

# SCIENCE COMMUNICATION: SHARING KNOWLEDGE AND CREATING CONNECTIONS

MARCH 2023 - SEPTEMBER 2023  
BLENDED INTENSIVE PROGRAMME  
(BIPS)



The society of knowledge requires fluid communication between knowledge producing institutions and its publics. Knowledge of the main development paths of scientific-technical research - and of its main risks and benefits -, as well as access to the relevant research conducted in the social sciences and the humanities are a fundamental element of our contemporary culture, and the existence of specialized communicators is therefore essential.

# General Information

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## **Starting date of the program:**

- 22nd of March
- Confirmation to selected participants may happen just one week in advance.

## **Participants**

- Max. number of participants: **40 PhD candidates**
- All research disciplines and CIVIS universities are welcome
- Selection of participants will be based on their motivation. A second selection will take place to allow fair representation of disciplines, universities and gender.

## **Lectures**

- Online via Zoom / TEAMS / Google Meet + One mobility week in Universidad Autónoma de Madrid
- Every Wednesday for 15h-17h CET (except for the first week 22nd/24th March). See dates below.
- There are two roundtables in the program that take place on a Friday for 1h
- Some lectures will require homework and previous reading

## **Grading**

- Attendance counts up to 50% of the final grade
- Final group project: 50%
- The 6 ECTS can only be obtained if attendance reach a minimum of 70%

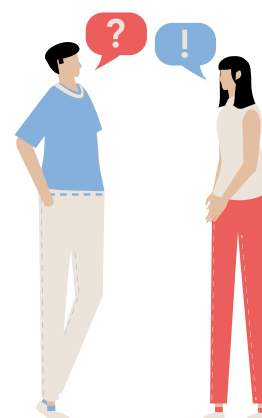
## **Mobility week in Universidad Autónoma de Madrid**

- 26th -30th June
- Participating students will receive a mobility grant of 70 EUR per day of physical mobility (5 days).

## **CIVIS Moodle**

- All lectures will be recorded
- Access to the moodle will be provided in due time

If you have doubts about your eligibility or about the BIPS in general, please, [consult the following link](#).



# Communicating Science: Lessons from the History of Science

**Dr. Mihnea Dobre (University of Bucharest)**  
**22nd March (15h-17h CET, online)**

Why do we trust science? The authoritative voice of nowadays scientists is often limited to the audience of their immediate peers. Theories and technologies employed in the scientific practice are too complex for the general public. Yet even a slightly educated public will trust science. This course explores some of the reasons of the current trust in science, which are linked to the history of science.

The course offers an introduction to the history of science, aiming to familiarize the participants with some of the key concepts in the field. The course will address the problem of the use of established narratives about well-known episodes and historical figures in the history of science. It will showcase the benefits of informing from trusted historical sources, and of avoiding the pitfalls of oversimplification or misrepresentation of several episodes in the history of science.

Topics to be discussed:

1. What is Science and When It Appeared?
2. The Scientific Revolution of the Early Modern Period
3. Why Communicate Science: the first scientific journals
4. How to Distinguish Science from Non-Scientific Topics? The case of Newton
5. Experiments in Science and Pseudo-Science

## Methodology

The course is interactive. Lectures will introduce some of the key concepts in the history of science, but it will encourage participation in the discussions about fundamental texts in the history of science and reflection upon the problem of trust, and the demarcation problem. The online format allows us to use already digitized materials, while addressing the issue of accessing reliable resources on the internet.

## Objectives

1. The ability to document reports with reliable information from historical sources.
2. Placing scientific results in a larger narrative structure.

# Science in Popular Culture and Popular Science

**Dr. Mircea Sava (University of Bucharest)**  
**24th March (15h-17h CET, online)**

The course of Science in Popular Culture and Popular Science aims to provide students with the tools for analysis and construction of media products and communication campaigns, necessary for public relations in the context of contemporary society, which can no longer be thought without taking into account the impact of science and technology. The course will briefly present the main theoretical models of science communication (linear model, network model, deficit model, public engagement model, etc.), and will then focus on the analysis of case studies on science promotion. Media products and public relations campaigns for science implemented on a variety of popular channels will be discussed:

