



Univerza v Ljubljani

ALTERNATOR

Misliti znanost.



BOOK OF ABSTRACTS

Ljubljana, October 13–14, 2022
University of Ljubljana, Kongresni trg 12

REINVENTING SCIENCE COMMUNICATION?
CHALLENGES FOR THE POST-TRUTH ERA

Conference organized by
the University of Ljubljana,
Alternator (www.alternator.science)
and the Museum and Galleries
of Ljubljana.

REINVENTING SCIENCE
COMMUNICATION?
CHALLENGES FOR
THE POST-TRUTH ERA

BOOK OF ABSTRACTS

Ljubljana, October 13–14, 2022
University of Ljubljana,
Kongresni trg 12

International conference REINVENTING SCIENCE COMMUNICATION?
CHALLENGES FOR THE POST-TRUTH ERA is organized by the
University of Ljubljana, Alternator (www.alternator.science)
and the Museum and Galleries of Ljubljana.

Conference Organizing Committee:

Katja Škrli, Lea Udovč, dr. Sašo Dolenc, prof. dr. Tom Turk,
prof. dr. Martin Čopič, mag. Sabina Autor, dr. Anja Skapin, Janja Rebolj,
Nejc Kovačič, dr. Dejan Jontes (Head of the Organizing Committee).

Edited by: dr. Dejan Jontes, dr. Anja Skapin

Published by: University of Ljubljana Press and Založba ZRC, ZRC SAZU
For the publisher: Gregor Majdič, rector of the University of Ljubljana and
Oto Luthar, director of Research Centre of the Slovenian Academy of Sciences and Arts

Cover Design and Layout: Jernej Kežar

Printed by: Cicero Begunje, d. o. o.

Print run: 100 pieces

First edition, First print-run
Ljubljana, 2022

Publication is free of charge

First e-edition. Digital copy of the book is available on: <https://ebooks.uni-lj.si/>

DOI: 10.51746/9789617128994



To delo je ponujeno pod licenco Creative Commons Priznanje avtorstva-Deljenje pod enakimi pogoji 4.0 Mednarodna licenca. / This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License. Kataložna zapisa o publikaciji (CIP) pripravili v Narodni in univerzitetni knjižnici v Ljubljani

Tiskana knjiga / Printed book

COBISS.SI-ID= 122338819

ISBN 978-961-297-001-7 (Založba Univerze v Ljubljani)

E-knjiga / E-book

COBISS.SI-ID= 122177795

ISBN 978-961-7128-99-4 (Založba Univerze v Ljubljani, PDF)

The background features a white space with two large, overlapping, curved red shapes that create a dynamic, abstract composition. The shapes are smooth and fluid, resembling stylized ribbons or flowing paths.

CONFERENCE PROGRAMME

OCTOBER 13

8.30–9.00

Registration

9.00–9.15

Room "ZBORNIČNA DVORANA"

Welcome address:

Gregor Majdič,
Rector of the University of Ljubljana

9.15–10.30

Room "ZBORNIČNA DVORANA"

Keynote 1:

Sarah Davies: Science Communication in Challenging Times: On Democracy and Crisis

10.30–10.45

Coffee break

10.45–12.30

Room "ZBORNIČNA DVORANA"

Parallel session 1a:

Trust in Science

Psychology of Conspiracy Theories:
The Role of Cognitive Biases
–*Lorenzo Gagliardi*

The Effects of Politicians' Disinformation Accusations on Perceptions of Science and Media
–*Jana Laura Egelbofer*

Citizen Science or Crowdsourced Science as an Effective Way of Building Trust
–*Tina Eleršek, Maša Zupančič*

How to Communicate Science to Distrustful Individuals? Integrating Research on Predictors of Trust in Science and Determinants of Psychological Reactance
–*Nejc Plobl and Bojan Musil*

Analysis of Trust in Science Through the Construal Level Theory
–*Urška Martinc, Boris Aberšek, Andrej Flogie, Helena Fošnjar, Bojan Borstner, Dejan Zemljak*

Chair: Aquiles Negrete

10.45–12.30

Room "SOBA REKTORJEV"

Parallel session 1b:

(Post)graduate student session

Between Gratification and Anxiety: Autoethnographic Research on Becoming a Social Science Communicator on TikTok
–*Tinca Lukan*

Opinions and Beliefs on Vaccination in the COVID-19 Era: A Literature Review
–*Marija Zafirovska, Aleksandar Zafirovski, Michael Harris*

Storytelling in Science Communication
–*Gašper Tonin*

Citizen Science: A Reflection on New Ways in Communicating Science
–*Noemi Crescentini*

Chair: *Sabina Autor*

12.30–13.30

Lunch

13.30–14.45

Room "ZBORNIČNA DVORANA"

Keynote 2:

Mičo Tatalović: How (and Why) to Communicate Science Effectively: Lessons from the UK and Western Balkans

14.45–15.00

Coffee break

15.00–16.45

Room "ZBORNIČNA DVORANA"

Parallel session 2a:

Philosophy of Science and Knowledge Production

Science Communication Produces Knowledge

–*Adalberto Ant3nio de Castro Pimenta Fernandes*

Knowledge and Irony, Binomial of the Post-Truth Era?

