Science Communication

a practical 3-hour workshop
focus: speaking for an audience

Catarina Espírito Santo (LIP-ECO)
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Science Communication tutorial

- **SciCom in a nutshell**
  - What, who, why, how?
- **On your feet in front of a live audience**
  - Tips on preparing and delivering a talk for different publics
- **Doing instead of talking about it**
  - practical exercise
- **Wrap-up**
  - Comments and discussion

SciCom in a nutshell

What

Communication [noun] “the imparting or exchanging of information by speaking, writing or using some other medium (...) the successful conveying or sharing of ideas and feelings” ***(Oxford Dictionary)***

Who

Science Journalists
Scientific institutions
Scientists

Science plays an important role in modern societies and is part of the human cultural heritage.
It must to be shared with citizens and has great stories to tell!

Why

Meet requirements of funders | Moral imperative | Gives you transferable skills | Immediate reward | Increased impact and appreciation | Look at your research from different perspectives | Fun

SciCom in a nutshell

How

Communicating with peers

Supervisor | Group/team members | Collaborators (same field?) Industry | Funding agencies | …

Papers | talks | posters | reports | grant applications | ...

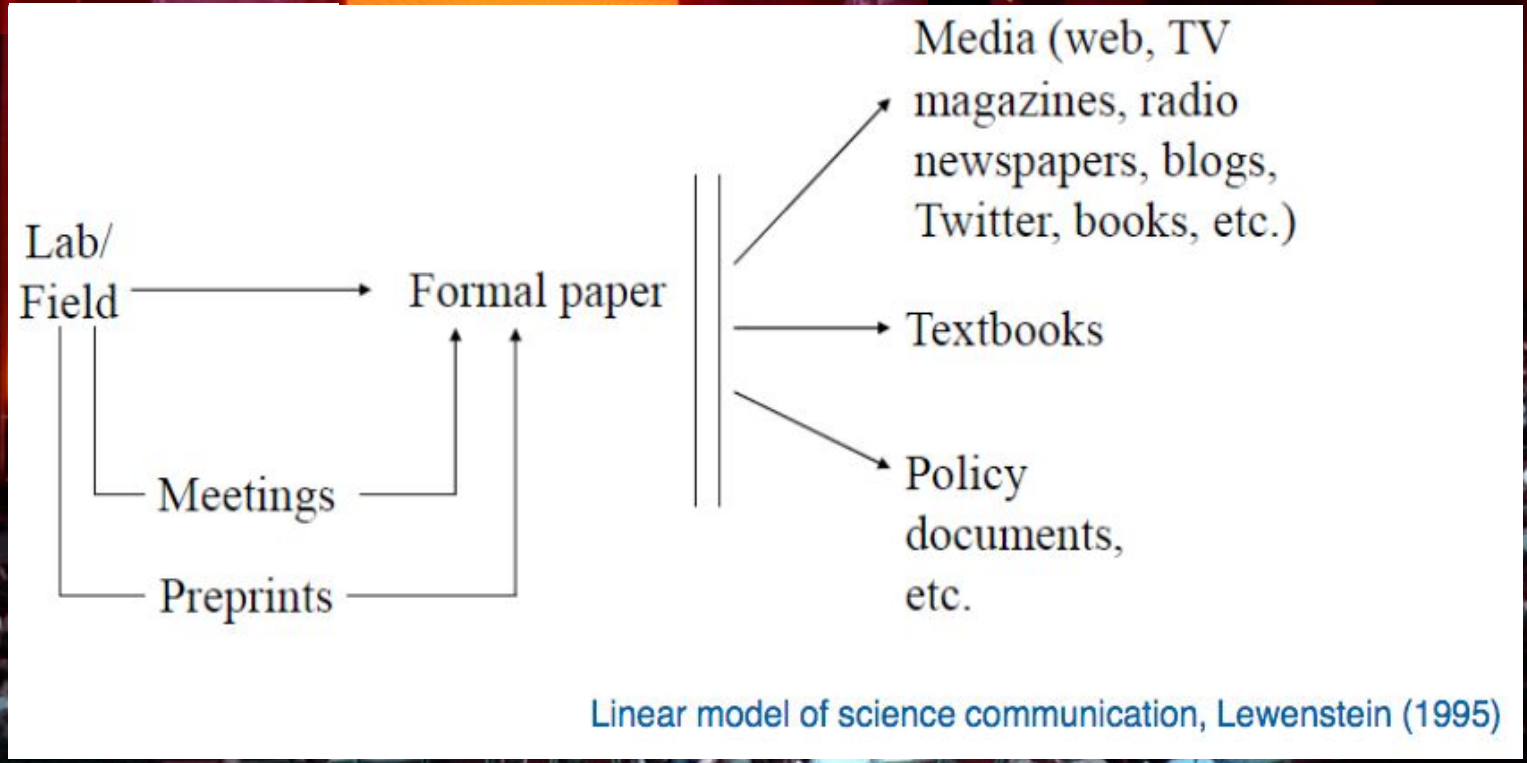
Communicating beyond peers

Policy makers & Governments | School community | "General public" | Children | Teenagers | Media & Influencers | ...

