Speaking of Science

Janine Castro, Technical Director, PSU EPP River Restoration Program

❖ **What is a Presentation?**
1. You
2. Platform (Room, Zoom, Teams, WebEx, GoTo, Hybrid, etc…)
3. Time
4. Audiovisuals (sometimes known as "the presentation")
5. And, most importantly, the Audience

❖ **The Six Phases of a Presentation**

1. **Planning (MONTHS to weeks in advance)**
- Note the date in your calendar and back-calculate deadlines
    o Plan on 40 hours for a new 20 minute presentation
- Research the organization/client – find out the theme and/or specific request
    o Get feedback from the organizers on your topic, especially if you are an invited speaker
    o Find out if you must register for the conference/meeting
- Invited or self-inflicted?
    o Invited speakers are held to a higher standard and should spend more time preparing
- If you don't have the time to prepare, or if you have nothing to say – **JUST SAY NO!**
- What is your **Message**? ONE MAIN MESSAGE
    o Narrow your topic to a MAXIMUM of 3 important and relevant points
- Length of talk
    o The hardest – 5 to 15, no time to course correct during the presentation
    o The most common – 15 to 25
    o The easiest – 25 to 45, lots of time to adjust
    o The scariest – >45, too long to fully practice and generally requires an audience activity
- Audiovisual Aids
    o Will you be on video along with your slides, or will you be a "disembodied voice"?
    o Will your talk be pre-recorded or live?
    o Questions during or after?
    o Plan your talk BEFORE you open presentation software
- Audience
    o Experts, peers, lay audience, mix – ask the organizers
    o Politicians, decision makers, scientists, interested public
    o Cultural/ethnic diversity
    o Language barriers?
    o Size (<15, small, interactive group *vs*. 30+, passive audience)
- **READ ALL INFORMATION PROVIDED BY THE ORGANIZERS!**

2. **Designing (months to WEEKS in advance)**

- Write an outline
    - Title – short and memorable
    - Opening sentence
    - Message – one line
    - Three supporting points (at most)
    - Final Sentence
- Write a script if you are nervous – *turn it into an outline*
- Prepare your audiovisuals
    - CLARIFY, SIMPLIFY, DISTILL – *Brevity is the soul of wit, Shakespeare*
    - Video clips – short and relevant, be prepared for them not to work
    - Be "font consistent", avoid red and yellow
    - No photos behind text
    - Avoid equations unless you are teaching a technical course
    - Site lines – use the top ¾ of the screen for in-person & the central part of the screen for virtual
    - Get rid of redundant title blocks and logos
    - Get rid of bullet points
    - Make two versions – with and without text
    - Embed prompts or increase your pointer size/visibility and make sure participants can see it.
    - Peer review for content and flow
- Ask about the level of technical support – sound, lighting, monitoring the chat box, muting participants, moderators, timing prompts.
- Evaluate your presentation space:
    - Background
    - Sitting or standing, on a dais or at floor level
    - Lighting and sound, including headsets and supplemental lighting
- Request abstracts from adjacent speakers
- Develop your own evaluation form if not provided by the organizer (for short courses)

3. **Practicing (weeks to DAYS in advance)**

- Peer review for typos and clarity
- Send your concise bio – the moderator will likely read it verbatim and/or it will be posted on the organization's website
- Send the organizers a copy of your materials, even if they don't ask
- Brainstorm potential questions and generate some answers, plan to seed some questions
- **Memorize** your opening sentence
- **Memorize** your MESSAGE!
- **Memorize** your final sentence
- **Memorize** the order of your visuals
- **Practice** out load – to an audience if possible – PRACTICE, PRACTICE, PRACTICE
- Try out the Presentation Coach in Power Point

4. **Preparing (days to HOURS in advance)**
- The day before your talk:
    - **STOP** working on your audiovisuals – print out a hard copy for easy reference
    - Copy your presentation to a USB and the cloud
    - Email it to yourself and then you can bring it up on your phone to practice
    - Sleep and hydrate
    - Choose clothing that is "quiet" and comfortable – darker solid colors with good contrast
    - Review the order of your slides
    - Give yourself plenty of preparation time
- The day of your talk:
    - Make sure your moderator has your bio and can pronounce your name
    - Test your system by sharing your screen
    - Check all videos – allow them to buffer before your talk
    - Check lighting and sound -- avoid backlighting and audio feedback
    - Attend earlier sessions if possible, especially a keynote address – make notes
    - Arrive early to your session
- **REVIEW THIS CHECKLIST!**