–*Marco Bruno, Fabiana Battisti*

That's Just Your Opinion, Man: Science Communication in the Aestheticized Digital Regime of Truth

–*Nina Cvar, Robert Bobnič*

Scientists in PCST: Impacts of Mediatization Processes

–*Arko Olesk*

Defining Science Communication: From a Vague Umbrella Term to a Clear Concept

–*Sašo Dolenc*

Chair: *Dejan Jontes*

Room "SOBA REKTORJEV"

Parallel session 2b:

Audiences, Experts, Journalists

Understanding Audiences for Environmental Communication

–*Maja Opalički Slabe, Marina Dermastia*

Communicating Climate Change: What Can Scientists Learn from Journalists?

–*Martina Temmerman*

Which Experts Are We Listening to? Diversity and Inclusion in the Reporting of Science

–*Suzanne Franks*

Assessing the Assessment of the European Researchers Night

–*Afonso Amaral Pais, Ana Sanchez*

Chair: Sarah Davies

16.45–17.00

Coffee break

17.00–18.45

Room "ZBORNIČNA DVORANA"

Parallel session 3a:

(New) Educational Approaches

The Power of Being Educated: Scientific Discoveries Communicated with Professionals from Different Fields and with Children

–*Marina Dermastia, Anja Skapin, Jana Zierkelbach*

Education in Rural Communities: What's Next? GOMA in the Promotion of Active Microbiology Learning Strategies

–*Raquel Branquinbo, Cândida Sarabando, Cláudia Damião, Joaquim Duarte*

Engaging Schoolchildren and Students
in Scientific Research about Plastic
Pollution of Watercourses

–*Mateja Grego, Martin Thiel,
Tim Kiessling*

Words Without Experience Are
Meaningless, and We only Understand
What We Can Do: High-Tech-Instru-
ments and Multimedia Journals in the
Science Classroom

–*Alfred Steinbach, Nicolas Robin*

Digital Humanities for a (More)
Comprehensive Understanding
of History

–*Gregor Pobežin*

Chair: *Tom Turk*

Room "SOBA REKTORJEV"

Parallel session 3b:

New Forms of Science Communication

Communicating Quantum Science
and Technologies Through Cultural
Storytelling

–*Simon Goorney, Caterina Foti, Jacob
Sherson, Jorge Yago Malo, Daniele
Lagasco, Lorenzo G. Santi, Maria
Luisa Chiofalo*

Guided Tour as a Science Communica-
tion Medium: From Practicing Partici-
patory Science to Presenting Research
Findings

– *Gregor Bulc*

Let's Talk Mom: The Use of Narratives
in Communicating Neuroscience to
Low-Income Status Pregnant Mothers

–*Aquiles Negrete, Pablo Rosenblat*

The Science Critic: A Necessary Figure
in Public Science Communication

–*César Carrillo Trueba*

Chair: Patrick Wilson

OCTOBER 14

9.00–10.30

Room "ZBORNIČNA DVORANA"

Parallel session 4a:

Visual Communication of Science

Visual Communication in the Sciences:

Underdeveloped Space for Interdisciplinary Collaboration Between Art, Technology and Science

–*Petra Černe Oven*

Communicating Science Visually:

A Transdisciplinary Collaboration Between Undergraduate Art and Design Students and Molecular Chemists

–*Lisa Winstanley, Mibaiela Stuparu*

Interactive Plant Science Workshops and Science Experiments

–*Maruša Pompe Novak, Špela Baebler, Marina Dermastia*

Star Status Independent Artistic Research in the Science

–*Martin Balaz, Erik Rejta*

Chair: TBA

Room "SOBA REKTORJEV"

Parallel session 4b:

Covid and Health Literacy

Tactics and Strategies of Political Parties During the COVID-19 Pandemic Crisis: A Case Study from Cyprus

–*Panagiotis Moiras, Venetia Papa*

Think Tanks Between Science Communication and State Legitimation: Communicating the Covid-19 and the Climate Crisis in Russia

–*Vera Axyonova*

The Scientific Communication of Italian Experts: Self-Representation and Media Representation in Comparison

–*Rosanna Cataldo, Gabriella Punziano, Barbara Saracino, Ferdinando Iazzetta*

Staying Alive: A Survival Guide for 21st Century Humans

–*Patrick Wilson*

Chair: TBA

10.30–10.45

Coffee break

10.45–12.15

Room "ZBORNIČNA DVORANA"

Keynote 3:

Marianne Achiam: Post Truth, Pandemics and Wicked Problems: The Role of Science Centres and Museums in an Uncertain Future