1. Awareness campaigns (Royal Society of London, Global Response to Climate Change)
2. Integrated public relations campaigns for science (European Space Agency, Hubble 15th Anniversary project)
3. Promoting science online (TED. Ideas Worth Spreading)
4. Science festivals (Genoa Science Festival, New York World Science Festival)
5. Theatre, dance and music for science communication: (Spooky Action: The Drama of Quantum Mechanics, Three Theories contemporary dance performance, a Brief History of Rhyme rap album)
6. TV series and sitcoms (Star Trek, The Big Bang Theory)
7. Science fiction films (Interstellar)

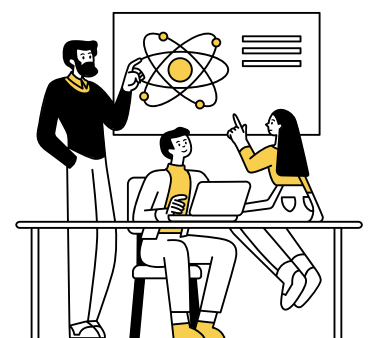
## Methodology

Case studies selection

1. Representations of science in science fiction films, case study: Interstellar (2014).
2. Public relations campaigns for science. Case study: Global warming.
3. Physical theories in popular culture. Music, film and TV series about the workings of the Universe.

## Objectives

Course objectives include explaining the specifics of science communication processes, understanding the role and importance of science promotion in contemporary society, analyzing strategies and techniques used in concrete science promotion approaches (case studies) and, last but not least, acquiring the necessary tools to create original media products on various channels for science communication.



# Perspectives beyond outreach

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**Dr. Ingrid Van Marion (Université libre de Bruxelles)**  
**29th March (15h-17h CET, online)**

Science communication is an emerging academic discipline. During this course we will discuss the scientific field, academic education, professional roles, and evidence-based science communication. Even though science communication is often associated with outreach, or explaining research to a lay audience, this course will show how science communication is everywhere. Participants will reflect on communication of science and technology between people with a variety of different backgrounds.

Science communication also takes place in contexts such as policymaking, industrial processes, marketing of science and technology, integration of innovation in society and participatory research or citizen science. We will discuss a diversity of these contexts, and think about different audiences, different roles for the science communicator, and how different communication strategies influence effective science communication.

## Methodology

There will be a hands-on approach to design a basic communication strategy. Participants will learn how to adapt a science communication initiative to specific publics and aims, using the appropriate channels and tools.



## Roundtable | Scientific images in the history of science

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**Dr. Mihnea Dobre (University of Bucharest)**  
**31st March (15h-16h CET, online)**

## Methodology

*Roundtables are a free space where to discuss about a topic in particular in an informal and participative way. These will take place for one hour once a month and are completely voluntary. There will always be one or several lecturers attending to animate the discussion.*

The University of Bucharest aims to address questions such as what is a scientific image and when was the use of illustrations in the scientific publications established. The roundtable format of the meeting allows discussions about a variety of practices, from the different role of the images (e.g., descriptive vs epistemic) to a diversity of practices in the use of scientific images in several research fields.

# Museums of Science and Technology

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**Dr. Christos Papatheodorou and  
Anastasia Doxanaki  
(University of Athens)  
3rd May (15h-17h CET, online)**

During this course, participants will learn about the following topics:

1. Definitions, main characteristics and typology of Museums of Science and Technology (MuST)
2. MuST and Science Communication: Contribution and Impact.
3. Virtual Museums and Virtual Tours
4. Creating online exhibits

## Methodology

1. Hands-on activities - designing a virtual tour
2. Task/homework: Design an implementation of a tour in a virtual museum.

# How to compose a scientific video? I

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**Paloma Banderas and Luis Gómez  
(Universidad Autónoma de Madrid)  
10th May (15h-17h CET, online)**

The workshop is aimed at students and professionals linked to the field of science and communication, interested in disseminating or promoting scientific projects through audio-visuals. In the course participants will learn the keys of audio-visual language and will use tools and processes of production. Work in groups is encouraged and at the end of the course, each participating group will have produced its own scientific micro-video.

Sessions 1 and 2: Audiovisual language and audiovisual production. General theory, tools and processes. Key aspects and useful tips. Joint analysis of examples will be complementary to the workshop.

# Sharing knowledge and expertise in collaborations

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**Dr. Ingrid Van Marion (Université libre de Bruxelles)**  
**17th May (15h-17h CET, online)**

During this course we discuss the role of how different types of expertise (academic, professional, and experiential) that are present within networks and collaborations influence science communication. We discuss common communication problems and which conditions need to be present to make scientific collaborations more successful.

