

Transforming science communication through storytelling

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Science communication is an important skill. It is easier for nonacademic audiences to remember stories that resonate with their imagination rather than facts and figures. To help early-career researchers develop their skills, the EU-LIFE Science Communications Working Group (SCWG) developed a training course based on the experience from previous workshops held at a research institute in Denmark. The stories crafted in the workshops proved impactful, with some integrated into broader campaigns and featured in science magazines. The initiative holds potential for transformative change, helping researchers promote their findings and increasing awareness of emerging research topics among the public. Recently, the initiative has been customized for a summer school aimed at medical doctors pursuing a PhD, marking a step forward in the SCWG's mission to equip researchers with essential communication skills.

Keywords: communications skills; early-career researchers; European research; research collaborations; science communications; storytelling; training

It was the end of an exciting night. A world-famous research institute in Copenhagen had opened its doors to the public and many scientists gathered in the halls to present their work. Yet Emma, an accomplished postdoc with impressive credentials, found herself grappling with a sense of disappointment. Despite her expertise in neuroscience, and even a publication in *Nature*, Emma realized she was unable to engage and captivate a nonscientific audience. The event left her feeling unappreciated.

Meanwhile, Anne Rahbek-Damm and Emil Petersen—the institute's science communication team—witnessed firsthand the struggle many researchers faced in communicating their work to the public. Determined to address this challenge, they sprang into action, using their skills to develop a workshop aimed at empowering researchers to convey their work effectively.

In the following months, Anne and Emil found a unique opportunity to amplify their efforts thanks to

Abbreviations

ABT, And-But-Therefore format; EMERALD, International PhD Programme for Medical Doctors; EU-LIFE, Alliance of independent research institutes in the life sciences across Europe; BRIC, Biotech Research and Innovation Centre in Copenhagen, Denmark; FIMM, Institute for Molecular Medicine Finland in Helsinki, Finland; IMBB-FORTH, Institute of Molecular Biology and Biotechnology in Heraklion, Greece; SCWG, Science Communications Working Group.

EU-LIFE, an alliance of leading research centers across Europe. Leveraging the network provided by EU-LIFE, the team was able to expand their workshop on a larger scale. The initiative, which has now been implemented at three European research institutes, promises to transform the way researchers communicate, breaking down the barriers between complex science and a curious, non-academic audience.

“It is remarkable how members of EU-LIFE collaborate to empower scientists to tell compelling stories about their work. The storytelling workshop is a great outcome of our constant sharing of good practices across Europe,” says Marta Agostinho, EU-LIFE’s Executive Director. “Science communication plays a critical role in accomplishing our mission to promote excellence, collaboration and innovation in European research.”

Empowering scientists

Emma is a fictional character. But there is an element of truth to her story: Many scientists often struggle to engage nonacademic audiences, as they are immersed in environments where the use of scientific jargon is the norm. For thousands of years, even before written language was invented, humans transferred knowledge to the next generation through stories. With this in mind, Anne and Emil set out to train early-career scientists at their institute, the Biotech Research and Innovation Centre (**BRIC**) in Copenhagen, Denmark, to showcase their findings through storytelling.

The initiative provided the researchers with valuable communication skills. “Almost every captivating story follows a distinct structure, which can be distilled into an effective and straightforward template,”

Anne says. “By mastering this template, you gain access to a powerful tool that can be used for different audiences.”

Recognizing the impact of their training, Anne and Emil decided to share their experience within the EU-LIFE Science Communication Working Group. In 2019, the group developed a training package through co-creation sessions and online meetings. The goal was to design a one-day workshop targeted at early-career researchers, which could be easily implemented across all EU-LIFE institutes.

The training is based on the narrative framework “And-But-Therefore,” or **ABT**—a storytelling approach that sets up a situation (**And**), introduces a complication (**But**), and then resolves or addresses it (**Therefore**) (Fig. 1).

Participants are asked to send a summary of their research in advance, allowing the trainers to familiarize themselves with the content. During the workshop, the participants are introduced to the fundamental principles of storytelling. This includes understanding the importance of crafting a clear narrative arc, the role of engaging hooks, and the use of strategies to create a compelling story. Key storytelling concepts such as structure, audience engagement, and clarity are covered in detail.

Following the theoretical introduction, participants are given the opportunity to apply these principles through hands-on activities. They work on transforming their own research descriptions into compelling stories using the **ABT** framework. After creating their narratives, participants receive feedback from peers and facilitators. This feedback session is designed to be supportive and constructive, helping participants to refine their stories further. As the workshop unfolds,

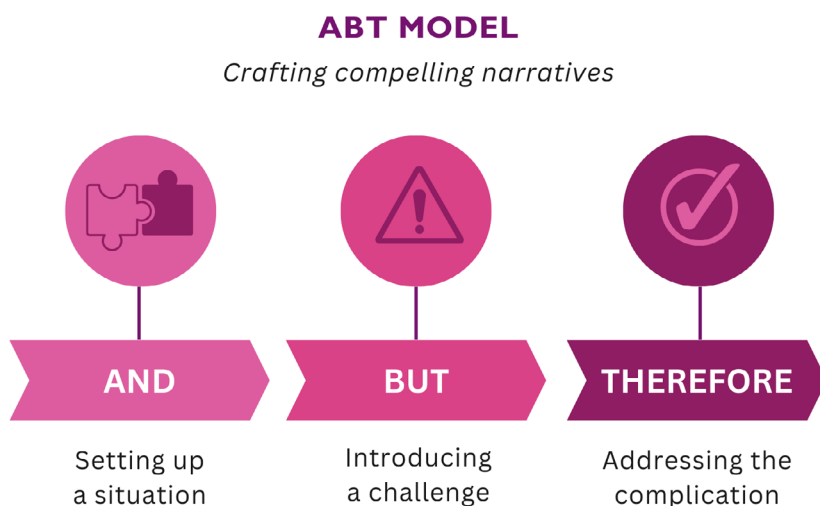


Fig. 1. ABT narrative framework.

attendees become equipped with the tools and techniques needed to engage, inspire, and connect with diverse audiences.