12.15–13.30

Lunch

13.30–15.00

Room "ZBORNIČNA DVORANA"

Parallel session 5a:

**Challenges and Opportunities
for Research Institutions**

Challenges, Opportunities and Tools
for Scientists and Research Institutions
– *Alessandra Fornetti, Ilda Mannino,
Massimiano Bucchi*

Science Communication Quality
Framework as a Challenge to Academic
Institutions
– *Suzanne Franks and Arko Olesk*

Science Communication in Transition
Countries: A Thin Line Between Trust
and Distrust in Scientific Truths
– *Tamara Dagen, Melita Kovačević*

Chair: TBA

Open Communication Sciences
Intertwined with Artificial Intelligence
– *Mojca Rupar Korošec*

Role of Science Communication
in Open Science Movement
– *Monika Mačiulienė*

The Challenging Practice of Science
Communication. Case Study: HEDA
(Health Development for Albania)
– *Rezearta Murati, Irma Kuka*

Chair: TBA

15.00–16.30

Room "ZBORNIČNA DVORANA"

Keynote 4:

**Nico Pitrelli: A Complex
Mixing Console: The Different
Ingredients of Teaching Science
Communication**

Room "SOBA REKTORJEV"

Parallel session 5b:

**Open Science and Web-Based
Knowledge**

Providing Information on the Safety
of Advanced Materials via a Web-Based
Knowledge Base – Lessons Learned
from over 10 Years of Science Commu-
nication
– *D. Kübnel, A. Mattern, C. Steinbach,
N. Möller, H.F. Krug, C. Marquardt,
K. Nau*

16.30–16.50

**Closing session and
publication opportunities**

17.00

City tour:

Ljubljana feminist tour



ABSTRACTS

Psychology of Conspiracy Theories: The Role of Cognitive Biases

A relatively new branch of studies in psychological research has found that people who commit certain logic errors are more likely to believe conspiracy theories. These mistakes are called biases, which are defined as systematic errors that individuals commit while reasoning or making predictions and choices. There are several types of cognitive biases, but it's useful to make a distinction between those who contribute to the formation phase of such anomalous beliefs and those who operate in an updating phase. Specifically, we argue that biases related to the judgement of the likelihood of an event based on its resemblance with a priori stereotype (representativeness heuristic – Kahneman & Tversky 1972) occur in the formation phase. Among these, Leman & Cinnirella (2007) have found that proportionality bias correlates with conspiracism. Proportionality bias is the tendency to think that “big events” have “big causes” - e.g., individuals who suffer from this bias might attribute the cause of a pandemic to an international secret plan orchestrated by powerful individuals to control world population, rather than to a random spillover coming from a small bat. Similarly, other scholars (e.g., Brotherton & French 2014, Wabnegger et al 2021) have found a correlation between causal conjunction bias and conspiracism. On average, people who overperceive causal connections between co-occurring independent events endorse conspiracy theories more than others. Finally, another cognitive bias that has been found to correlate with conspiracism is intentionality bias, which is the tendency to over-detect intentions and agency behind random events (e.g., Brotherton & French 2015, Douglas et al 2016). After being formed, these beliefs get updated in a biased way: when confirmation bias kicks in, conspiracy believers tend to seek out only consistent information, while neglecting and/or misinterpreting disconfirmatory evidence (Lord et al 1979), leveraging on conspiratorial unfalsifiability (Goertzel 2010). Moreover, the excessive coverage of conspiracy narratives and disinformation “gurus”, both through mainstream media and polarized sources (e.g., social media platforms), might trigger availability bias (Tversky & Kahneman 1973), as these information systems make fake stories more salient for individuals, and as a result, the ease with which individ-

uals can recall anecdotes might corroborate their erroneous beliefs. All these cognitive biases are deeply ingrained in individuals' beliefs system and might make them more immune to fact-checking strategies and data-driven scientific communication. For this reason, it's fundamental for reinventing science communication for the post-truth era.

Jana Laura Egelhofer

The Effects of Politicians' Disinformation Accusations on Perceptions of Science and Media

In today's "post-truth" world, attacks on the legitimacy of expert knowledge and scientific facts are on the rise, likely impeding effective science communication (e.g., Hameleers & Van der Meer, 2021; Mede & Schäfer, 2020; Van Aelst et al., 2017). Some even say discrediting science has become a political strategy (Oreskes, 2019). In recent years, politicians frequently labelled scientific information as disinformation. Especially populist politicians frequently target authoritative information sources, arguing these are part of an "evil elite," deliberately misleading the public by spreading "fake news" (Egelhofer & Lecheler, 2019; Mede & Schäfer, 2020). In the context of decreasing science trust and growing online hostility towards experts, this type of discourse is highly concerning. However, thus far, we lack empirical evidence on how these accusations affect public perceptions of scientists and journalists as providers of expert information. While research from the US suggests that disinformation accusations against news media negatively affect media trust (e.g., Guess et al., 2017; Van Duyn & Collier, 2019), we do not know how influential attacks on authoritative information sources are in countries characterized by higher audience trust in public institutions. To fill this gap, this pre-registered survey experiment (N = 771) tests how the use of disinformation accusations such as "fake news" and "fake science" by a politician affects citizens' trust in journalists and scientists and the information provided by them. Furthermore, it tests whether this discourse renders hostility towards journalists and scientists acceptable. Setting this study in Austria, we expand our knowledge of politicians' attacks on authoritative information sources beyond the US context. Findings suggest that the effects of disinformation accusations on citizens' perceptions of scientists and

