

# Communicating Science

TIPS FOR SCIENTISTS

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# Let's know each other

What are the keywords related to your research topic?

Join at [menti.com](https://menti.com) | use code **7942 6002**

Many years later, as he faced the firing squad, Colonel Aureliano Buendía was to remember that distant afternoon when his father took him to discover ice. At that time Macondo was a village of twenty adobe houses, built on the bank of a river of clear water that ran along a bed of polished stones, which were white and enormous, like prehistoric eggs. The world was so recent that many things lacked names, and in order to indicate them it was necessary to point.

Gabriel García Márquez, ***One Hundred Years of Solitude***

Describe the Colonel Aureliano Buendía

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# AUDIENCE

Related link (article in italian): [L'cent'anni di solitudine del comunicatore](#)



Open day at the Astronomical Observatory (FMF UL) (photo M. Gosenca)

# MESSAGE





## **The Lead**

The most important information about an event  
Who? What? Where? When? Why? How?

## **The Body**

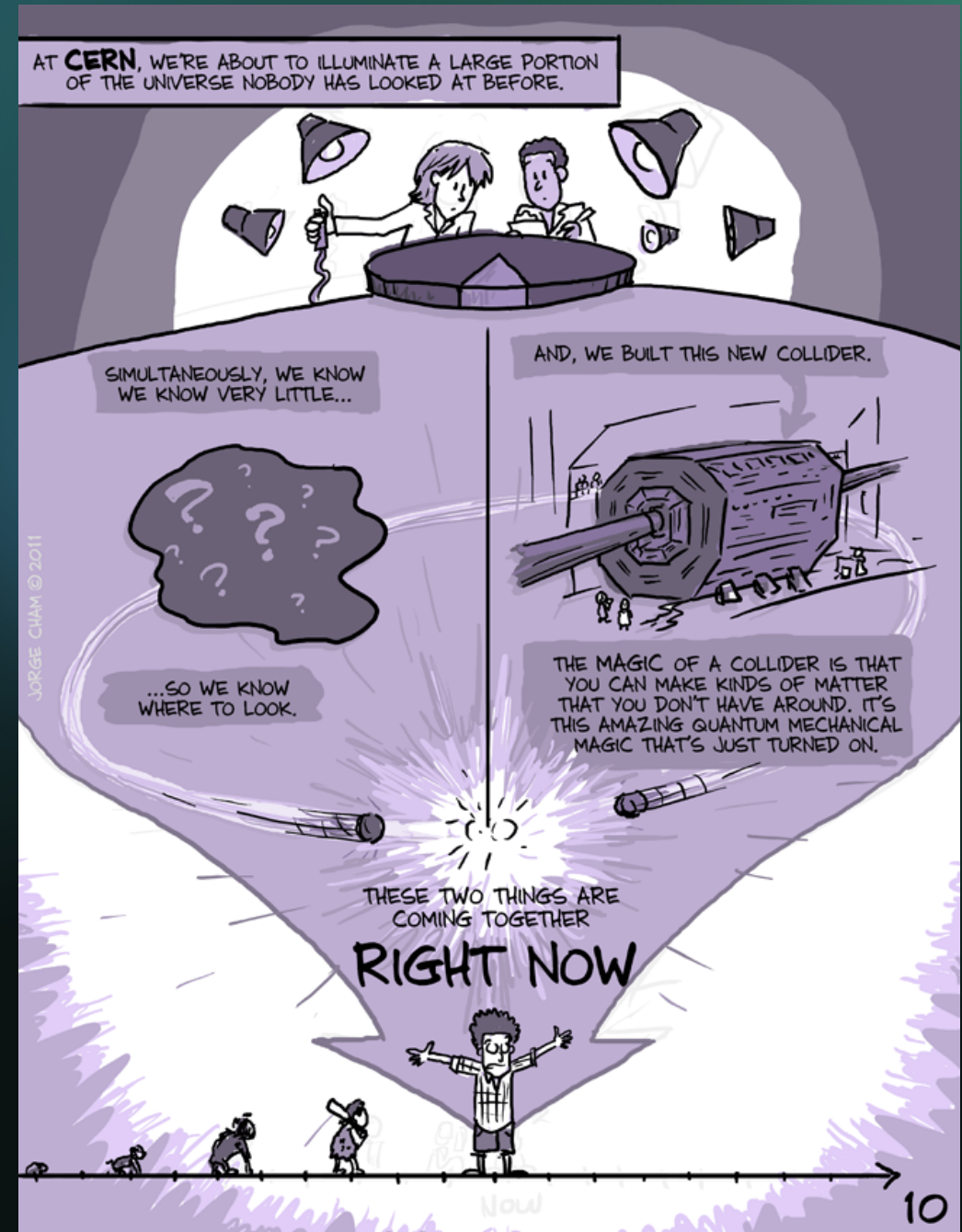
The crucial information expanding the topic  
Argument, Controversy, Story, Evidence,  
Background details

