

Communicating Science: How to effectively promote your work as a researcher/institution

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Biogas Research Team



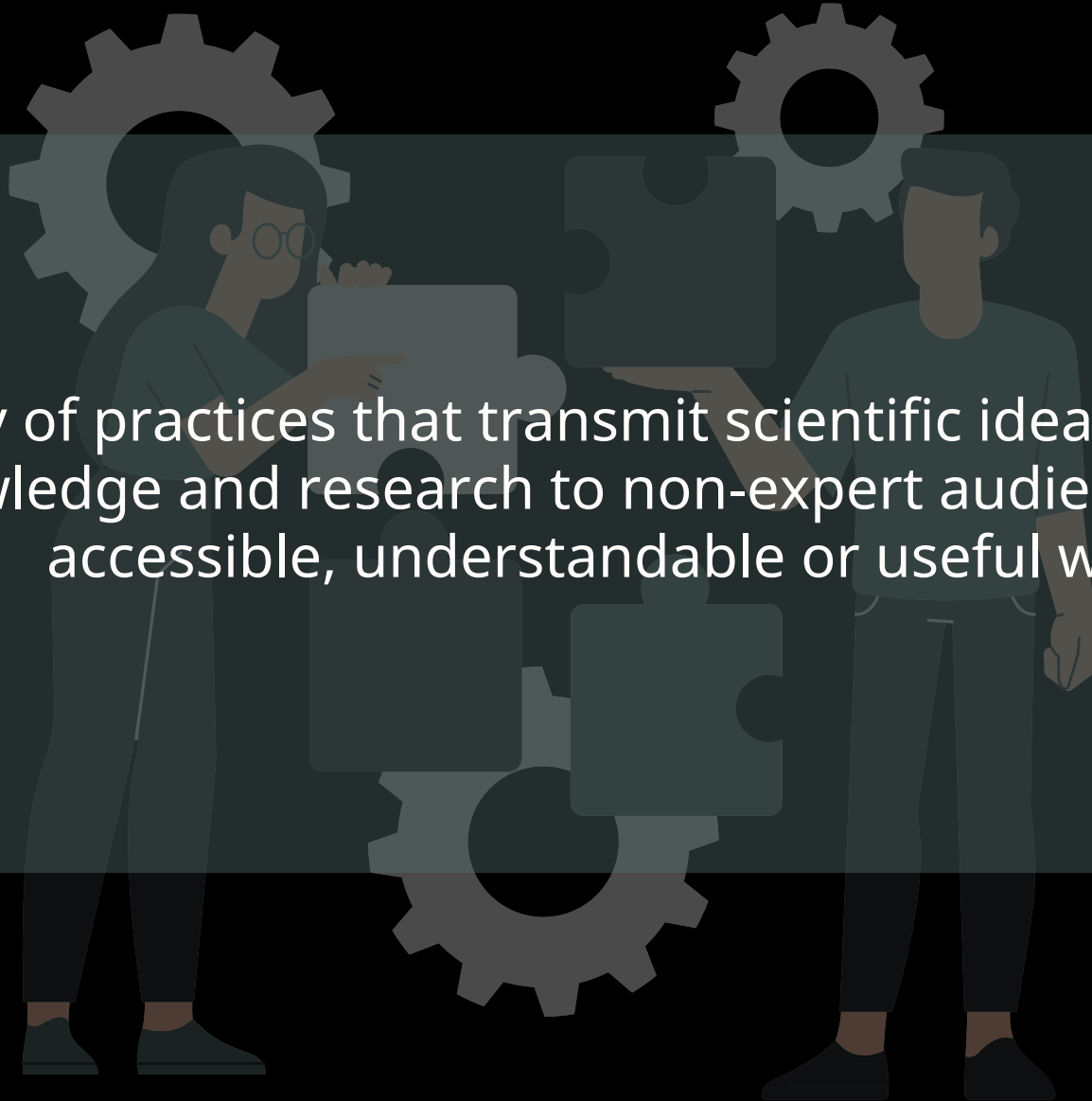


WHAT IS SCIENCE COMMUNICATION?

THE TERM "SCIENCE COMMUNICATION"

SCIENTIFIC COMMUNICATION

Variety of practices that transmit scientific ideas, methods, knowledge and research to non-expert audiences in an accessible, understandable or useful way.



Scientific communication

A dark-themed illustration in the background shows several people engaged in communication. At the top, a person is shown from the chest up, looking towards the right. Below them, another person is holding a smartphone. In the lower right, a person is sitting at a desk with a laptop, looking towards the left. The illustration is composed of simple line art and flat colors, creating a professional and modern feel.

- Generally refers to settings in which audiences are not experts on the scientific topic being discussed (**outreach**).
- Expert-to-expert communication ("**inreach**" such as publication in scientific journals) as a type of science communication

Examples of outreach:

Science journalism - reporting about science to the public

Blogging - discrete, often informal diary-style text entries (posts)

Social media - interactive technologies that facilitate the creation and sharing of information, ideas, interests, and other forms of expression through virtual communities and networks.

An illustration of four diverse people (two women and two men) standing in a circle. One man in the center is giving a high-five to a woman on his left. They are all smiling and appear to be in a collaborative or celebratory mood. The illustration is in a simple, flat style with muted colors.

Science has political, moral, and legal implications. Science communication can help bridge gaps between different stakeholders in public policy, industry, and civil society.

Research funders have raised their expectations for researchers to have **broader impacts** beyond publication in academic journals.