News stories | Science books | Exhibitions | Open days | Websites & blogs | Social media | Debates | Science and Art events | Entertainment media | Games | ...

SciCom in a nutshell

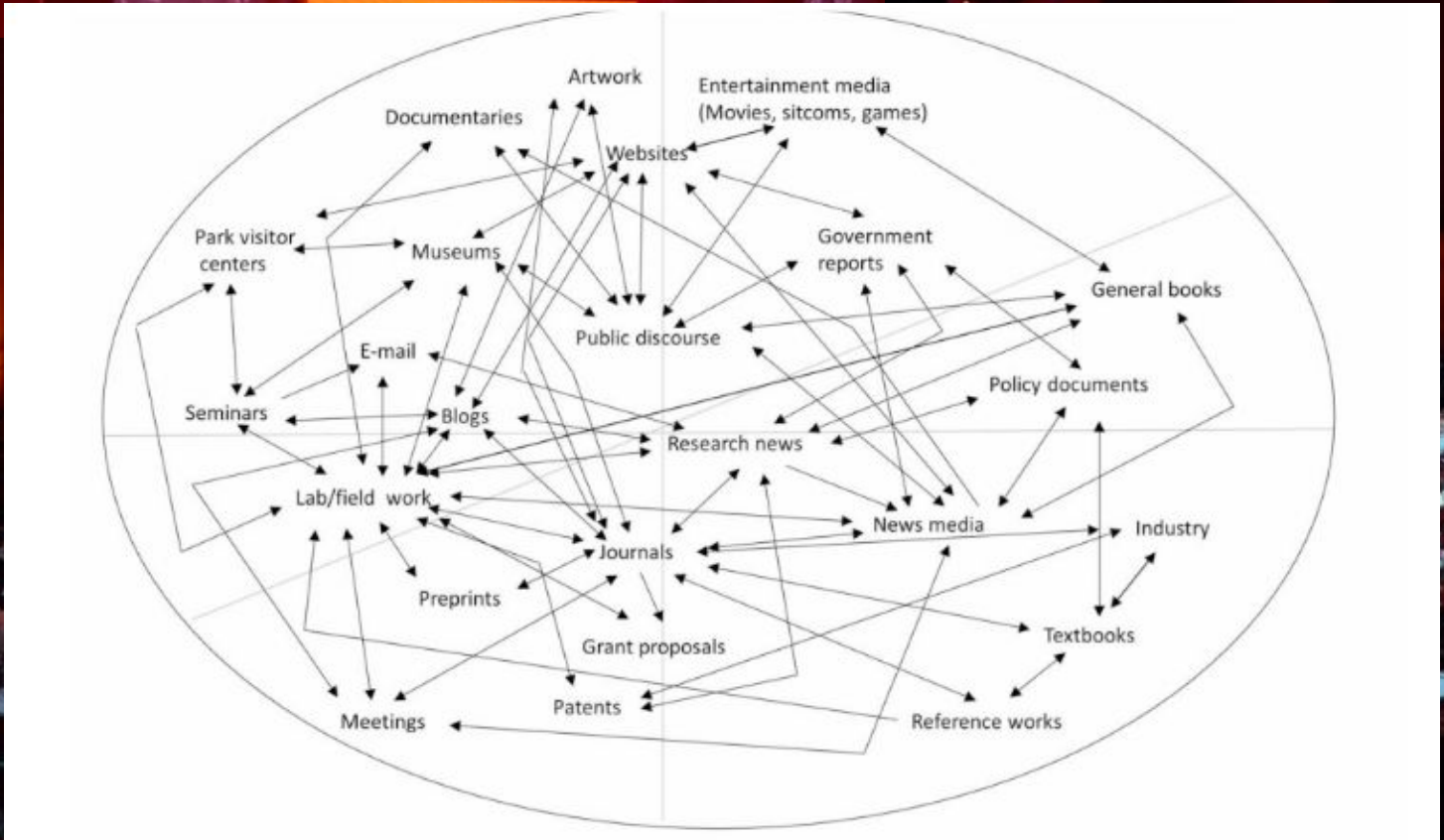
How



Linear model of science communication, Lewenstein (1995)

SciCom in a nutshell

How



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Tips on

Preparing and delivering a talk for different publics

Start by looking at the idea or subject of your talk from all sides

- *What is it about?*
- *Why does it matter?*
- *What is essential about it?*
- *How is it part of the big picture?*
- *What can I cut? (don't try to say it all!)*

Write down a word or topic that is the core of it

What is the most important thing,
the through-line or the bottom line?

