How to give a technical talk?

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Sources

- Paul N. Edwards, “How to give an Academic Talk”.
- John E. McCarthy, “How to Give a Good Colloquium”.
- Uri Alon, “How to give a good talk”.
- P.R. Halmos, “How to talk Mathematics”.
- Inputs from Eric Nordberg
- Personal experience
Talk flows in you

“Tell ‘em what you’re gonna tell ‘em; tell ‘em; and tell ‘em what you told ‘em”.
- Aristotle

● Why?
● For Whom?
● What? How?
● How long?

Alternative: Show them the fire and sell the fire extinguisher. A story to remember!
Purpose

Whose talk is it anyway?
Finding your purpose

- “To attract and inform”

- Why must I give this talk?
  - To please my mentor/organizer?
  - To impress my labmates/colleagues?

- What can I use this talk for?
  - To get the audience excited about a research area/problem...
  - To inform fellow researchers about our findings...
  - To invite healthy criticism and suggestions...
Ask not what your talk does for you!

● An effective talk must:
  ○ Communicate your arguments and evidence
  ○ Persuade that they are true, and why the audience must care
  ○ Be interesting and entertaining

● Your work/idea is the product.
● Talk is your sales pitch!

*Every boring technical talk is a wasted opportunity.*

“What if we don’t change at all ... and something magical just happens?”

Source: fourquadrant.com
Audience

For whom does the speaker toil?
Harvesting the attention

- Listening is hard work!
- Talk ≠ Monologue. Talk = Conversation.
- Look at them. Talk to them.
- Own the floor.
  - Don’t be intimidated.
  - Don’t try to impress with your brilliance.

- Handling questions
  - Repeat, acknowledge, answer/accept
Trees and the Forest

● Carry everyone along.
  ○ Talk is not just for your mentor.
  ○ You lose the audience only once.

● > 50% of the time: General audience
  ○ Background and context
  ○ Why is this important and interesting
  ○ Why should they care?

● < 50% of the time: Expert audience
  ○ More details on the first half
  ○ Particular contributions
Content

What do you have to say for yourself?
Not a pie-eating contest

- Have a premise. Make a point.
  - Think in terms of a punchline or a take-home message.
  - Expand, argue, and persuade.
  - Talk ≠ Paper. Be precise and concise.

- You, and only you, are responsible for your presentation.
  - Proof-read typos, factual errors, etc.
  - Be ready to defend every sentence.
  - Add references for anything that is not yours. (ideas, text, figures)
Sights and Sounds

- Make sure your slides look good when projected.
  - Fonts, colors, sizes, etc.
- Maintain a healthy text-to-images ratio.
- Use animations/transitions wisely.
- Test out additional features (videos/software demos, etc.)

- Talk, don’t read.
- Speak slowly. Be loud and clear.
- Move around, vary the pitch, get them excited.
Show and tell!

- Use diagrams to explain complex ideas.
  - System description, methodology, etc.
- Use plots and charts to show quantitative results.
  - Label every axis in every chart
  - Units when applicable
  - Elements distinguishable by color, linestyle
  - Use the caption effectively.
Time

tic toc ✓ talk!
Wibbly-wobbly timey-wimey

- Pace your talk and finish on time.
- Theory of relativity: Time runs faster/slower than for the audience.
- Slides are not there to be skipped.
- # of slides < # of minutes
- Be prepared for interruptions.
- Factor in questions.
- Practice. Practice. Practice.
- Dry runs are useful.
- If you want to improvise, practice it!
Make a PACT.

Make an IMPACT.

Purpose
Audience
Content
Time