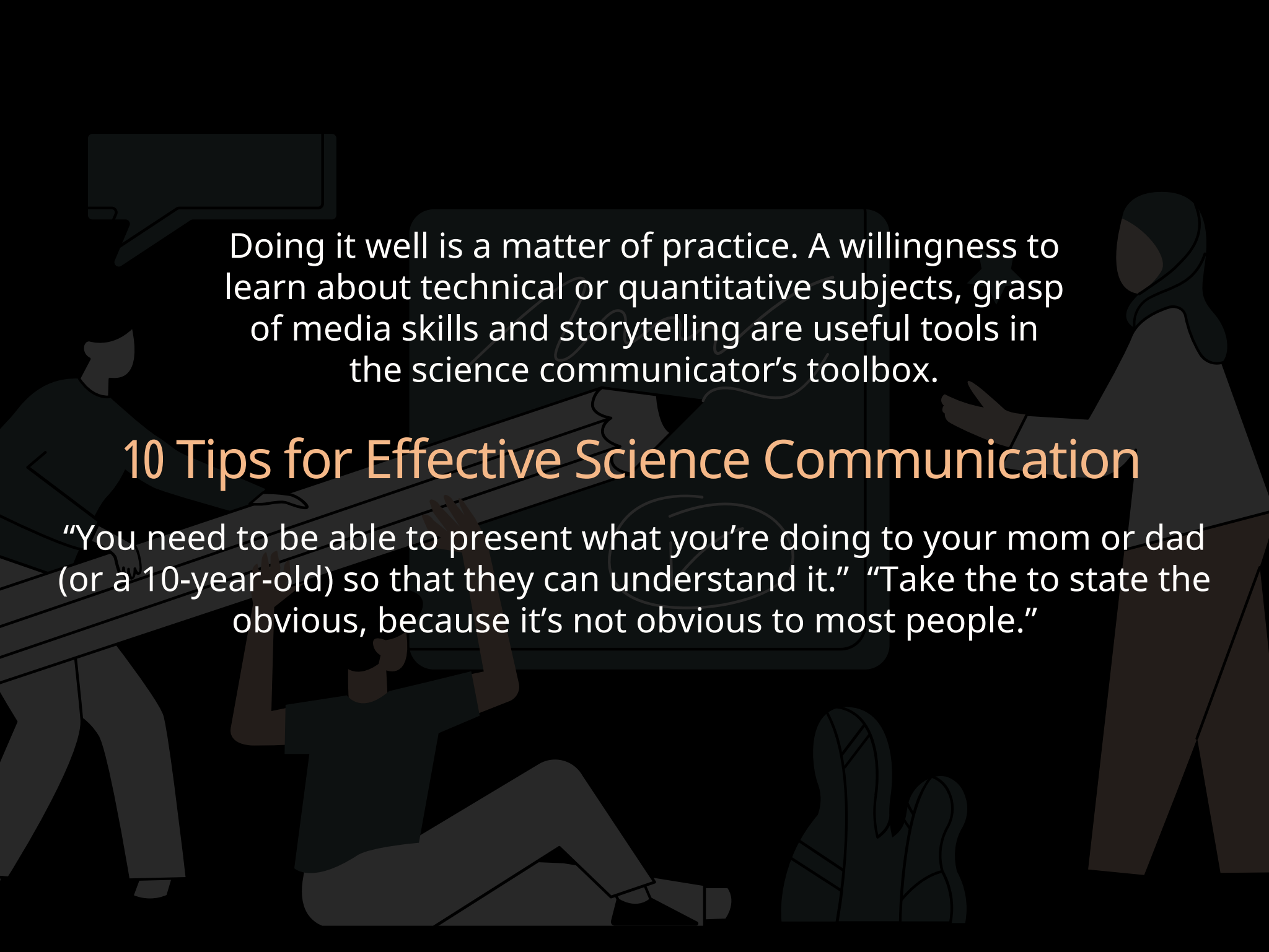
Increasing interest in engaging the public through social media and in-person events.

Scientists and biotechnologists do incredible work every day. However, the deeply technical nature of this work makes it difficult to explain its importance in a way that people without a technical background can understand.

Do I need specialist knowledge or training to do science communication?

'No'

It is up to the science communicator to **make sense of science in their own words** and explain it easily to others. Education or training in science helps but is not an absolute requirement.

The background features dark silhouettes of several people in a meeting. On the left, a person stands near a screen. In the center, a person sits on the floor with their hands raised. On the right, a person stands with their hand on their hip. The overall scene is dimly lit, with the text and title providing the primary visual focus.

Doing it well is a matter of practice. A willingness to learn about technical or quantitative subjects, grasp of media skills and storytelling are useful tools in the science communicator's toolbox.

10 Tips for Effective Science Communication

"You need to be able to present what you're doing to your mom or dad (or a 10-year-old) so that they can understand it." "Take the time to state the obvious, because it's not obvious to most people."

10 Effective Communication Tips for Scientists

1. Know your audience

- Rule - for effective science communication, remember **different groups** of people have **different expectations**.
- **The General public** - how your research impacts their lives and societies
- **The media** - what makes the findings of your research important, including how it's different from what others have done.
- **Potential investors** - want to know whether your work will provide them with a significant return.
- **Peers** - interested in determining whether your work may provide an opportunity for future collaboration.
- **Leadership at your company** - needs to know if a project has achieved the expected results and should progress to the next phase or if changes are needed.

IMPORTANT - APPROACH EACH AUDIENCE DIFFERENTLY AND
TAILOR YOUR COMMUNICATION BASED ON THE GROUP'S
UNIQUE INTERESTS!



2. Identify the goals of communication

- This step builds on the process of knowing your audience to determine the goals and objectives of communicating.