- A connecting theme/idea that runs through it all

- A take-home message you want people to remember

- Sometimes it fits best at the beginning

- Can you make it intriguing, or surprising? Great!

Write it down (in less than 15 words)
make sure you say it explicitly and
write it in your slides (if you are using slides)

Focus on your audience to shape the message

- What do they know / don't know?

need / don't need to know?

want / don't want to know?

- What change do you wish to cause?

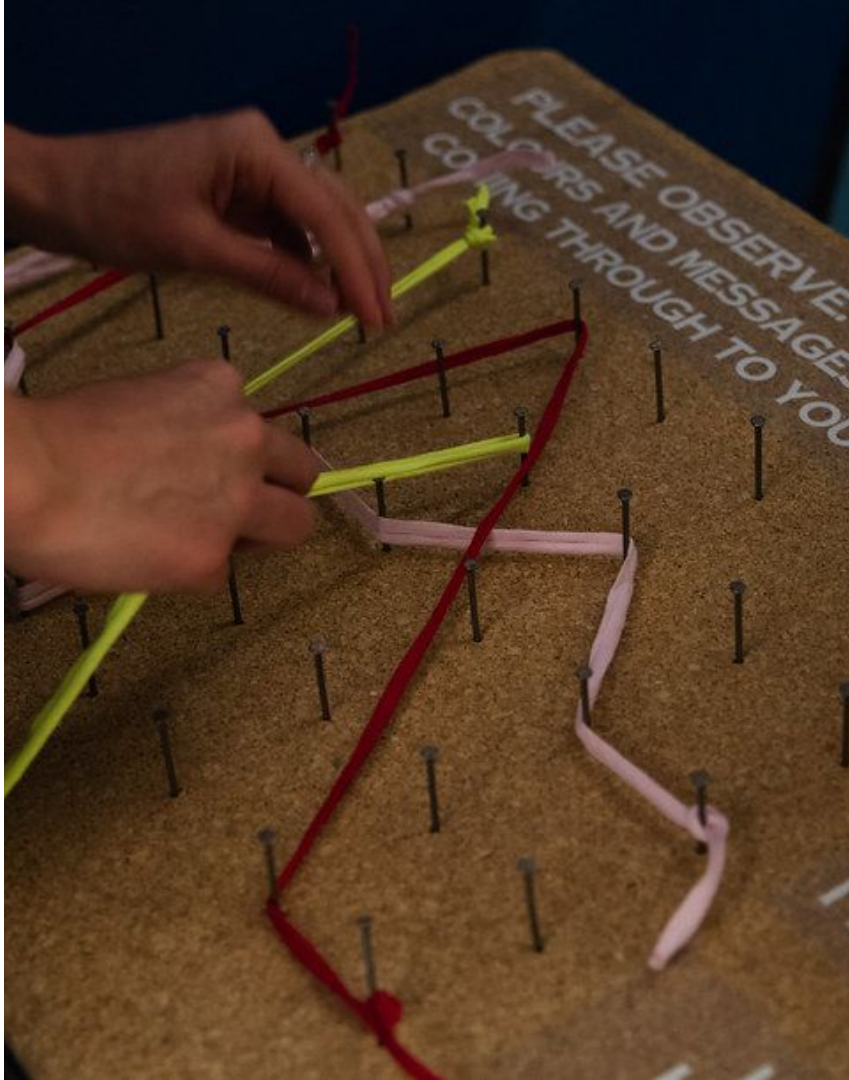
(knowledge, attitude, action)