## Methodology

The course will invite students to reflect on their research project from a knowledge brokering perspective, explain to them how to identify and map the stakeholders that may be involved in or affected by their study. The benefits and challenges of knowledge brokering will be identified, and the skills and personal attributes of a knowledge broker will be analysed, in order to encourage the participants to develop them in the future. The course includes a practical exercise through which the participants will learn how a social research method can be used as a public-engagement tool.

# How to compose a scientific video? II

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**Paloma Banderas and Luis Gómez**  
**(Universidad Autónoma de Madrid)**  
**24th May (15h-17h CET, online)**

The workshop is aimed at students and professionals linked to the field of science and communication, interested in disseminating or promoting scientific projects through audio-visuals. In the course participants will learn the keys of audio-visual language and will use tools and processes of production. Work in groups is encouraged and at the end of the course, each participating group will have produced its own scientific micro-video.



## Roundtable II: Citizen Science

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Isabelle Galvez and Hannah Robin (Aix-Marseille Université)  
26th May (15h-16h CET, online)

### Methodology

*Roundtables are a free space where to discuss a specific topic in an informal and participative way. These will take place for one hour once a month and are completely voluntary. There will always be one or several lecturers attending to animate the discussion.*

Aix-Marseille University will propose a roundtable meeting with a panel of researchers who lead citizen science projects. Fire risk mediation, music impact on learning, exoplanets exploration... are some examples of research topics that could involve citizens (schools, artists, inhabitants...). This discussion invite participants to question involvement in citizen science program, methodologies and tools, ethics issues...





## Writing about science I

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**Dr. Ingrid Van Marion (Université libre de Bruxelles)**

**31st May (15h-17h CET, online)**

During this course, the participants will learn about the differences between journalistic and academic science writing. The course will provide the basics of science journalism as well as techniques and tips to feel more comfortable writing, whether it is a press article, a blog post, or a draft press release. The sessions will include the analysis of articles written by professional journalists specialised in the coverage of science, and by scientists that have taken the challenge of communicating to the general public on news websites such as The Conversation. We will also discuss how researchers can prevent exaggeration of scientific research outcomes.

Through exercises, the participants will practice and gain feedback on how to write short news articles. Attention will be paid on how to avoid jargon, and which stylistic forms can be used to engage readers when writing longer feature articles.

## Managing your social media presence as a researcher

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**Dr. David Domingo (Université libre de Bruxelles)**

**7th June (15h-17h CET, online)**

This course will address the differences between general social media platforms (Facebook, Twitter, Instagram, LinkedIn, Youtube, TikTok, Mastodon) and specialized ones (Academia.edu, Research Gate), in order to help researchers to make strategic decisions about which one to use to communicate about their research and share their expertise.

The course will address the following topics: visibility strategies on social networks; online communities and scientific exchange spaces; harassment and antagonism - issues and solutions. This training alternates discussions, exchanges of experience and practical exercises on social media, with the aim that researchers can reassess their existing uses and plan future strategies.

# How to create a podcast? I

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**Carmen Rodríguez**  
**(Universidad Autónoma de Madrid)**  
**14th June (15h-17h CET, online)**

This workshop has been designed to help you create your own podcast for science dissemination. We will learn from the best examples available, and we will analyze the main elements that conform a podcast, and you will be able to put them together to create a unique piece with a personal voice. In the first session, students will learn how to disseminate science through radio programs and podcasts. Course participants will also be introduced to the software that will be applied for recording the broadcast.

# How to create a podcast? II & Activities open to the general public I

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**Carmen Rodríguez and Alejandra Goded**  
**(Universidad Autónoma de Madrid)**  
**21st June (15h-17h CET, online)**

In the second session of 'How to create a podcast', there will be individual tutorships to address the specific challenges of the podcasts envisaged by the participants.

Activities for the public are more and more popular in science communication because of their great success in bringing science closer to the public in an entertaining way that makes the audience feel comfortable and confident in their ability of understanding. In this first session, we will analyze the usefulness of these activities and what educational objectives can be achieved with them, beyond the mere transmission of scientific concepts. At the end of the session, we will create working groups and distribute the topics for the practical activity.



# Mobility week schedule in Universidad Autónoma de Madrid

26th June to 30th June\*

## Monday 26th June

### **How to read scientific texts** - Dr. Mihnea Dobre (BU) - 2h

The course follows up the discussions about the significance of the history of science in the early part of the program. It will address questions related to framing, audience, and narrative structure.