## **The Tail**

Extra information  
Interesting, related  
items, Journalist  
Assessment

Frame  
Story  
Metaphors  
Visuals  
Voice  
Body language

PHD Comics (Jorge Cham) - "Dark matters"  
<https://phdcomics.com/comics/archive.php?comid=1430>





# EVALUATION



Food & Science Festival, Mantua 2024

# Science and media



# Relation with journalists

- Receive invitation:
  - What is the frame (single interview? panel? main topic? time?)
  - What is the public of the media/programme
  - Ask for questions in advance!
  - Speak with the comm. officer at your Institute
- A quick answer is appreciated by journalist
- Prepare to the interview
  - Select the key messages
- After the interview
  - Ask to review the answers



# Scientists communicating science

- Scientists you read/follow (books, social media, videos, podcasts, etc)?

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# Scientists communicating science



NOVICE | ZNANOTEH

Za nekatere je temna snov preveč skrivnostna. Meni se zdi fascinantna

Z Gabrijelo Zaharijaš o posebnih nevtronskih zvezdah, odpravi Fermi LAT, astronomskih katalogih in evropskem projektu Smash.

Saša Senica 18. 1. 2024 | 06:00



# Scientists communicating science

- In your opinion, why should scientist communicate science?

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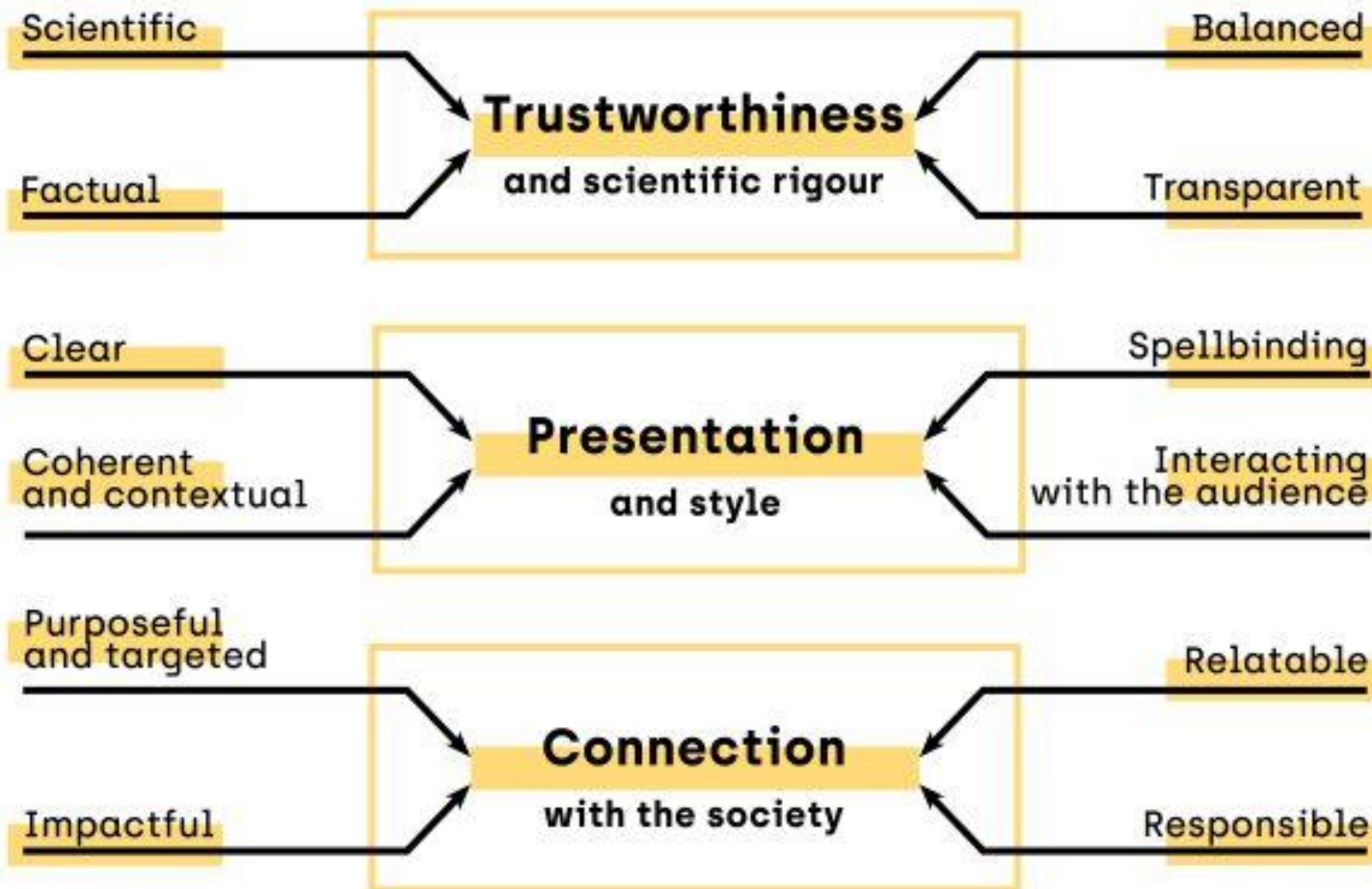
# Public science communication across Europe

