may want to break out content into multiple sections. Just be sure it's organized in a way that the audience can follow (provide a roadmap if helpful).
- o *Conclusion* – Summarize what you presented and your take-home message. Return to the big picture of why it matters.

☐ **Content**
- o *Terminology* – Avoid jargon! Use language that is appropriate for your audience.
- o *Level of detail* – Tailor the amount of detail based on your audience and the goals of your presentation.

☐ **Visual Aids**
- o *Usefulness* – Choose visuals that truly add value to your presentation. They should be directly supportive of your story and align with your spoken words.
- o *Clarity* – Ensure that your visuals are clean, legible, and big enough to be seen from the back of the room.

☐ **Delivery**
- o *Voice* – Speak clearly and confidently. Project, enunciate, and be dynamic/expressive.
- o *Presence* – Make eye contact and be engaging (look more at the audience than your notes/slides). Convey confidence through posture and movement.

☐ **Time Management**
Complete your presentation within the amount of time allotted to you. The key is planning out the right amount of content to cover. You can find many helpful rules of thumb online (e.g., number of slides, word count, etc.), but the best way to know for sure is simple: practice! Use a stopwatch and deliver your presentation **out loud** to whomever will listen.