27 SEPTEMBER 2021

SIMONA CERRATO

TECHNIQUES OF SCIENCE COMMUICATION

WHY AND TO WHOM

The dialogue between science and society is necessary and participating actively in this dialogue is considered a duty for every researcher and an integral part of the research work. It can also be a source of great personal satisfaction and sense of fulfillment of a socially useful task that goes beyond the mere achievement of scientific results. The need for greater cohesion between science and society has also been acknowledged by the bodies that finance research. Access to public funds through the main international and national financing programs now requires an impact on society that goes well beyond the mere dissemination that often is limited to a badly-made web page, leaflet or newsletter. To obtain a position or a career progression, young researchers must demonstrate their commitment to public engagement and outreach activities. Public engagement has become part of the research process.

There are many ways in which this dialogue can be carried out and many tools to engage the public in science and technology. Yet, often researchers feel unprepared or inadequate to face the public, lack the appropriate skills, or think that this task is not for them. All over the world training programs aiming at supporting researchers are multiplying and often specific courses are offered within master and doctoral curricula. Most of these courses teach specific techniques which are certainly useful for feeling more confident and develop technical skills. However they aim at short-term goals and may be short-lived.

In fact, it is not enough to learn the rules on how to make a good presentation, face an interview or deal with a middle school class to make a communication that has a significant impact. To achieve long-term objectives, strategic planning must be developed within a well-defined frame. For this, it is necessary to know the context in which science lives, how society and citizens perceive science and see their future, how science relates to other compartments of society, how to align your communication with your identity, values and vision, etc. Otherwise the impact of any communication is limited and not very effective, even if you may become more and more proficient. It can be reduced to a partial waste of time, and can even be dangerous, because in the long run it can damage the image of science and its reputation.

Along with the tips and tricks of effective communication, this course intends to give a general basis of science communication and its best practices, to reflect on the public role of scientists in society and the goals of science communication. It tries to make researchers aware about their objectives so that each one can then develop their own path and know how to adapt their activities and style as new needs emerge or as they face different situations and audiences.

STRUCTURE OF THE COURSE

The course will be structured in a series of topics covering very varied aspects of science communication. Each topic will be addressed with short theoretical lessons to share a common language, and many practical parts where the participants will be personally involved with workshops and presentations.

The participants will develop their own communication project with the ongoing assistance of the professor. The final exam will also consist of practical work.

PROGRAM OF THE COURSE

P | PRACTICAL SESSION T | THEORY SESSION

LET'S START

P | Ice breaking: let's know each other

P | Why communicate science and maths

T | The program of the course.

1. INTRODUCTION TO COMMUNICATION OF SCIENCE

T | There is no research without communication

T | The need of a dialogue between science and society

T | The public role of researchers

T | Your impact without and outside the academy: the relevance for your career.

2. WHAT IS SCIENCE COMMUNICATION

T | Science communication as a practice

T | Science communication as a research field

T | Science communication as a job

T | We are not alone: conferences, associations, networks.

3. FROM THE DEFICIT MODEL TO PARTICIPATION

T | Science and society

T | The deficit model in science communication

T | The dialogue model in science communication

T | The participation model in science communication.

4. US AND THEM: PUBLIC PERCEPTION OF SCIENCE

T | Who the public is, or, better, who are the publics are

T | What people think of science and scientists

T | Special publics and special needs.

5. PLACES AND TOOLS OF SCIENCE COMMUNICATION

T | Traditional and unexpected places

T | The role of the media

T | Exhibitions, science centre, museums

T | Theatre, art, festivals

T | Alternative places

T | Citizen science, science shop, maker, DIY, board game, tinkering.

6. CONTROVERSIAL SCIENCE

T | Definition of controversial issues

T | Controversies inside the scientific community

T | How to deal with complex issues

T | Technological applications and ethical implications.

7. DISCUSSION BASED COMMUNICATION AND EDUCATION

T | Definition of discussion games

P | Let's explore your favorite controversial issue

T | A bit of history: from *Democs* to *Playdecide* and beyond

P | How to play *Playdecide*

P | Other formats: priority game

P | Other formats: discussion continuum

P | Other formats: the emotions of cinema

P | Other formats: from the news to discussion

T | Discussion based learning: how to use discussion game at school

P | Let's create our game 1: basic rules

P | Let's create our game 2: the ingredients

P | Let's create our game 3: how to set the space and manage the time

P | Let's create our game 4: language and images

P | Let's create our game 5: facilitation

P | Let's create our game 6: let's play your games.

8. DIVERSITY AND INCLUSION

T | Science is still an élite: *pale male and stale*

T | The diversity wheel

T | Science capital

T | The international situation through figures and statistics

T | Women in science

T | The key words to act: recognition, respect, valorization

P | Some examples: the Children's Universities and other beautiful things

P | What we can do.

9. SCIENCE STORYTELLING

T | The key factors to create an engaging story

T | The ingredienti of a good story

T | Example of good science journalisms

T | The inverted pyramid

P | Some examples

P | How to transform a research into a news.

10. PUBLIC SPEAKING

T | What a public presentation is and what isn't

T | Four fundamental questions

P | From idea to delivery:

a) Brainstorming
b) Grouping
c) Storyboarding
d) Produzione
e) On stage

T | Practical tips

T | A special presentation: the elevator speech

P | Some beautiful examples.

11. THE INTERVIEW

T | Who the journalists are and what they want from us

T | What an interview is and some gode examples

P | How to prepare an interview.

12. SHARING YOUR PASSION FOR SCIENCE WITH DIFFERENT PUBLICS

T e P | From the publica percepito of science to practice. Two special publics: children and over 65

P | Ice breaking activity and other games

T e P | How to manage your public: how to engage, select volunteers, how to make the public ask questions, how to silence a school class, etc.

P | Some examples from around the world

T e P | How to close an activity.

13. DID IT WORK

T | The evaluation as an essential tool to improve and learn

T e P | A possible methods in 12 steps

P | Some easy and practical tools to use on the fly.