journalists are limited. Only individuals with strong anti-elitist attitudes are susceptible to these accusations and indicate less belief in discredited scientific information.

Tina Eleršek and Maša Zupančič

Citizen Science or Crowdsourced Science as an Effective Way of Building Trust

As we face global challenges, we see that citizens are open and willing to engage in creative ways with science to show they do care for protecting endangered species, safeguarding water sources, preventing disease or accelerating medical research, etc. Citizen science bridges gaps by harnessing the power of people who are motivated by curiosity or concern or a desire to advance research in their communities. Typically, public involvement is in data collection, analysis, or reporting. Citizen involvement practice has several features: (a) anyone can participate; (b) participants use the same protocol, therefore, data can be combined; (c) data can help real scientists come to better conclusions; (d) a wide community of scientists and volunteers work together and share data accessible to the public as well as scientists. “Community science”, “crowdsourced science”, “volunteer monitoring” and “public participation in scientific research” are also common aliases for citizen science. At the National Institute of Biology, we thrive on projects that have a high level of engagement with citizens as we thrive to build trust in science, to bridge the gap between awareness and taking an active role in nature protection. Based on experiences, the National Institute of Biology is presenting environmental communication cases as best practices in citizen science.

An example of best practice is the creation of the website www.ciano.si where citizens can learn all about cyanobacteria in Slovenia and participate in recording their occurrence. The social media-linked website was designed by the staff of the Working Group Ecotoxicology from the Department of Genetic Toxicology and Cancer Biology of the National Institute of Biology. In addition to general information about cyanobacteria and cyanotoxins, it offers visitors a guide to identifying cyanobacteria in the environment, an interactive map of areas at risk, and tips on how to protect against the negative effects of cyanotoxins. We pursued two goals: first, to collect all the information in one place and plot the cyanotoxic potential on the map of

Slovenia, and second, to involve residents in our research. Residents can help us by sending the location and a photo of the area they believe has the potential for toxic cyanobacteria. Examples of photos are also available on the website to identify this coloured layer on the water surface. These areas are then sampled, analysed in the laboratory, and tested for the presence of toxic cyanobacteria potential. The data from the analyses are posted on the map on the website. In just the first month of the website's operation, we have already received 10 field photos and we expect more responses in the summer months when the presence of cyanobacteria in Slovenian waters is even more widespread.

Nejc Plohl and Bojan Musil

How to Communicate Science to Distrustful Individuals? Integrating Research on Predictors of Trust in Science and Determinants of Psychological Reactance

In the last decades, we are witnessing the polarization of trust in science; it has remained relatively stable or even increased in certain subgroups while steeply declining in others. Although such a divide has existed before, it gained a lot of traction with the recent onset of the COVID-19 pandemic, during which the lack of confidence in science and scientists was one of the main drivers of endorsement of conspiracy theories and the lack of adherence with preventive measures. In light of recent events, researchers are increasingly investigating the predictors of trust in science to better understand the subgroup of individuals that are the least trustful of science. Moreover, experts all around the globe are expressing the need for solutions that may help effectively communicate evidence to these sceptical individuals and, over time, help build trust in science and scientists. In this presentation, which will synthesize research from our department and other relevant studies, we will first define trust in science and highlight its potential consequences. Second, we will cover the essential ideological (e.g., political orientation) and cognitive (e.g., education level) predictors of trust in science. Third, drawing from the literature on psychological reactance (i.e., unpleasant motivational arousal to messages that seemingly threaten individuals' freedom), we will provide a possible explanation of what these distrustful individuals may be experiencing when being on the receiving end

of science communication. Lastly, following this line of reasoning, we will propose how messages containing scientific information may be constructed to reduce unintended consequences, such as anger and negative cognitions experienced by distrustful individuals. We argue that such careful messaging is one of the more important measures that need to be taken to bring science closer to those who may need it the most and build a resilient society capable of dealing with diverse crises.

*Urška Martinc, Boris Aberšek,
Andrej Flogie, Helena Fošnjar,
Bojan Borstner and Dejan Zemljak*

Analysis of Trust in Science Through the Construal Level Theory

This paper analyses trust in science. The first part examines what science is and how it is identified. The next section briefly examines the problem of fake news, which is based primarily on the possibility of proving and/or arguing by means of logical arguments, and to which the idea of trust in science is closely related.