5. **Delivering**
- At your computer or on the dais – cup of water (not bottles), half full, no ice; cough drops; notes; watch/clock
- Audio – mute phones/alarms/smart watches. Use a headset if you have ambient noise (virtual)
- Visual – no reflective surfaces, check buttons and zippers, ensure that your torso is visible
- Take a deep breath and pause before starting – there is no rush
- Start with your opening sentence and main message
- Reintroduce yourself if necessary, only after the opening sentence
- Voice
    - Words – keep them short and simple
    - Tone and volume – the verbal strobe light, move your arms to change your voice
    - Inflection – avoid monotone
    - Pace – slow down, slow way down…
    - Pauses – the dramatic effect
    - No artificial fillers (ums, ahs, etc.) – the words that steal your time to use "the pause"
    - The Black Screen – or the "visual pause"
    - If you must rely on a script – "See – Stop – Say"
    - NEVER speak while looking down unless you are reading a quote
- Style – it makes you human
    - Make a connection and generate empathy – tell a story
        - Personal experience, current events, or local reference
    - Humor – put the audience at ease
        - Avoid sarcasm, religion, politics, alcohol references, foul language
    - Respect your audience

- Body language – scale to the audience
  - Grotesque, truth, passion, and ecstatic planes – use to affect your voice
  - Watch your audience for immediate and unfiltered feedback
- Eye contact – look at your audience/camera as much as possible, not the screen
- Props – books, cups, example materials
- Say "thank you" so the audience knows when you are done
- Questions
  - Respect the audience, give them a chance to ask questions 75:25
  - Stop sharing your screen so that you can see everyone and they can see you
  - **LISTEN**
  - Restate the question – repeat if positive, paraphrase if negative
  - Respond simply and directly
  - Say "I don't know" – don't bluff

6. **Evaluating**
- Ask someone in the audience how you did – ask them beforehand to evaluate
- Send a follow-up e-mail with a self-evaluation
- Read the evaluations
- Ask for advice
- Make notes to yourself about how to improve
- Critically evaluate other speakers – note what you like and dislike
- Watch a recording of your presentation
  - Listen first
  - Watch second
  - Listen and watch
  - Video from afar, moderate distance, and then up close

❖ **Interested in further improvement?**
  - Anholt, R.R. 2006. Dazzle 'em with Style: The Art of Oral Scientific Presentation, 2nd Ed. Elsevier Academic Press.
  - Asher, J. 2001. Even a Geek Can Speak -- low-tech presentation skills for high-tech people. Longstreet Press, Inc. Marietta, GA. (*Written for the high-tech industry, but useful when you are trying to convey a complex idea to a broad audience.*)
  - Baron, N. 2010. Escape from the Ivory Tower: Your Guide to Making Your Science Matter. Island Press.
  - Berkun, S. 2010. Confessions of a Public Speaker. O'Reilly Media, Inc. Sebastopol, California. (*Janine Castro's personal favorite! Great for somewhat seasoned speakers who want to improve their skills. Wonderful section at the back about dealing with a variety of difficult situations – like when the audience hates you…*)
  - Bowden, M. 2010. Winning Body Language – control the conversation, command attention, and convey the right message – without saying a single word. McGraw Hill, New York. *(Excellent primer on body language that is useful everywhere and with everyone. Beware, you might be tempted to read the entire book in one sitting!)*
  - Carter, M. 2013. Designing Science Presentations. A visual guide to figures, papers, slides, posters, and more. Academic Press. (*Janine Castro's newest favorite! A great resource for designing great slides with practical advice and examples*)
  - Chambers, H.E. 2001. Effective Communication Skills for Scientific and Technical Professionals. Perseus Publishing.
  - Dean, C. 2009. Am I Making Myself Clear? A Scientist's Guide to Talking to the Public. Harvard University Press.
  - Olson, R. 2009. Don't Be Such A Scientist – talking substance in the age of style. Island Press, Washington. *(Scientist becomes filmmaker. A huge wake-up call that not only do we need to DO good science, we also need to COMMUNICATE good science.)*
  - Reynolds, G. 2019. Presentation Zen: Simple ideas on presentation design and delivery. New Riders.
  - Walters, D.E. and G.C. Walters. 2011. Scientists Must Speak, second edition. CRC Press, Boca Raton, FL. (*A book in two parts – preparation and delivery. A solid review of public speaking fundamentals specifically for scientists.*)
- Watch TED talks -- https://virtualspeech.com/blog/ted-talks-public-speakers-should-watch
- Take a free graphic design online course, such a Visme, Udemy, or Alison, along with many others.