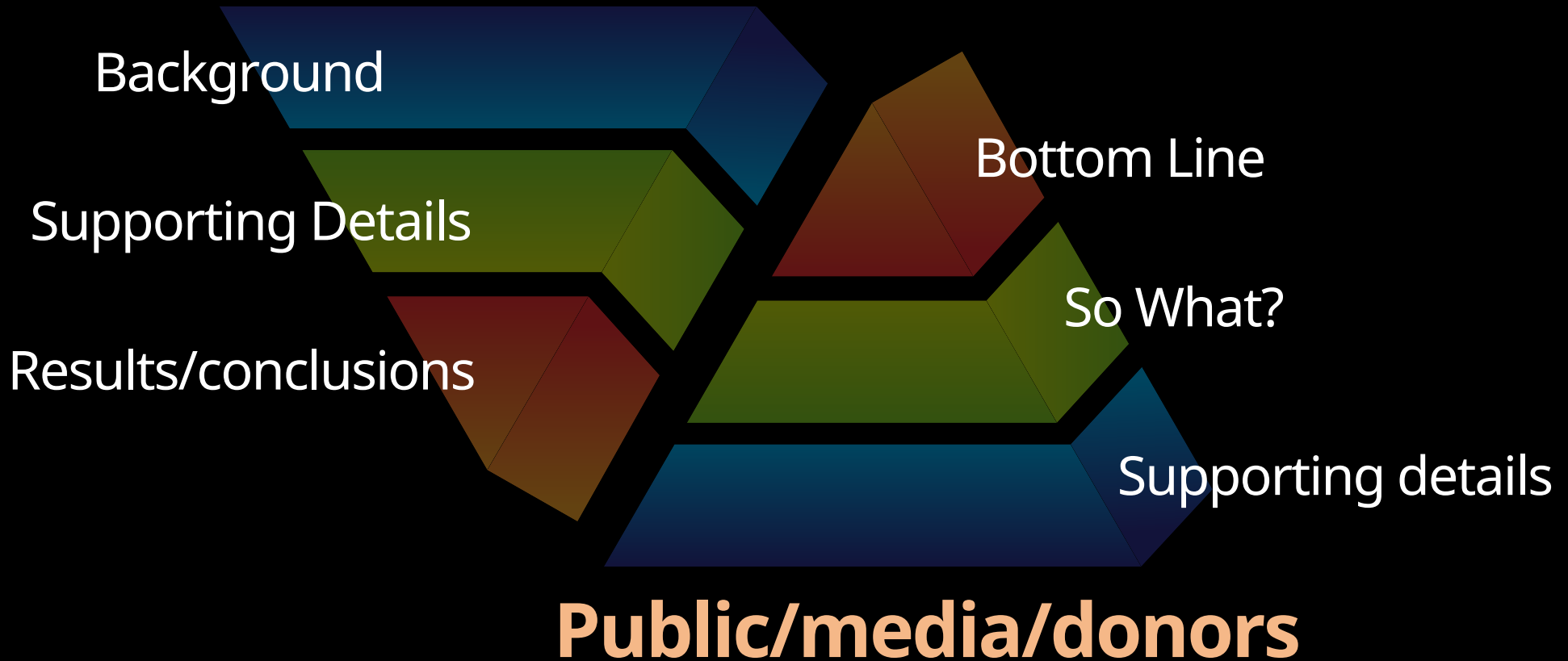
GOALS

- Example - meeting with internal business leaders or potential investors, the goal is often clear: To present your findings and gain support for additional work/funding.
- In public meetings or presentations, you may have one or more communication goals to:
 - Educate,
 - Advocate,
 - Raise awareness,
 - Build trust,
 - Influence policy or research,
 - Encourage change or to be part of a dialogue.

TAKE TIME TO RESEARCH THE GROUP YOU'LL BE ADDRESSING IN ADVANCE (AS WELL AS ANY OTHER SPEAKERS) IN ORDER TO BETTER UNDERSTAND THEIR POINT OF VIEW!

3. Start with the most important information

Researcher



The research community may have the time and attention to devote to a lengthy paper or presentation, but co-workers and citizens alike have a lot to do. Keep this in mind as you plan your communication strategy.

4. Avoid jargon

- Acronyms, initialisms, abbreviations, and technical terminology are common in research papers, presentations, and on-the-job conversations.
- Effective science communication *stays away from jargon or unfamiliar words* and uses terms that make sense to a broader audience.
- **Example:** Writing in Forbes, former NASA meteorologist J. Marshall Shepherd, PhD, noted that, for the scientific community, “PDF” means “probability density function”—but for everyone else, it’s simply a document file format.
- If scientific terminology must be used, explain it in more commonly understood terms.
- Test your explanation (friends, family/colleagues with a different professional and educational speciality) to see if they know what you mean.
- Don’t be afraid to try multiple options before you find the terms that work best.