During the pandemic of Covid-19, especially in the year 2020, the world was faced, more than ever before, with an overwhelming abundance of (often conflicting) information. On a daily basis, people dealt with questions such as: which information is relevant? Whom can we trust? Which information is real, and which is fictional? In addition to the overabundance of information in general, the release of Covid-19 vaccines saw vast amounts of false data, fake news, and conspiracy theories emerging. Many people were confused by all this and were unable to make sense of the situation in which we all found ourselves. Regardless of all, it was science with its many, though perhaps seemingly unrelated scientific disciplines, that has played a vital role in this new situation. The crucial question, however, still remains open – can we (or should we at all?) have confidence in science (trust in scientific fields such as medicine, vaccines, environment, education, technology, etc.)? This was the main impetus for exploring why science is the foundation of modern society and why we need to trust it.

The focal question around which this paper centres is: Are there differences regarding the perception and trust in science of a field that is *current and concrete*, such as the Covid-19 situation, compared to

a field that is more *abstract and long-term*, such as environmental issues? Supported by the Construal Level Theory (CLT), this paper assumes that there are differences in the perception of science which is short-term and concrete (*low-level construal*), and science which is long-term and abstract (*high-level construal*). The results showed that there is a connection between general trust in science and trust in science in specific scientific fields. In addition, results showed that there are differences in trust in science in the context of CLT. The results also showed that what contributes the most to the trust of a wider mass of people in science, is the work of scientists and their research.

Tinca Lukan

Between Gratification and Anxiety: Autoethnographic Research on Becoming a Social Science Communicator on TikTok

Over the past decade, we have witnessed the “platformization” of science communication with social media platforms becoming the primary venues for scientists to communicate their texts, findings, and arguments. The present study scrutinizes how the platformization of science communication has changed the very substance of the profession, as scientists have developed new roles due to the affordances of social media platforms. Methodologically, the study draws on autoethnography, a research method that describes and analyzes personal experiences to understand cultural experience, and in which the researcher is the primary data collector and interpreter of the meaning of the data. I present the findings of my autoethnographic field research, in which I myself became a social science communicator on TikTok, which is part of my PhD research on the working conditions of social media content creators in Slovenia. Since November 2021, I have been writing field notes about my encounters, thoughts, and emotions on becoming a TikTok creator. The results show that science communication on social media platforms requires scientists to engage in a variety of practices beyond those of their profession. First, producing “user-generated content” for TikTok requires becoming an actor, director, stager, scriptwriter, and location scout, thus embodying a Hollywood production studio in one person. Second, the content created is evaluated by metrics of audience engagement which evoke feelings of gratification or anxiety depending on how

well the content is received and how successful they are at cultivating a community of people around their work. Finally, to make their content visible, scientists develop certain algorithmic imaginaries that determine future content production. Informed by Max Weber's more-than-century-old classic lecture *Science as a Vocation*, I conclude by discussing how the defining characteristics of the profession have changed in the wake of the platformization of science communication. Namely, the distinction between scientists (people who do science) and creators (people who produce content online) is blurring. In the ecosystem of social media platforms, the scientist becomes one of the many creators trying to make their content visible, competing with the voices of gamers, journalists, lifestyle influencers, bots, conspiracy theorists, and many others.

*Marija Zafirovska, Aleksandar Zafirovski
and Michael Harris*

Opinions and Beliefs on Vaccination in the COVID-19 Era: A Literature Review

Introduction: An understanding of the opinions and beliefs that people have regarding vaccines is crucial in the battle to counter vaccine hesitancy and the anti-vaccination movements. This is particularly important during global health crises such as the COVID-19 pandemic. To be able to inform the general public about the benefits of vaccination in an effective way, we first need to understand how public opinion is formed, which factors influence it, and why some opinions remain constant over time.

Aim: To illustrate the range of opinions that people have regarding vaccination, and the factors that might influence these opinions.

Methodology: Two researchers independently searched the PubMed, Embase, Medline and Cochrane library databases to identify eligible studies. To ensure that no recent COVID-19-related publications were missed, the process was repeated three times, the last one in January 2022. References in relevant publications to other studies and reviews were also checked.

Conclusion: The choice to use or avoid immunisation is a complex and multi-dimensional issue, ranging from factors specific to individuals, to factors that have an international influence. The factors can be grouped into four categories: personal beliefs, religious and philosophical reasons, safety and efficacy concerns, and the desire

for additional information. At a community level, several studies identified the influence of family and friends, as well as media and social media, and in some countries the opinions of minority groups. Studies analysing the influences at national and international levels identified the importance of economic power, politics, the organisation of health systems, and trust in the government. While all of these factors have been shown to play a role in views about COVID-19 vaccination, beliefs on safety and efficacy have been shown to be the most important.