Level: don't aim too high or too low

Simplify: be accurate, not detailed

Language: don't use jargon

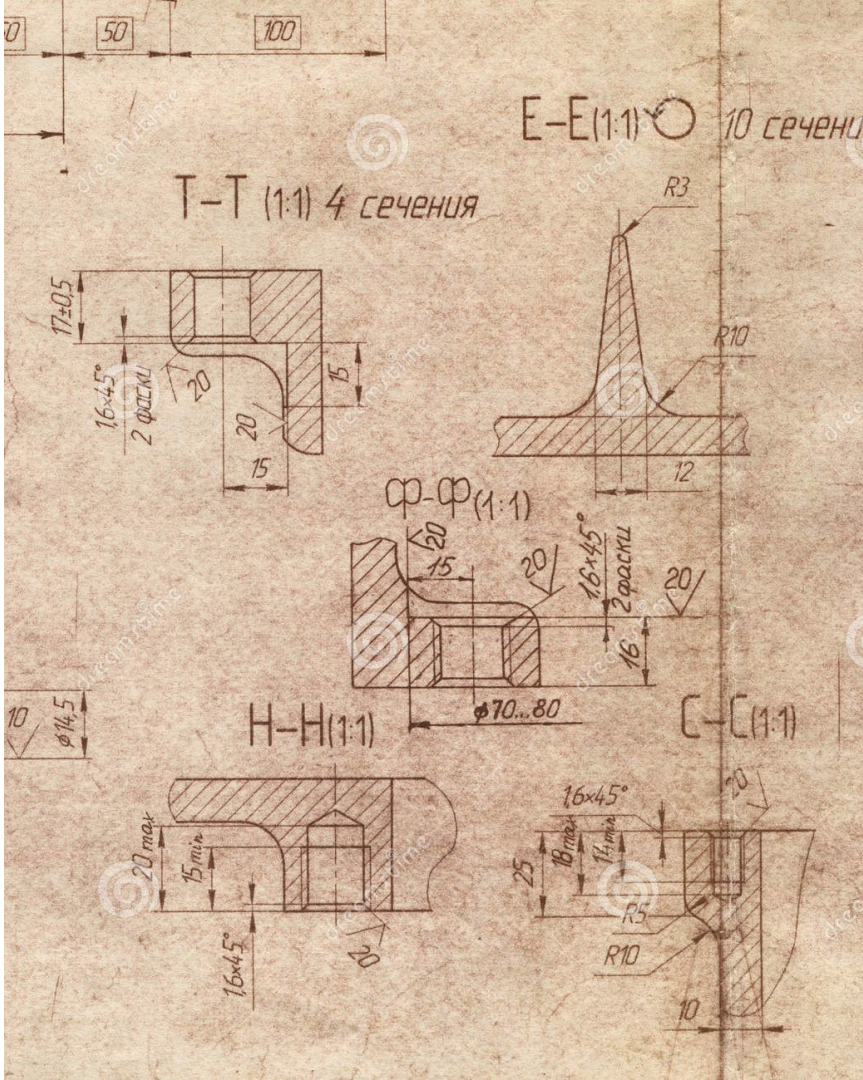
Say more about less



Plan and structure your talk beforehand

- *Manageable parts or steps make it easier to follow (use a simple, repeatable structure)*
- *Best sequence depends on the audience*
- *Help your audience, don't lose their attention while they try to figure things out*

Structure your talk beforehand:
content, sequence, parts
Make it clear and easy to follow



Connect with your audience, give this time and thought!

- *Make eye contact*
- *Interact: ask questions everybody can answer*
- *Use Props*
- *Share experiences, create confidence*
- *Friendly, sincere and humble attitude*
- *Humour: not necessarily a good idea*

End well: thank the audience!

Storytelling: stories are vehicles for our messages and ideas

- *Stories are the best way to take in information*
- *There are stories in science!*
- *Storytelling is the key to engage with wider audiences*

Using storytelling in your talks:

1. *Include actual stories: illustrations, examples, analogies, annedocts, events from your life*
   or
2. *Use storytelling techniques: include some of the elements of the story to make it more story-like*