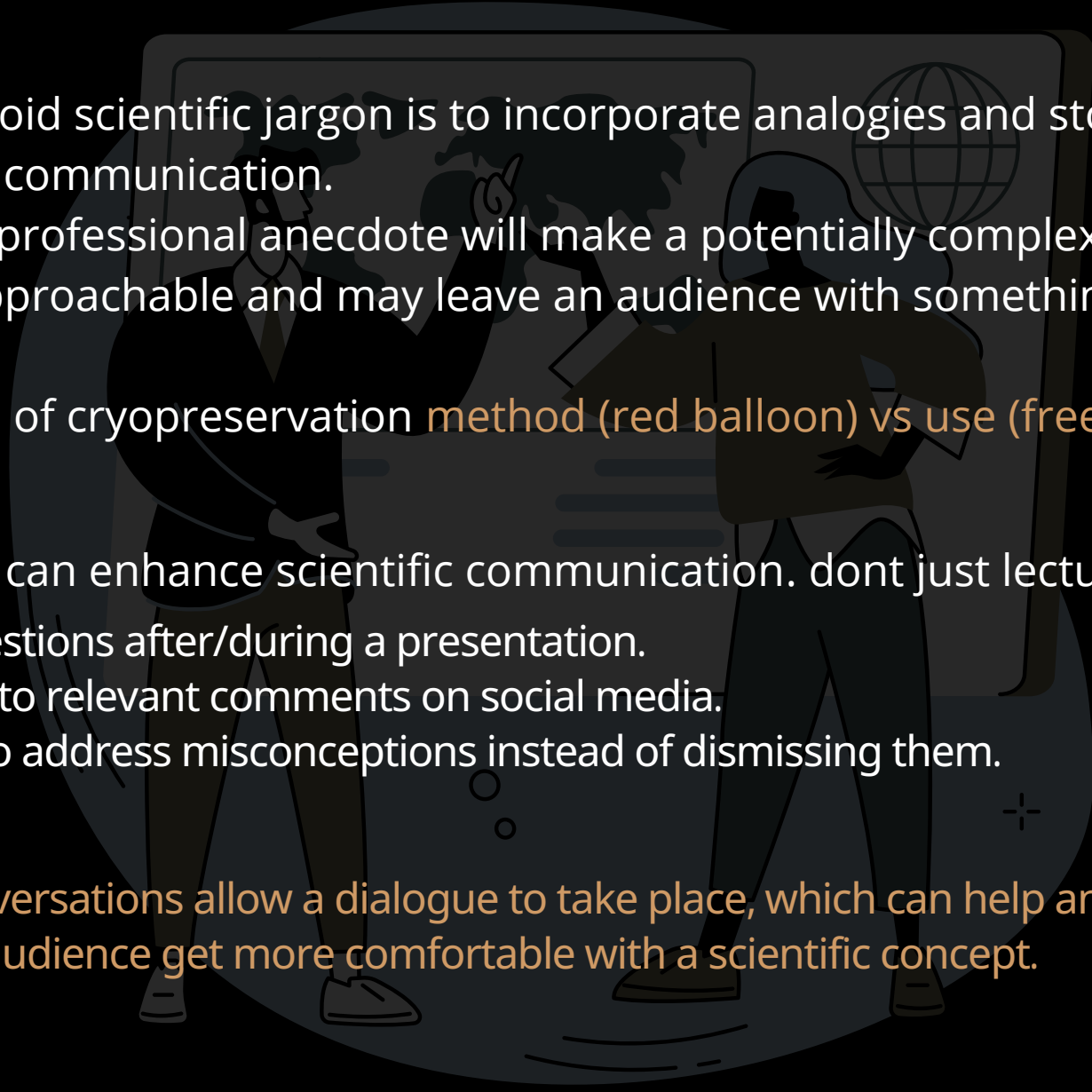
5. Be relatable

- One way to avoid scientific jargon is to incorporate analogies and stories into your scientific communication.
- A personal or professional anecdote will make a potentially complex topic seem more approachable and may leave an audience with something to remember.

Example: the case of cryopreservation **method (red balloon) vs use (freezing chicken)**.

- Conversations can enhance scientific communication. **don't just lecture interact!**
 - Take questions after/during a presentation.
 - Respond to relevant comments on social media.
 - Striving to address misconceptions instead of dismissing them.

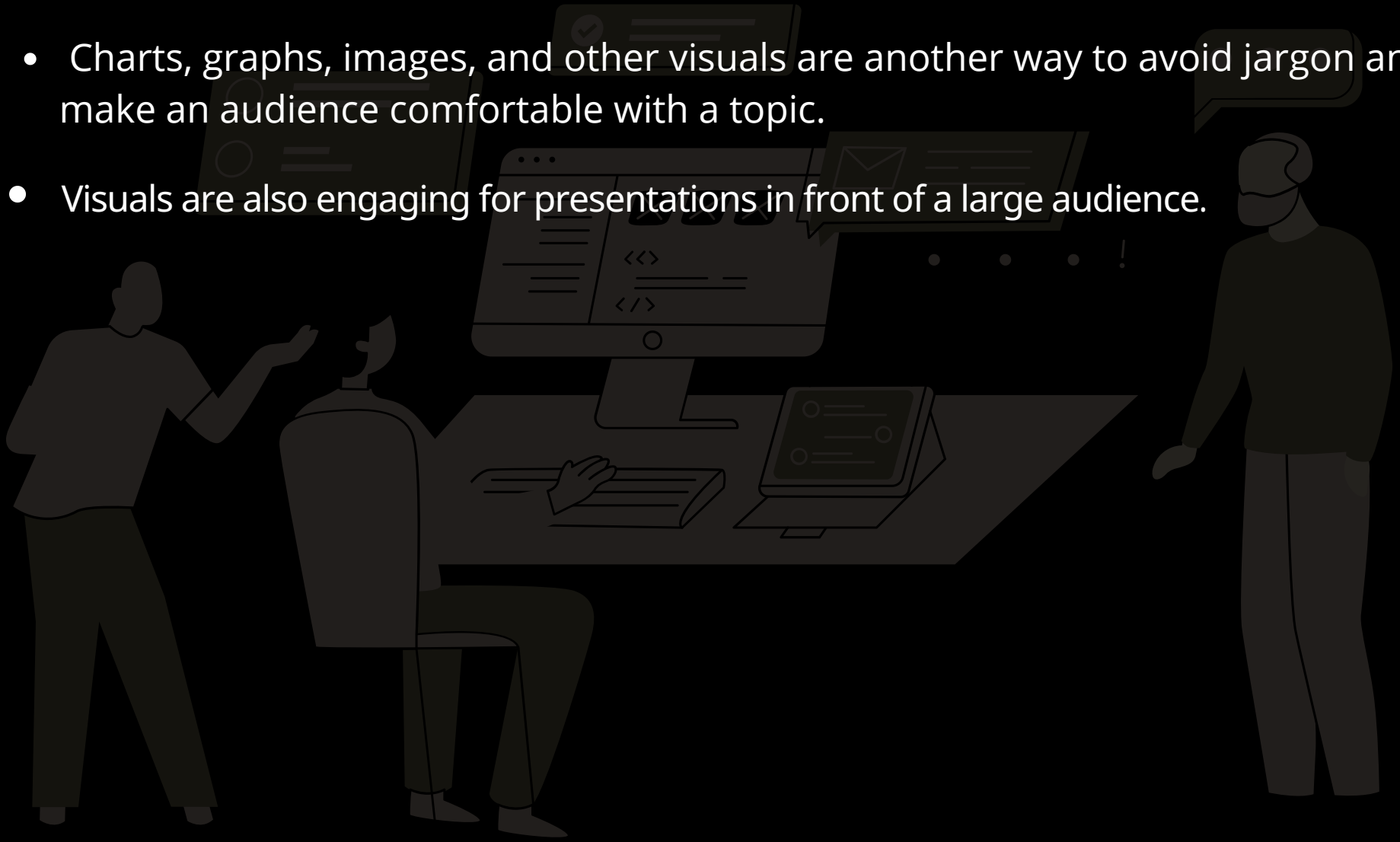
Conversations allow a dialogue to take place, which can help an audience get more comfortable with a scientific concept.



6. Provide visuals

“A picture speaks 1,000 words, and science is one industry where that holds true”

- Charts, graphs, images, and other visuals are another way to avoid jargon and make an audience comfortable with a topic.
- Visuals are also engaging for presentations in front of a large audience.