With an emphasis on interaction, the workshop accommodates up to 12 participants per session (Fig. 2) and can be deployed with ease across research institutes, facilitating widespread implementation. Feedback from participants and observations from the trainers have been key for refining and improving the workshop's content. The trainers emphasize the importance of creating a safe space for everyone. "Since many participants are outside their comfort zone and receive input from other participants, it is crucial to ensure that the feedback is given in a supportive, positive and constructive manner," says Mari Kaunisto, a science communicator at the Institute for Molecular Medicine Finland (FIMM) in Helsinki.

Catalyst for change

The narratives developed during the storytelling workshops have been used in [broader communication campaigns](#) and even found their way into [popular science magazines](#). In [Box 1](#), readers will find an example of how a highly complex, technical description of a research project was transformed into a compelling and reader-friendly story.

To date, the workshop has been conducted at BRIC and two other EU-LIFE institutes: FIMM and the Institute of Molecular Biology and Biotechnology, which is part of the Foundation for Research and Technology in Heraklion, Greece ([IMBB-FORTH](#)). The initiative has also been tailored for the Summer School of [EMERALD](#)—an international PhD program for medical doctors, which took place in



Fig. 2. EU-LIFE Storytelling Workshops held at BRIC and FIMM.

Box 1. Example of narrative transformation

The researcher's description of their work on identifying biomarkers for cancer, diabetes, and other diseases initially read as follows:

My post doc research is about liquid biopsy i.e. looking for biomarkers in the blood that can discriminate healthy people from people with a specific disease (cancer, diabetes). More specifically, I study cfDNA patterns, pathways and biology that can help with prognosis of disease, diagnosis and treatment effectiveness. My research also involves the use of AI that through algorithms can combine specific characteristics that can predict a disease. For example, cfDNA traits, BMI and smoking can predict the possibility of someone being healthy or being a prediabetic patient at risk of developing full diabetes in the future.

This research is important for clinical applications, since it can help identify patients very early before the onset of the disease (i.e. diabetes) and it can help them get therapy earlier. This is useful for the patients because they might never develop the disease to begin with, and for public health for eliminating costs. In the case of cancer, prediction of early diagnosis gives the patient a better outcome and in terms of therapy effectiveness is important for a patients' well-being and managing their regime better.

After applying the storytelling techniques learned in the workshop, the research description was transformed into a narrative:

This story is about Maria. Maria is a woman living in New York, London, Dubai working crazy schedules. Maria is a farm owner in a remote village in Greece, Brazil, China that does not have access to proper medical care. Maria is every woman living today that deserves a fighting chance against breast cancer and she deserves an honest and clean fight with cancer. Not all women get diagnosed accurately and quickly enough with breast cancer. What they can get though is a test, an early and accurate test, that can tell them if they will develop breast cancer soon or at some point in their life so that they can fight it equally, seek treatment, and have time to explore their options. What is amazing about this test is how simple it is: a single blood draw! This can be performed in any hospital, institute, or medical centre and does not require expensive equipment, or a lot of experience. The blood is collected and separated into each component part in order to get the most important element of life: DNA! Specifically, circulating cell-free DNA that all our organs shed in the blood giving us important information from each and every corner of our body; even from parts to which we don't have easy access! Separation requires a simple and cost-effective kit that will give us cell-free DNA, a molecule rich in information, which then will be further analysed for specific characteristic cancer traits with the use of a biology kit in the laboratory. The traits uncovered will be combined with the traits of Maria that we already know, such as her age, her working environment, her habits, and so on. For the final part, the new and amazing AI comes to the rescue by combining all these elements together and effectively predicting the chances of breast cancer. AI can be used remotely online with the aid of an algorithm, and so what is really needed is just a very simple lab and an internet connection. These results can help determine if Maria needs further testing, urgent biopsies or treatments—or not. It reduces the need for operations, the need for extensive and expensive medical equipment and the time to take decisions. It can also help actually diagnosing instead of testing. . .and testing. . .and testing (and travelling in cases of remote access). And of course, if all goes well and Maria beats cancer, she can use the test again for relapse, therapy effectiveness and monitoring. Every Maria in the world can be helped with this test, so please help Maria, your neighbour, your aunt, by increasing awareness of this test and the study behind it.

In the example above, transforming a technical description into a compelling narrative was achieved by structuring the content or key message into three main elements, known as the ABT (And, But, Therefore). Once this foundation is in place, a relatable character was introduced to tell the story, making the science more accessible and engaging for the public.

September 2024. Research organizations interested in setting up a storytelling workshop can reach out to EU-LIFE to obtain training materials.

The workshops can benefit researchers by helping them develop essential communication skills, such as crafting engaging stories and explaining complex

scientific concepts in ways that everyone can understand. This ability can not only boost their confidence in public speaking but also make it easier for them to pitch their ideas to funders and peers, as well as to share their research with people outside their field and with the media.

“I felt confident and engaged in the concept of science communication through storytelling,” one participant says. “I found the workshop very useful, and I apply many things that I learned in my presentations,” another participant adds.

For the wider community, the impact of the workshop can be just as significant. By improving how

researchers communicate their work, the workshops help bridge the gap between academia and society. Better science communication can help demystify science, making it more accessible to the public. These efforts contribute to a more scientifically literate society, which can lead to increased support for research and informed decision-making on science-related issues.