Gašper Tonin Storytelling in Science Communication

At a time when the average person is faced with a huge amount of information every day, it is crucial to think about the way in which we present scientific discoveries to them and thus educate them. This was especially evident during the COVID-19 pandemic, when politicians and the public turned directly to science for help and guidance on how to deal with the new pathogen. One of the ways we can bring science closer to the general public is storytelling. As some research has already shown, transforming science into stories that also work on the emotional level, can help the lay individual better understand and later recall the basic scientific concepts depicted in the stories. These are also strongly intertwined with the establishment of our cultural and personal identity and therefore have an additional special power in influencing the individual's thinking and decision-making. In addition, getting to know the world through story can offer a very intuitive approach to understanding concepts that are otherwise rather complex. The work of a physician and the clinical research work in medicine are directly related to stories. The stories of patients, through which medical students get to better learn about their diseases (case reports), are often also used as a means of communicating science, even though, for this purpose, they can often also be fictional or illustrative. In our paper proposal, we will present the role of storytelling in the communication of medical sciences to the general public and present some successful examples of such communication of science in the Slovenian environment. Here, students of both faculties of medicine as well as members of the Slovenian Medical Students' International Committee in Ljubljana are making great efforts in the communication of medical sciences. The International Committee in Ljubljana operates several projects focused on

various fields of medicine, such as cardiovascular health, respiratory health, gastrointestinal health, sexual health, mental health, children's health and strengthening the immune system. Another important promoter of communicating medical sciences in Slovenia is the Society for Neuroscience, Sinapsa, which has been working for many years to promote neuroscience, as well as other societies. After the presentation of the theoretical background, examples of the possible ways of using storytelling in the communication of medical sciences will be presented on the examples of these and some other practices in Slovenia and the wider area.

Noemi Crescentini

Citizen Science: A Reflection on New Ways in Communicating Science

The public participation in the field of science and technology is mainly driven by the empower of citizenship and democratic participation (Bucchi, 2006) as well as by the need to address the technological controversies. On the base of this assumptions more scholars don't limit their work to the knowledge dissemination by media, but instead avail of new approaches as the Citizen Science (CS) intended as the contemporary frontier of science and society framework.

CS, framed as a critical factor for the science democratization, concerns the innovation project aimed to involve citizens in scientific research activities: an expanding field addressed as an approach capable to bring together both scientist and non-specialized citizens in research projects (Irwin, 1994) promoted by academical and social members to orient and share aims, implementation phases as well as data gathering and analytical procedures with citizens. This approach contributes to the learning processes for scientific investigation and to the best comprehension of research results (Riesch & Potter 2014).

On the bases of these assumptions, the aim of this paper is oriented to encourage a first reflection concerning the scientific communication for CS. Which are the main features of the communication strategies adopted by expert in CS projects? How the expert and non-expert relations feature because of these strategies?

Starting from the relevant contributions of the literature related to CS, an explorative focus on a specific case study is proposed. Qual-

itative research techniques have been held to investigate on a CS project recently implemented in the metropolitan area of Naples focused on the environmental sensibilization.

In this way, approaching CS as a field that supports research and responsible innovation processes (Sutcliffe 2011; Wickson & Carew, 2014) the attended results of this first exploration strive to help in shading light on the communication relevance and the potentialities for the open science realization.

Marco Bruno and Fabiana Battisti

Knowledge and Irony, Binomial of the Post-Truth Era (?)

From the outbreak of the pandemic to the present day, it is emerged the urgent need of science as a harbinger of solutions and truth in the fragmentation of public debate. Having become itself a fragmented interest and interlocutor, Science has experienced the same generalization as politics (Beck 1997), moreover a multiplicity of actors and platforms have attributed to it an agency superior to that of political actors, with consequent effects on the quality of public discourse and trust in the health and democratic system (Belardinelli, Gili 2020; Gobo 2019).

Embedded in the confusing regime of post-truth and the hybrid media system (Lorusso 2018; Chadwick 2013), the pandemic crisis has highlighted a deeper crisis: the criticality of knowledge structuring, as the process of coherent analysis and decoding of reality (Doctorow 2017). Therefore, this paper aims to investigate whether and how irony can become a strategic resource for spreading scientific information and knowledge.

Our hypothesis is that irony constitutes a tool for deconstructing informational clutter and promoting awareness, although the topic is controversial (Chouliaraki 2014). Potentially, we believe that it can merge the aesthetic instance of entertainment and information in the platformed society (Maffesoli 1996; Mazzoleni, Sfardini 2009; van Dijck, Poell, de Waal 2019), as the narrative logic of post-truth requires episodic exaggerations of frames and privileges emotional processing (Lorusso 2018).