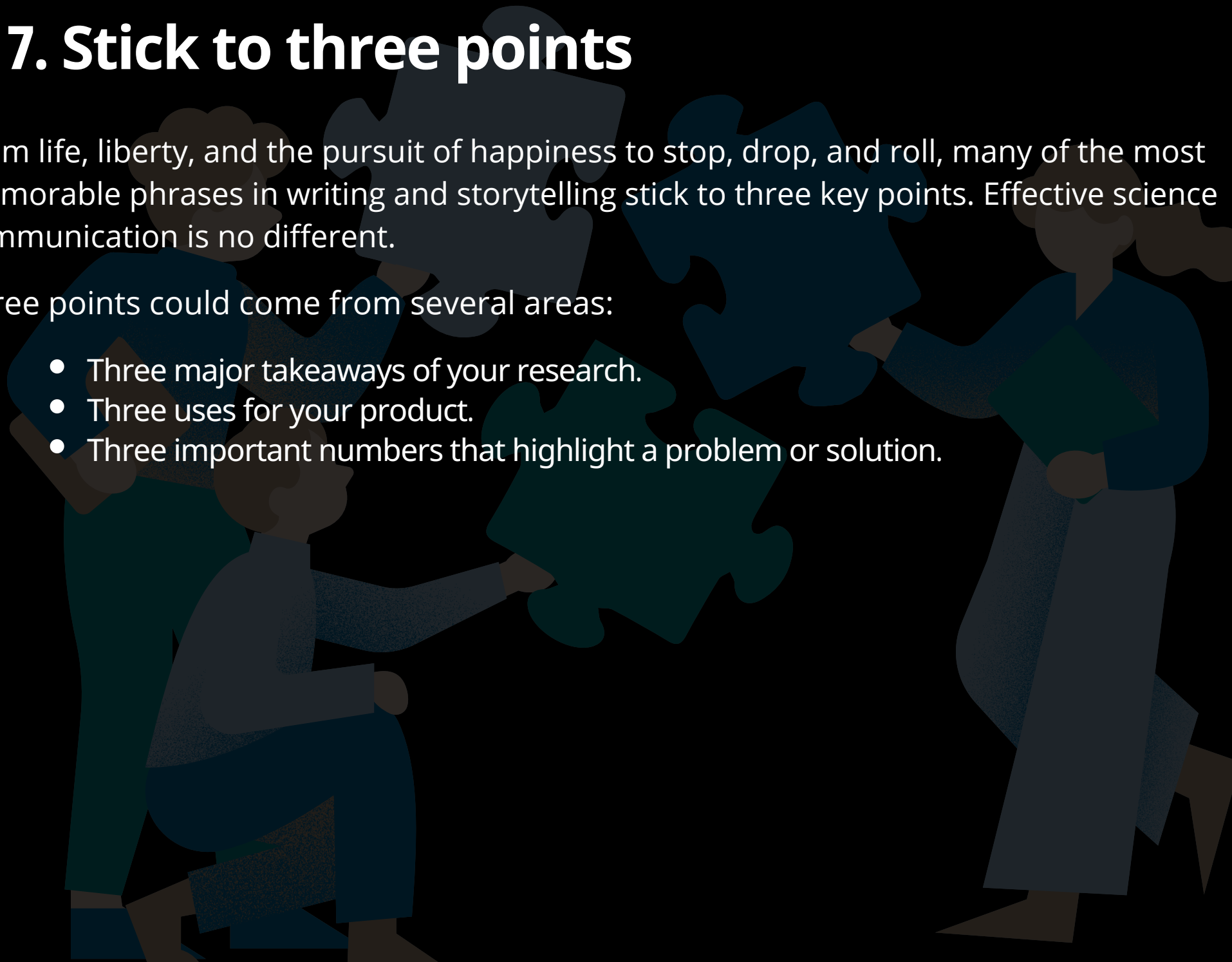


7. Stick to three points

From life, liberty, and the pursuit of happiness to stop, drop, and roll, many of the most memorable phrases in writing and storytelling stick to three key points. Effective science communication is no different.

Three points could come from several areas:

- Three major takeaways of your research.
- Three uses for your product.
- Three important numbers that highlight a problem or solution.



8. Talk about the scientific process

- The scientific process is rarely final - “Yes” or “No,” answers are often conditional and require further investigation. This disconnect can lead to frustration as well as mistrust.

Instead of focusing solely on the results be ready to:

- Explain how you got there.
- Why do you use certain research methods?
- What next steps you will take.

Discussing the scientific process can spark curiosity in people without a scientific background.



9. Focus on the bigger impact

- Your work is part of a larger problem - Example cryopreservation.
- The big-picture impact can help an audience understand why your work is important.
- Impact could be financial, technological, educational, or political - vary depending on the audience.

Keeping the big picture in mind will lead to more impactful and effective science communication.



10. Develop an elevator pitch

A focused statement short enough to “pitch” while you ride an elevator with someone can help you quickly and effectively communicate the value of your scientific work.

An opportunity to practice many of the tips highlighted above:

- Focus on the big-picture relevance, not the nuances of your research question and methodology.
- Describe the goals of your research, using analogies wherever possible in order to avoid the use of jargon.
- Explain why your research is exciting. Highlight the problem you are trying to solve and tie it back to why your work is relevant.

A good elevator pitch should last no longer than a short elevator ride of 20 to 30 seconds, hence the name elevator “pitch”

Develop an elevator pitch

Identify the goal of the pitch

- Self-introduction
- Advertisement
- Building a connection

Clearly describe what you do

- What you study, research, build, make
- Past experiences

Focus on strengths

- Unique ideas, recent activities, latest accomplishments

Credit and/or compliment

- Team members, supervisors, mentors

Engage listener with a question

- Offer an opportunity to respond

Tips for a great elevator pitch:

- Do Your Research
- Be Mindful of Body Language
- Manage Anxiety and Self-Doubt
- Practice, Practice, Practice

15 - 20 minutes elevator pitch

The Four-Step Elevator Pitch

1 Start by introducing yourself

“Hi, my name is Sara.
It’s so nice to meet you!”

2 Provide a summary of what you do

“I’m a PR manager, specializing in
overseeing successful initiative
launches from beginning to end.”