### **How to compose a scientific video III** - Paloma Banderas and Luis Gomez (UAM) - 4h

Third session of the workshop on how to create a scientific micro-video. The students will learn how to create an audiovisual production. You will create your own scientific outreach video in a group.

## Tuesday 27th June

### **How to create a podcast III** - Carmen Rodriguez (UAM) - 2h

The third session will focus on listen to the recording of the course participants to share the outcomes of the work done and learn collectively from each other.

### **Activities open to the general public II** - Alejandra Goded (UAM) - 2h

There is a wide range of literature on educational science experiments that can be done to complement all kinds of scientific explanations. Experiments are a very fun, effective and engaging resource that can be exploited to great effect if we know how to do it. In this session, the students will have fun doing some simple science experiments. Each experiment will be presented in a way that serves as an example to show a different methodological approach that can be used in this type of activity.

### **Scientific Image and composition I** - Enrique Sahagún (UAM) - 3h

The purpose of the workshop is to help improve the production of images in the context of scientific dissemination. We will discuss simple methods and shortcuts to increase the communication value of our images and compositions. Finally, we will propose and describe different software for image creation.

General insight: Importance of images in dissemination of science. Image requirements. Visual communication channels. Styles. Technical aspects: Computer graphics, types and nature. Color spaces and color models. Resolution, size and number of pixels. Practical exercises.

**\* This is a draft timetable. The official times and hours as well as lecturers may change.**

## Wednesday 28th June

### **Writing scientific articles workshop** - Isabelle Galvez and Hannah Robin (AMU)

This interactive workshop will focus on how to write a short and attractive presentation of your topic of research. Content, clarity, charisma... 3C that will help you to adapt and organize your writing.

### **Activities in front of the public III** - Alejandra Goded (UAM) -3h

In the last session, the students will complete the analysis of the methodologies presented in the previous session and recap all the elements that should make up a good quality public activity. The working groups will then have time to make final improvements to the practical exercise before presenting it to the rest of the group and receive feedback.

## Thursday 29th June

### **How to compose a scientific video IV** - Paloma Banderas and Luis Gomez (UAM) - 4h

#### **Individual work**

Participants will be able to record and produce their own material in the UAM campus and will be editing it later with the support of the lecturers.

## Friday 30th June

### **How to create a podcast IV** - Carmen Rodriguez (UAM) - 2h

### **Scientific Image and composition II** - Enrique Sahagún (UAM) - 2h

- Illustration examples and discussion.
- Practical exercises.
- Evaluation

**\* This is a draft timetable. The official times and hours as well as lecturers may change.**

## **Communicate persuasively about your research** - Dr. Marc Vanholsbeeck (ULB) 4h

This course alternates theory, collective analysis of concrete cases and practical exercises. We will revisit the general understanding of the notion of "science communication" and its main communication and societal challenges, notably in the context of the current pandemic. Based on a comparison between the grammars of scholarly communication and persuasive communication, we will see how to communicate the results of a research project orally in an effective way to a non-specialist public, without distorting the epistemic content of the research. In particular, we will learn how to master the arguments of analogy, framing and community when popularising. Basic elements of nonverbal communication will be presented. Participants will have to present in an attractive manner a short statement (1 minute) about their current research project. Through selected examples, we will analyse real situations of science communication, in order to draw practical lessons that can be implemented either in oral scientific popularisation or through audio-visual media. We will learn how to structure 1) a public speech; 2) answers to journalists. As a practical exercise, selected participants will present their current research in three minutes, in a popularised and persuasive way.

**Participating students will receive a mobility grant of 70 EUR per day of physical mobility (5 days).**

**Students who opt for a green travel will receive up to 4 days of additional individual support to cover travel days for a return trip, if relevant.**

**if you have further questions about the BIPS, please, [consult the following link](#)**

**\* This is a draft timetable. The official times and hours as well as lecturers may change.**

# Final group project

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**6th September to 27th September**

In September, participants will have to hand their final project to the evaluation committee to receive feedback. This task consists of a group project of about 4 to 5 participants maximum around the organization of a scientific communication event, in particular, the European Researcher's night. The groups will be assigned by the lecturers depending on the research topic and interest of the participants.