- **a landscape in transition**: science in social media is on the rise; science journalism is undergoing seismic structural shifts relating to the demise of print media and new funding pressures
- **embrace a critical, dialogic approach**: move from a 'deficit model' of public audiences towards models of engagement and multi-way communication
- **format matters**: important differences between science communication practice on different platforms, e.g. many more science-based topics discussed on Twitter/X than on YouTube, and that scientists and other experts are particularly active (and gain high engagement levels) on Twitter



**quest**

questproject.eu



**12 QUALITY INDICATORS for  
SCIENCE COMMUNICATION**



# Communication scenario



## Invitation to organize a Pint of Science series of events

- 2. Do you know who your **audience** is?
- 3. Have you identified the **key messages** to deliver and kept the focus on them?
- 4. Are you **framing the message** so that it raises curiosity and is compelling to the public?
- 7. Are you **telling stories** or just delivering a list of facts or numbers?
- 10. Have you strategically planned ways to **open a dialogue and interact** with your audience?
- 12. Did you set out strategies to **deal with skepticism or distrust**?



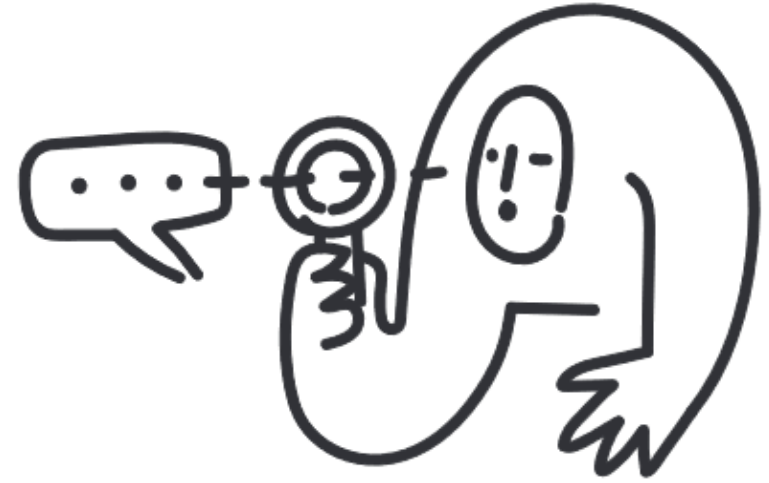
## 2. Do you know who your audience is?

Communication has to be tailored to the audience. To this purpose, scientists have to know their audience – their scientific level, age, demographic...