3 Explain what you want

“I find the work your PR team does to
be innovating and refreshing — I’d love
the opportunity to put my expertise to
work for your company.”

4 Finish with a call to action

“Would you mind if I set up a quick
call next week for us to talk about any
upcoming opportunities on your team?”

Communicating Science as an institution

- Communication and dissemination of evidence, activities, and findings among all stakeholders (**Outreach**) .
- Main focus- dissemination, engagement, and communication.
- Communication and dissemination plan - Example - European Commission.

WHAT IS A DISSEMINATION PLAN?

Sets out a strategy to **maximise the project's/research impact**, increase its visibility, and ensure that project outputs reach a wide audience of relevant stakeholders.

PARTES OF A DISSEMINATION PLAN?

Addresses the following elements:

- Purpose (“why?”)
- Messages (“what?”)
- Key audiences (“who?”)
- Methods (“how?”)
- Time (“when?”)

Example of a CDP at: <https://bit.ly/3ryrR11>

Communication: Promote your action and results

Inform, promote and communicate your activities and results

 **Reaching multiple audiences**
Citizens, the media, stakeholders

How?

- Having a well-designed strategy
- Conveying clear messages
- Using the right media channels

When?

From the start of the action until the end


Why?

- Engage with stakeholders
- Attract the best experts to your team
- Generate market demand
- Raise awareness of how public money is spent
- Show the success of European collaboration

Legal obligation of your Grant Agreement

Dissemination: Make your results public

Open Science: knowledge and results (free of charge) for others to use


 **Only to scientists?**

Not only but also to others that can learn from the results: authorities, industry, policymakers, sectors of interest, civil society

 **How?**

Publishing your results on:

- Scientific magazines
- Scientific and/or targeted conferences
- Databases

 **When?**

At any time, and as soon as the action has results


 **Why?**

- Maximise results' impact
- Allow other researchers to go a step forward
- Contribute to the advancement of the state of the art
- Make scientific results a common good

Legal obligation of your Grant Agreement

Exploitation: Make concrete use of results

Commercial, Societal, Political Purposes

 **Only by researchers?**

Not only, but also:

- Industry including SMEs
- Those that can make good use of them: authorities, industrial authorities, policymakers, sectors of interest, civil society

 **How?**

- Creating roadmaps, prototypes, softwares
- Sharing knowledge, skills, data

 **When?**

Towards the end and beyond, as soon as the action has exploitable results

 **Why?**

- Lead to new legislation or recommendations
- For the benefit of innovation, the economy and the society
- Help to tackle a problem and respond to an existing demand

Legal obligation of your Grant Agreement

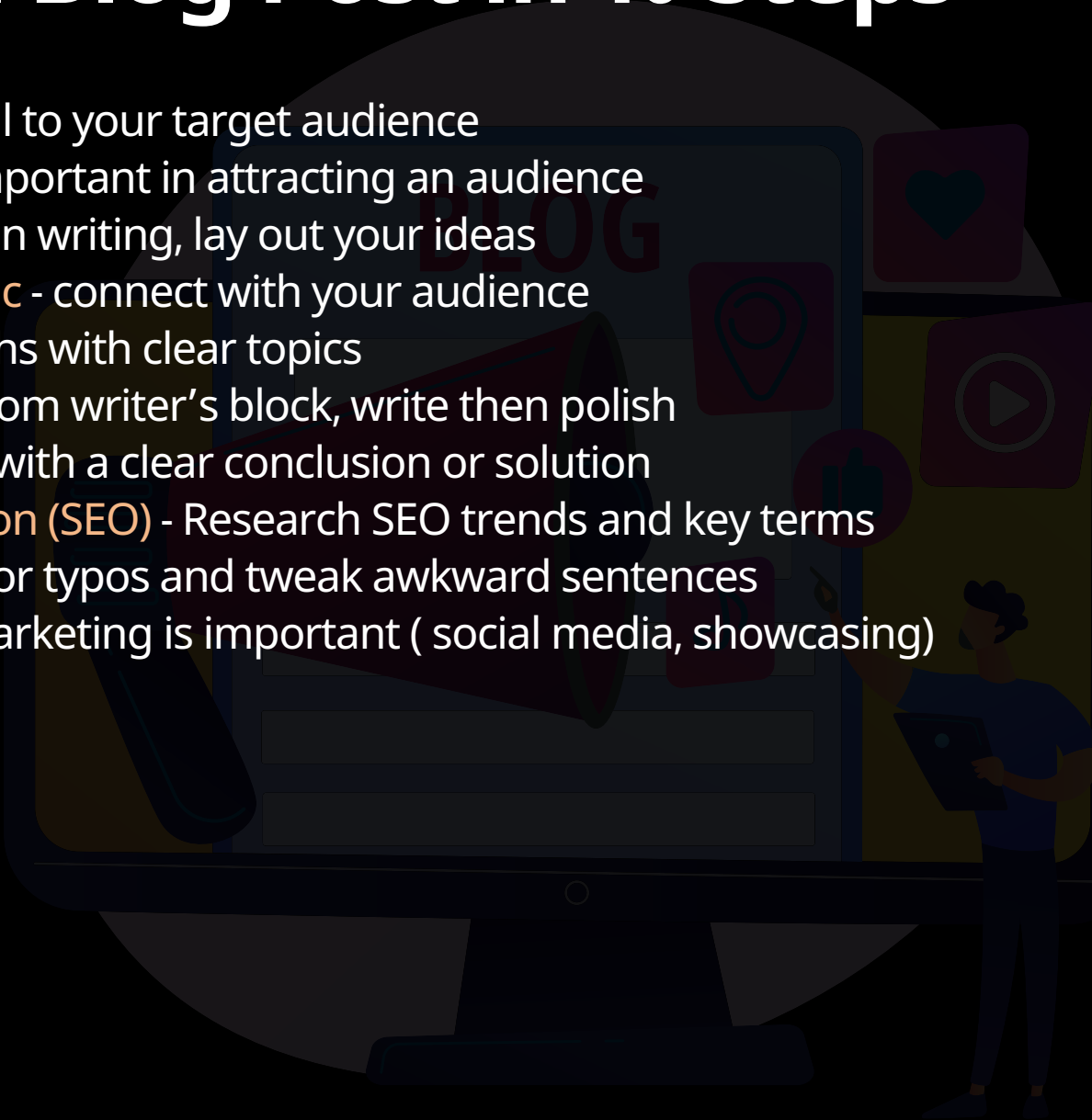
Source: European Commission - <https://bit.ly/3PDgXiK>