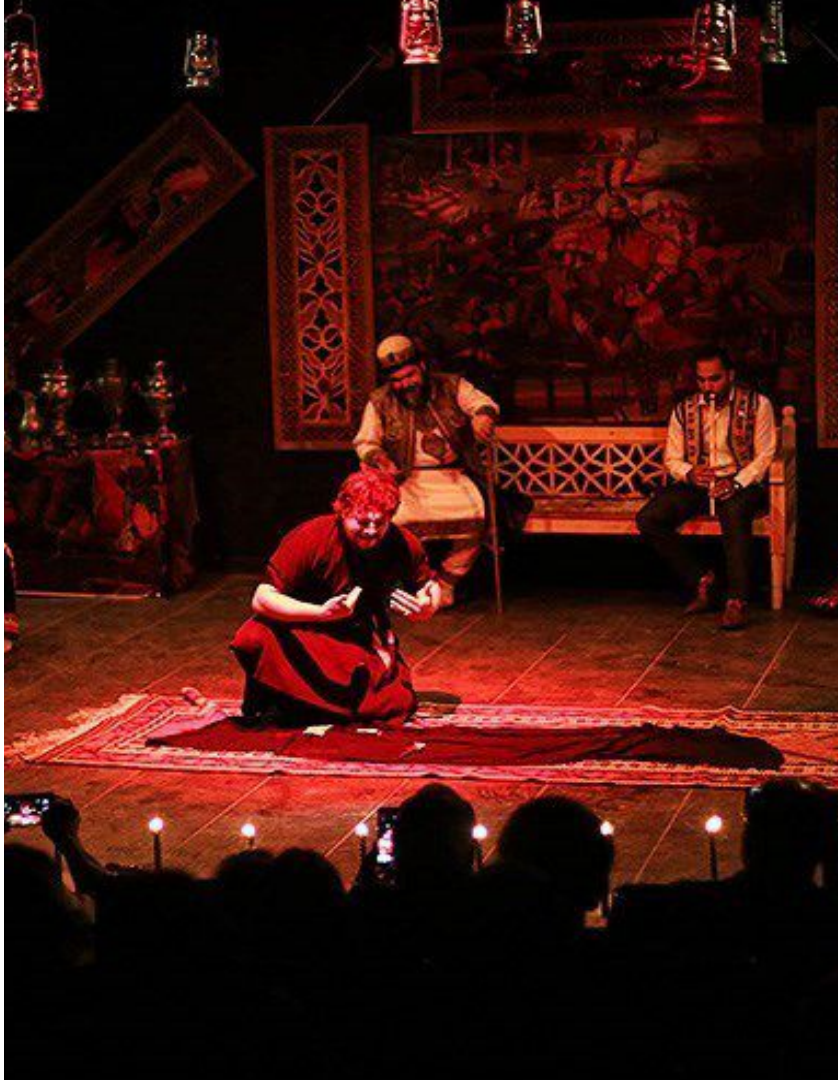
Storytelling: what are stories made of?

- *Conflict (science is about overcoming difficulties)*
- *Characters (often non-human, give them depth)*
- *Complexity and Structure:*
  - *ups and downs, emotion, surprise*
  - *stories must be focused (take the boring bits out)*
  - *stories must Include details that are relevant or engaging (sensorial info helps build mental picture)*
- *Closure*

Body language plays a role in comms and should serve content well

- *Gaze/eye contact*
- *Opened vs. closed body language*
- *Movement (stand v.s walk, hands)*
- *Tone of voice*

On stage: “be yourself, just bigger”
A critically supportive “mirror” is useful
Breathing and voice exercises are useful
Prepare the talk by talking, and experiment!



Tips on

Preparing a 10-15 minutes, slide-based presentation for your colleagues

Make your talk compelling and easy to follow

Organize your facts into a story; Divide the talk into 4 clear parts and articulate them
The audience retains little info; if you overdo it, they will be overwhelmed and bored

1 Introduction

Why is this important
What we know/don't know
Question addressed and goal

cover + 1 slide
2-2.5 minutes

2 Methods

Focus on the audience
from broad to specific
Sharply defined. Use diagrams

2 slides
1-1.5 min/slide

3 Results

Must match methods description
Clear labels in graphs, tables, schemes
Don't get bogged in data description

5 slides
bulk of the talk

4 Conclusions

One conclusion slide
All research leads to new questions
→ one "next steps" slide

2 slides
+ thank you slide

Choose carefully the slides and their content

The headline should say what the slide is about

One slide = One message

- Be sure to state that ideia on the slide
- Condense it into one sentence elaborate in your speech
- Less content on your slides, more focus on you
- Prepare handouts, know the material

Make it clear and interesting

- Choose carefully the words
- Mix up your approach: use surprise, interesting visuals, design,...
- Don't get the audience distracted trying to guess things
  - Use diagrams, annotate them (labels, arrows, numbers, ...)
  - use word tables instead of bullets
  - use animations, otherwise they will just read through

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Some references

Olson, R. (2009). Don't be such a scientist: talking substance in an age of style. Washington, DC, U.S.A.: Island Press.

M. Love: Everything but the words, https://www.youtube.com/watch?v=ma10k4vZr0U

M. Love: Once upon a time in a lab far away, https://www.youtube.com/watch?v=jCsPcn_TgjI

Marie K. Norman: Talk the Talk: Improving Your Presentations Using TED Talk Principles, https://www.youtube.com/watch?v=eI_t5Z9ekj4

A 10-15 minute scientific presentation (parts 1 and 2), CLIMB - Collaborative Learning and Integratd Mentoring in the Biosciences, https://www.youtube.com/watch?v=kBfEvppvIvg, https://www.youtube.com/watch?v=-qkEGKWMHeg

Thank you!

LET’S INSPIRE PEOPLE