This requires examining the public you plan to talk or write to. Carefully addressing your audience requires a great level of awareness.

***Get to know your audience and tailor your communication to it.***

**3. Have you identified the key *messages* to deliver and kept the focus on them?**



Staying focused on a few clear messages is the most effective way to address the public.

Frequently ask yourself: "am I still on topic, or am I digressing?"

***Select a maximum of 2-3 key messages that you want the audience to come away with and concentrate on them.***

**4. Are you framing the message so that it sparks curiosity and is compelling to the public?**

Scientists are used to attending lectures and conferences as well as to reading scientific papers. The public may not.

Rather than lecturing, or writing a technical text, scientists preparing to communicate should think of alternative ways to frame messages, in a way that addresses the concerns and curiosity of the public.



Is there an angle that may engage your audience or answer questions they may have?

Are there topics that are familiar to your audience?

***Frame your messages to address the public's concerns, interests and curiosity.***

## **7. Are you *telling stories* or just *delivering a list of facts or numbers*?**

Scientists base their studies on data, numbers, graphs, hard facts, and percentages.

When communicating, they may tend to deliver a list of numbers or evidence.

The use of stories, images, and metaphors will help the audience to follow your presentation and take in your message.

***Use stories and metaphors as a means to engage the audience.***

**10. Have you strategically planned ways to open a dialogue and interact with your audience?**

Communication is a dialogue, a two-way experience, and sometimes it follows unexpected paths.

Opening a conversation with your audience rather than giving a lecture

helps both sides to better understand each other.

It's not about broadcasting to a captive audience, it's about interaction and preparing yourself for it.

Think of activities, different from simply answering a question, that let the audience handle tangible objects whenever possible.

We retain more information when actively engaged in a discourse, rather than being passive listeners.

***Don't focus exclusively on presenting your arguments: ask questions, invite the audience to tell their points of view and be prepared to address their questions.***

## 12. Have you set out strategies to deal with scepticism or distrust?

Especially on controversial topics, scientists would benefit from being prepared for scepticism or distrust.

They could face some challenging questions, even confrontation.

A general rule is not to allow confrontation to grow; a kind invitation to keep further comments for a later private discussion could be suggested.

Rather than denying scepticism, try to find a common ground and be open to a constructive dialogue.



Distrust and challenges cannot always be foreseen, but being prepared, where possible, could save you from difficult and embarrassing situations.

***A good strategy to cope with scepticism is to look for shared values, a common ground, and build your discussion from there.***

# Useful links

- European project QUEST ('QUality and Effectiveness in Science and Technology communication'):

<https://questproject.eu>

- [Checklist for scientist](#)

- Evaluation Framework &

Toolkit: <https://astro4edu.org/resources/document/ze360A9165/>

- Journal of Science Communication: <https://jcom.sissa.it>



## Checklist for scientists: communicating science to the public

Jacopo Pasotti, Ilda Mannino,  
Alessandra Fornetti  
Venice International University

1. Are you allocating enough **time** for preparation and improving your communication skills?
2. Do you know who your **audience** is?
3. Have you identified the key **messages** to deliver and kept the focus on them?
4. Are you **framing the message** so that it sparks curiosity and is compelling to the public?
5. Are you **linking to current facts** or events?
6. Are you communicating **something that you also care about**?
7. Are you **telling stories** or just delivering a list of facts or numbers?
8. Are you using a **simple explanation**, can it be understood by the public?
9. Are you using **short sentences**?
10. Have you strategically planned ways to open a **dialogue and interact** with your audience?
11. Are you carefully thinking about how to **keep your delivery or writing lively** and monitoring the public's reaction?
12. Have you set out strategies to **deal with scepticism or distrust**?
13. Have you **practiced** your communication with non-experts?
14. Are you in touch with your **communication (or press) officers**?

The above checklist developed within the H2020 QUEST project supports scientists in delivering their message and fine-tuning their communication skills to the public. It is the result of several focus groups and interviews with both scientists working in different fields and trainers experienced in science communication. The checklist also draws from the literature review of published studies on scientists' perceptions and from available guidelines on science communication. Some of the points in the checklist apply in specific contexts and not in others; scientists are encouraged to go through the list and choose those elements that apply to their circumstances.

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