The committee will assess the following competences:

- Ability to produce content (podcast, video, interview, etc.)
- Strategy developed to disseminate the event and to communicate the research project/initiative to the public (target groups, aims, etc.)
- Collaboration and organizational elements of the project

The working methodology is up to the participants and their preferred platforms for collaboration. The working groups will be able to present their projects to the rest of the participants at the end of September. The sessions will be organized in due time, always following the timeframe from the previous sessions.

## Timeline

First 30 min Q&A session for the final project (before mobility in Madrid, date to be confirmed)

6th September : Final Q&A meeting & project follow-up

15th September : project delivered

27th and 29th September : Projects presentation and feedback

Grading: 50% of final grade



# Lecturers

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## **Dr. Marc Vanholsbeeck (ULB)**

Department of Information and Communication Science (Faculty of Letters, Translation and Communication)

Marc Vanholsbeeck holds a PhD in communication studies (scholarly communication and research evaluation) and has been training researchers at Université Libre de Bruxelles in science communication and media training for several years. He has taught speech skills and public debate to the students of the Master in communication studies at ULB. Marc has extensive experience in the scientific environment, as well as in communication training in a variety of professional settings

## **Dr. Ingrid van Marion (ULB)**

Ingrid van Marion holds a PhD in Clinical Neuroscience and has a master's degree in science communication. She is a scientific collaborator at Université Libre de Bruxelles. Her research interests include knowledge brokering, expertise and Communities of Practice. She is co-promoting the creation of a Belgian science communication association, fostering interaction between education, academic research and professional practices.

## **Dr. David Domingo (ULB)**

Department of Information and Communication Sciences (Faculty of Letters, Translation and Communication)

David Domingo is Chair of Journalism at the Université libre de Bruxelles. His research explores the adoption of technological innovations in journalism, the role of social networks in shaping the public sphere, and the relationship between scientists, journalists and citizens. He is the director of the Brussels University School of Journalism (EUJB-ULB) and co-director of the research laboratory LaPIJ.

## **Dr. Mircea Sava (UB)**

Department of Journalism (Faculty of Journalism and Communication Studies)

Mircea Sava holds a PhD in Communication Studies, with a thesis on Popular Science. His research interests focus on the relations between popular culture and the public communication of science, investigating how popular science can be integrated as an efficient tool for science communication. He is also currently Director of Communications and Public Relations at the University of Bucharest, where he develops various science communication campaigns.

# Lecturers

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## **Dr. Mihnea Dobre (UB)**

The Humanities division of the Research Institute of the University of Bucharest (ICUB-Humanities)

Mihnea Dobre is Academic Coordinator of the ICUB-Humanities. He is a historian of philosophy and science, working mainly on the early modern period. His research focuses on the relations between philosophy, science, and religion in the early modern period, but branches out to new scholarly approaches (Digital Humanities) and different ways of communication and dissemination of research results (Open Science). Dobre is book review editor at the "Centaurus," the Journal of the European Society for the History of Science (ESHS).

## **Paloma Banderas Bielicka (UAM)**

Graduate in Physics (Universidad Autónoma de Madrid, UAM), Director of Photography (Escuela de Cinematografía y Audiovisual de la Comunidad de Madrid, ECAM) and Expert in Public Communication and Science Dissemination (UAM). She worked in the field of Nanotechnology for three years, from 2005 to 2008, before deciding to work in the audiovisual world. Since 2008, he has worked as a technician in the lighting and camera department on numerous short films, television and advertising pieces. She has also worked for three years, from 2016 to 2018, as an expert in science communication at the Scientific Culture Unit of the Autonomous University of Madrid. She currently works as a project manager at Filmociencia, bringing together her two passions: film and science.

## **Luis Gómez Juanes (UAM)**

Luis G. Juanes is a filmmaker and screenwriter with a degree from the Escuela de Cinematografía de la Comunidad de Madrid (ECAM), a degree in Physics from the Universidad Autónoma de Madrid (UAM) and an expert in Public Communication and Science Dissemination (UAM). Luis is the author of several audiovisual projects for television and cinema, with selections in international festivals such as Barcelona, Thessaloniki or Moscow. In the scientific field, he has worked in a laboratory of new materials applied to renewable energies. As a physicist, communicator and educator, he has designed educational projects for the European Space Agency (ESA), the National Museum of Natural Sciences (MNCN) and the National Museum of Science and Technology (MUNCYT), among others.