In deep mediatization, the public sphere fragments and reconfigures into the individual truths of affective publics (Boccia Artieri, Bentivegna 2021; Papacharissi 2016), so informational disorder is

combined with the pattern of marked hostility toward knowledge, in which every opinion on any topic is equated (Nichols 2017). If hostility can be traced to the model of alienation (Gauchat 2011), whereby audiences experience as alienated the consequences of expert knowledge in the form of risk and uncertainty; irony, on the other hand, can cause people to abandon that idea of objectivity in science (Funtowicz, Ravetz 1993) and communication endorsed by the intuitive thinking of popular science (Asprem 2016). Common sense, in fact, reinforces confirmation bias and prevents understanding and problematizing both reality as a negotiation between interpretations and social reality constituted by and through communicative processes (Shutz 1971; Eco 2006; Luhmann in Maddalena, Gili 2017). In order to (a) identify frames and experimental narrative strategies adopted, (b) classify users' comments and detect their degree of agreement and contrast, the paper conducts a twofold exploratory analysis. On the one hand, it examines some of the most impactful and successful media products (movies and TV series) in 2020/21, such as Don't look up, Borat American Lockdown, Discrediting Borat - Season 1, and Barabascura X and Cartoni Morti videos on climate emergency and covid-19, disseminated on Amazon Prime Video, Netflix and YouTube, leading streaming platforms (We are social 2021). On the other, it analyses the comments of YouTube channel videos and relaunch posts on the authors' Facebook, Twitter, and Instagram profiles, to detect connections and feedback from randomly exposed or non-homogeneous audiences (Greco 2008; Brundidge 2010; Zuiderveen Borgesius et al. 2016).

Nina Cvar and Robert Bobnič

That's Just Your Opinion, Man: Science Communication in the Aestheticized Digital Regime of Truth

Following Foucault's notion of the regime of truth, wherein in the line with the modern epistemic settings, the truth is produced by specific scientific procedures, enacting distinctive operations of power, we can argue that the notion of post-truth is to be regarded as perhaps improper designation of a new regime of truth? If this is the case, it does not mean that truth, lies or errors have become interchangeable and to some extent indistinguishable, but that we are dealing with a transformed regime of procedures for distinguishing

them. As these phenomena are generating specific social impact, it is in this manner important to look into the mechanisms of reasoning and communication to which both science and pseudoscience refer, but at the same time not to state their incommensurability.

Instead of simply restoring the much-needed separation of science and pseudo-science, it is important to gain insight into the mechanisms of reasoning and communication, used by pseudoscience in the digital environment of transformed authenticity and information wars, for which we can state that they represent a deeper epistemological and communicational instabilities of modern information and consequently political regimes of perhaps even sth., that we are going to identify as a new aestheticized digital regime of truth.

Therefore, to raise the question of what forms of science communication are emerging in the digital environments based on the information processing technology of the aforementioned regime of truth, we will proceed in two ways. First, we will analyse the specificities of technological mediation of the so-called post-truth communication environment of this new aestheticized digital regime of truth, being distinctive for the contemporary mode of technologized mediation with its specific historical circumstances of optimized neoliberal governmentality. Second, we will take into account the long history of pseudo-scientific and occult cultures, which have been appearing and transforming in parallel with the development of modern information technology, climaxing with the Covid-19 pandemic, which has been accompanied by a myriad of social processes and discourses.

However, why even bother with such an analysis? Covid-19 has generated a complex discursive network about the post-apocalypse and its visual imaginary, as well as a kind of biopolitical paranoia, mainly ignited by traumatic (European) historical memories of deadly diseases, e.g., the plague (Black Death) on the one hand, and by (justified) fear of fascist tendencies and deep distrust of the authorities on the other. It further seems that the Covid-19 is literally urging us every day to ask ourselves, what does human mean, putting the role of mediation once again into the very centre of our everyday existence, urging us to rethink the nexus of discourse, power, affect, and politics.

Scientists in PCST: Impacts of Mediatization Processes

Increasingly, “the demand to communicate with the public has become part of [scientists’] legitimating exercises” (Weingart, 2012). Visibility of scientists is usually perceived positively in the science communication framework and efforts are made to support their public communication efforts, e.g., by providing media training to researchers.

The impacts of a close relationship with media are evaluated more critically in the theoretical approach known as mediatization. According to this framework, an extensive adaptation with media logic can distort crucial processes within a social institution and thereby alter its basic social function (Franzen, Weingart & Rödder, 2012). While science has been considered more resistant to extensive mediatization (Rödder & Schäfer, 2010), institutional changes connected with promotion culture have been noted (Välvirronen, 2021). These processes are closely tied to the strategic aims of the organizations and the perceived role of public visibility in achieving these, thereby potentially initiating mediatization processes (Scheu et al., 2014, Marcinkowski et al., 2013).