Tips for generating content

- Website strategy and concept
- Visual language and graphics
- Communication templates: How-to templates
- Blogging and social media



How to Write a Blog Post in 10 Steps

1. **Address a compelling topic** - appeal to your target audience
 2. **Come up with a great post title** - important in attracting an audience
 3. **Outline your post** - before you begin writing, lay out your ideas
 4. **Explain your connection to the topic** - connect with your audience
 5. **Use a clear layout** - short paragraphs with clear topics
 6. **Write from the heart** - You suffer from writer's block, write then polish
 7. **Propose solutions** - wrap up posts with a clear conclusion or solution
 8. **Consider search engine optimization (SEO)** - Research SEO trends and key terms
 9. **Proofread** - read-through to look for typos and tweak awkward sentences
 10. **Promote your writing** - content marketing is important (social media, showcasing)
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Suggested types of blog post

- **News article** - provides concise and factual information to readers
- **Announcement piece** - announce an EVENT (basic details of the event)
- **Catchy/informative blog post** - Storytelling style

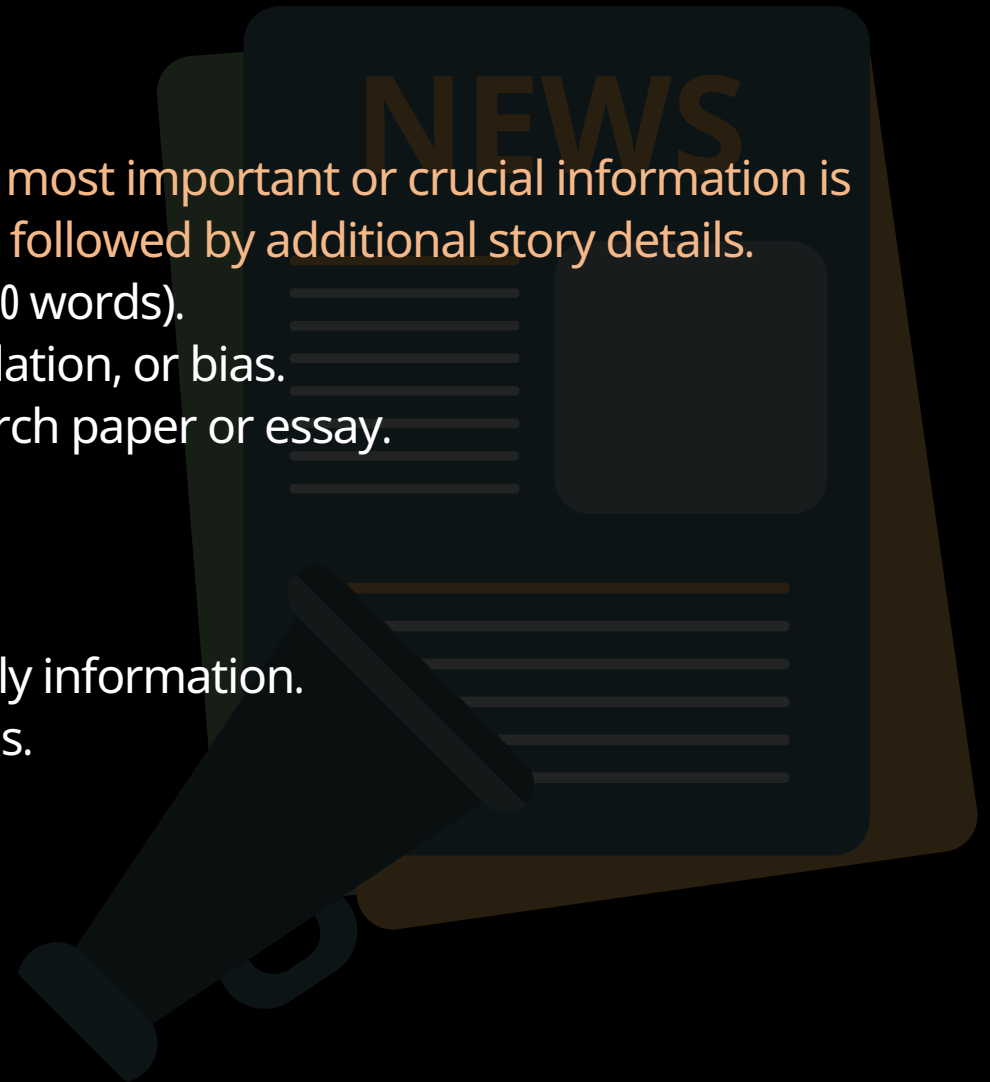


News article

- Structured like an inverted pyramid. The most important or crucial information is always presented to the reader up front, followed by additional story details.
- News articles should be shorter (300 to 500 words).
- Doesn't include personal opinion, speculation, or bias.
- No jargon that you might find in a research paper or essay.

How is a news article structured?

- Begin with the most important and timely information.
- Follow those facts with supporting details.



News article

TEMPLATE/SUGGESTED NEWS STRUCTURE:

1. Title:

- Catchy and short title (8 words max as an ideal)

2. Body:

- One of the best practices for writers is to follow “The 5Ws” guideline by answering the What, When, Who, Where and Why.

3. Conclusion:

Wrapping up of the piece, a final message, outcome, idea or future activities.



Announcement piece

- Purpose of an event announcement is to provide readers with basic details of the event — who, what, where, when, and why “The 5Ws”.
- Make sure to incorporate these main points so potential attendees have all the information they need to determine whether they want to attend.