# Lecturers

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## **Enrique Sahagún Alonso (UAM)**

Enrique Sahagún studied Physical Sciences at the Universidad Autónoma de Madrid. At the same university he later obtained his PhD in Theoretical Physics and a master's degree in Biophysics. In 2012, mixing his interest in science and his experience in the audiovisual world, he created Scixel and joined Filmociencia. His work focuses on the production of all kinds of graphic material: from images and animations in the field of research, to 2D and 3D visual effects for scientific documentaries.

## **Alejandra Goded (UAM)**

Graduated in astrophysics, Alejandra works at the Tenerife's Science and Cosmos Museum leading the dissemination strategy. She participates in European educational projects with scientific activities, adapted to school curriculum encouraging vocations and the critical spirit. Alejandra also coordinates "Planeta Ciencias" a science dissemination platform that offers camps, workshops and trips for groups to learn about science in a practical and innovative way.

## **Carmen Rodríguez López (UAM)**

Carmen Rodríguez López holds a degree in Political Science and Sociology from the Complutense University of Madrid (UCM) and a PhD from the Autonomous University of Madrid (UAM). She has carried out pre-doctoral and post-doctoral research stays at Boğazici University (Istanbul) and has taught at Istanbul Technical University on the formation of the Republic of Turkey. In Spain since 2006, she has been a contract researcher at the Taller de Estudios Internacionales Mediterráneos of the UAM and lecturer in the undergraduate studies of the University of London International Programmes, under the academic direction of the London School of Economics, taught in Spain by the Madrid Management Center, in the areas of Comparative Politics and European Union Politics and Policies. At the Complutense University of Madrid she has been Associate Professor in the Department of Political Science III in the area of Political Geography. Currently, she is a lecturer in the Department of Arab and Islamic Studies and Oriental Studies at the UAM.

## **Isabelle Galvez (AMU)**

### **Scientific Culture Unit – Directorate of Research and Valorisation**

Graduated both in biology and science communication, Isabelle GALVEZ started in contact with the public of the "Palais de la Découverte" in Paris before joining the "Association Science Technologie Société" where she coordinated various events. In 2010, she joined Aix-Marseille University. As a part of scientific culture unit, she imagines and organizes projects such as European Researchers' Night. She also provides ongoing training in popularization for teacher-researchers and is an expert member for recruitment in science communication field for other universities in France.

# Lecturers

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## **Hannah Robin (AMU)**

**Scientific Culture Unit – Directorate of Research and Valorisation**

After math's studies, Hannah Robin obtained a master's degree in science communication. She worked in Public Communication and Science Dissemination at various science centers : La Cité des sciences in Paris, Cap Sciences in Bordeaux, l'Espace Mendès France in Poitiers. Now based at Aix-Marseille University, Hannah works within different networks such as the French consortium for the European Researchers' Night or Amcsti. She teaches science communication in two master (Science communication and Digital humanities).

## **Chloé Landry (AMU)**

**Scientific Culture Unit – Directorate of Research and Valorisation**

After graduating from Cultural studies and starting working in museums and theatres, Chloé Landry happily discovered science dissemination 6 years ago by joining the “Cellule de culture scientifique” of Aix-Marseille University. In the team, she is in charge of the projects with and for the youth, from primary to secondary school : workshops with researchers on campus, encounters in class, creation of educational tools... She also trains PHD students, so as they can learn to adapt their scientific discourse and find playful and adapted means to communicate with diverse audiences.

## **Dr. Anastasia Doxanaki (NKUA)**

He has a degree in History and Archaeology from the Department of History and Archaeology at the University of Ioannina and an MA degree in Museum Studies from the University College London, UK. She has also a PhD in Museum Studies from the National and Kapodistrian University of Athens. For her graduate and PhD studies she was supported by the Greek State Scholarship Foundation. Her research interests are on archaeological museums, museums of science and technology, university museums, visitor studies, and cultural policy.

## **Dr. Christos Papatheodorou (NKUA)**

He received a B.Sc. and a Ph.D. in Computer Science, both from the Department of Informatics, Athens University of Economics and Business, Greece. In 2002 he joined the Dept. of Archives and Library Sciences, Ionian University, Corfu, Greece. In 2020 he joined the Dept. of History and Philosophy of Science, National and Kapodistrian University of Athens, Athens, Greece. His research interests include Digital Humanities, Metadata interoperability, Digital Curation and Preservation, e-Science, Evaluation of Digital Libraries and Information Services, Personalized access to Digital Libraries and Internet, User Modeling and Web Mining. He is Editor of the International Journal of Metadata, Semantics and Ontologies.