Announcement piece

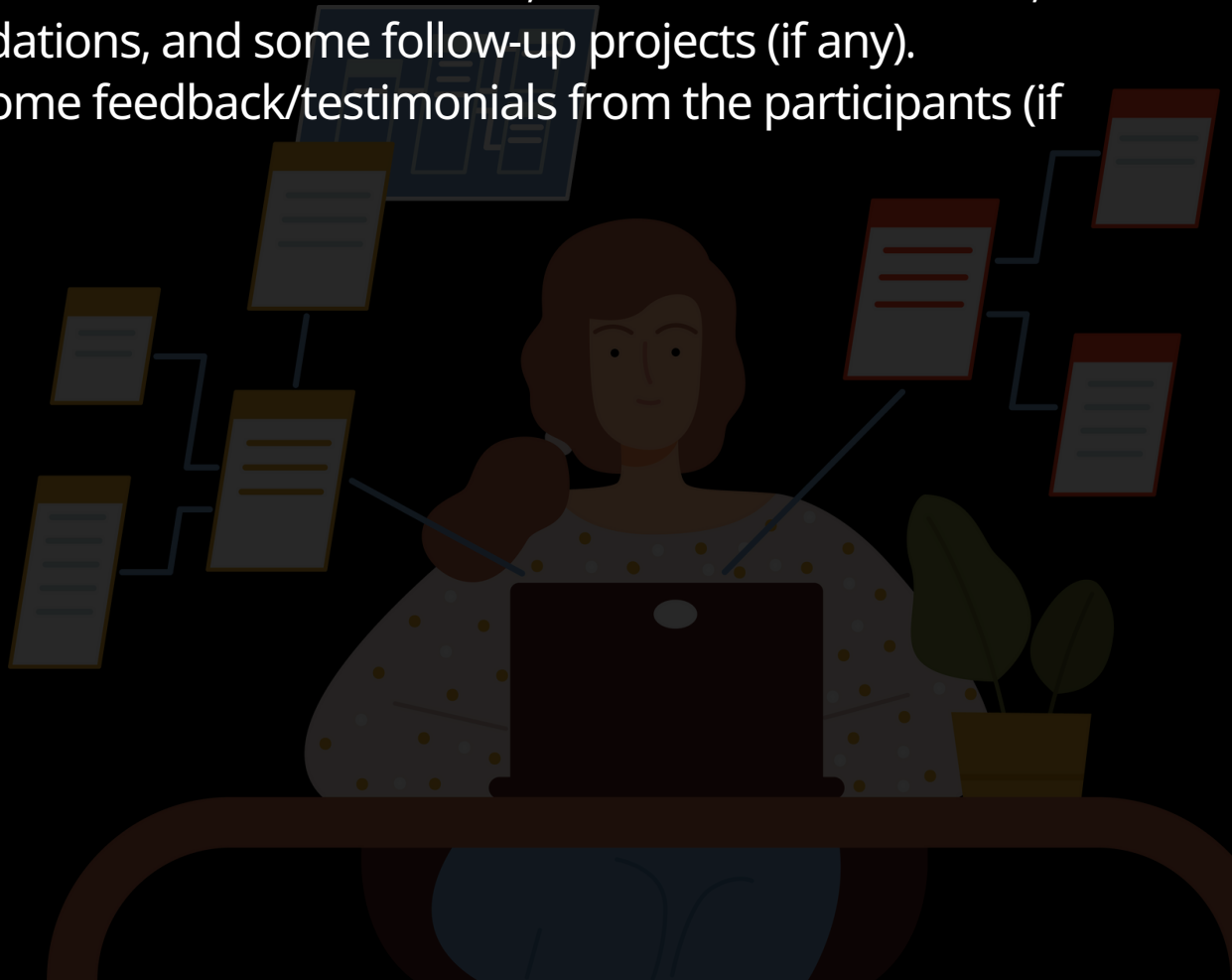
SUGGESTED TEMPLATE/WHAT TO INCLUDE IN AN EVENT ANNOUNCEMENT PIECE?

- A catchy and compelling heading:
- Date and time:
- Location:
- Event type: (workshop, conference, training, etc.)
- Event format: (virtual, in-person, hybrid)
- Short description:
- Speakers (if any)
- Sponsors (if any)
- Other organizers (if any)
- Keynotes (if they're locked down)
- Registration information:
- Contact information:
- One or two supporting graphics – visuals, photos, etc. that display the theme and style of your event



Catchy/informative blog post

- Often **informal diary-style text entries**. Posts are typically displayed in reverse chronological order so that the **most recent post appears first**, at the top of the web page.
- Blog posts tell a story, what (its objectives), and who was involved (both as organizers and participants). What came out of this – i.e., the concrete outcomes, the conclusions or recommendations, and some follow-up projects (if any).
- Ideally, it would also present some feedback/testimonials from the participants (if possible).



BLOG POST STRUCTURE - MAIN THINGS TO LOOK AT:

- Adopt a **storytelling/ journalistic style!** (Not too academic)
- Focus on **your experience** (please try being concrete and not just discuss concepts)
- Ensure a **catchy, comprehensive beginning** of the blog post (what are we talking about?), such as a conclusion/wrapping up of the piece or opening to a new idea.
- Share some messages, highlights, and recommendations.
- **Include feedback** from participants whenever appropriate.
- Try to present concrete follow-ups or insights on **actionable future projects/activities.**
- Support your arguments with **facts and sources** (+URL).
- A catchy and **short title** (8 words max as an ideal).
- Short narrative (300 to 600-800 words).
- Short paragraphs (5 lines depending on column width) and sentences.
- Use sub-titles (these help the reader to orient better when reading and make the blog that much more visually appealing).
- Use very appealing pictures/visuals with appropriate credit.

Homework - write a blog and hone your blogging skills!

- **News article** - provides concise and factual information to readers
- **Announcement piece** - announce an EVENT (basic details of the event)
- **Catchy/informative blog post** - Storytelling style

GUIDELINES:

- Follow the suggested template/structure for the type of blog you choose.
- Send your piece in via email in MS Word format and picture(s) as a separate attachment (check the quality before sending – photos)
- Send to Stacy Hammond, BRT communications officer, at hammond_hammond@ftz.czu.cz.
- Stacy and the team will provide personalized feedback.
- Your Blog may be published on the BTR website.



THANK YOU FOR YOUR ATTENTION

"OTHER COMMENTS/SUGGESTIONS?"