Therefore, an individual scientist is subject to a pressure to communicate with the public both from the society and their institution but, according to the mediatization approach, the adaptations to media logic that are needed to gain and maintain media visibility can potentially alter the core scientific values that guide the activities of the researcher. This paper presents the conclusions of my forthcoming PhD thesis on mediatization of scientists, where I explore how these tensions are being negotiated among publicly visible researchers in Estonia.

Based on qualitative interviews with 22 researchers, the paper outlines various patterns of mediatization among individual scientists, suggesting a more nuanced understanding of micro-level mediatization in science. I propose a set of indicators that can be used to evaluate the extent of mediatization and identify various patterns of mediatization. Those patterns are characterized by different communication-related attitudes and media interaction practices.

Combined with the mental models of science communication (Kessler et al., 2022) that define various communication goals and strat-

egies, the mediatization patterns can explain the various ways in which researchers are present in media and evaluate their impact for science, media and science communication.

Sašo Dolenc

Defining Science Communication: From a Vague Umbrella Term to a Clear Concept

Although much has been said about the importance of science communication, there is still no clear, understandable and universally accepted definition of the concept. In practice, science communication is used as a vague umbrella term that covers a variety of science-related activities and whose audience is not just a small group of professionals. The purpose of the paper is threefold: (1) to define the concept of science communication, (2) to provide arguments why science communication is a necessary part of science itself, and (3) to propose measures that would enable science communication to gain a proper place within scientific and academic community.

Although science communication as an umbrella term currently encompasses many different activities, we argue that its essence is the identification and articulation of knowledge that is established as consensus in the scientific community. The aim of a science journalist is to give the public the most credible possible account of what is happening in science, relying mainly on expert statements. Unlike science journalism, science communication does not look for the justification of its views in the statements of specific scientists, but in scientific knowledge itself.

We argue that science communication is not just about disseminating information from a small circle of experts to the general public. Science communication is a discipline whose objective is to identify, describe and interpret scientific consensus. At a time of huge scientific output, science communication is also important because it helps to draw attention to problematic parts of the scientific community. An important part of communicating science is to highlight the fake and pseudo-science that is not, and will never become, part of the scientific consensus.

Maja Opalički Slabe and Marina Dermastia
**Understanding Audiences
for Environmental Communication**

Communicating the environmental challenges has been receiving attention and engaging social scientists over the past decades. It represents a very important social narrative in many different social settings. Therefore, communicating about the issues of climate change and biodiversity loss has become not only part of a dialog but it sometimes means a real social challenge as we need to discuss greener corporate policies, ethical and sustainable consumer behaviour, dealing with threatened biodiversity, etc. Environmental communication expertise is acquiring and adopting different forms of communication and engagement skills because the social dialogue is also getting more engaged. It is sometimes emotionally charged and based on harmful pseudo-science. In the post-truth era damaged by pandemic scenarios of fake science scientists and experts are challenged/judged for the way they address and impact the non-scientific audience, present scientific evidence, show unpleasant forecasts, and interpret data and facts. Namely, when communicating environmental issues with a non-scientific audience, scientists need to engage with their views, emotions, values, beliefs, and challenges and provide solutions. Trust, credibility, context, expertise, the integrity of a scientist, and his/her academic institute are as critical as his/her message or story. Building excellent science in a modern society goes just hand in hand with building credibility and trust with society, citizens, and peers. Based on its experiences, the National Institute of Biology is presenting two flagship environmental communication cases as best practices in engagement with non-scientific audiences. **The first case study** is the EU-funded project LIFE Naturaviva, which addresses the under-recognized and, therefore, under-appreciated biodiversity in Slovenia. With different activities within the project, we have focused on different target groups, from children and students to farmers and stakeholders. We reached more than 18,000 children with more than 700 nature education days, more than 12,000 listeners with more than 300 lectures, and more than 46,000 people with online videos. We prepared several outdoor and indoor exhibitions that were seen in 40 locations all over Slovenia. With web advertising and billboard campaigns, we reached half a million to a million Slovenians in each campaign. We created and distributed nu-

merous promotional materials, TV and radio advertisements, articles in the media, competitions, educational trails, summer schools and cinemas, music concerts, etc. Our main focus was to find new and innovative ways to reach out to the public who are not (yet) interested in biodiversity and to educate them about the importance of biodiversity.

The second case study was the symposium "In the Swirl of Change: The Interplay of Water, Life, and Climate" co-hosted by the Slovenian National Institute of Biology and the non-governmental movement Youth for Climate Justice. The event coincided with the UN climate conference COP 26 in Glasgow and the UN biodiversity conference COP 15 in Kunming. The symposium focused on aquatic ecosystems because water enables life and also links much of the research at the National Institute of Biology. Presentations by Slovenian and foreign internationally recognized experts in this field addressed the related burning issues from the perspective of natural and social sciences which were additionally supported by three round tables. With the symposium, the NIB actively participated in the dialog between science, decision-makers, and young people who will bear the greatest burden of the problems of our planet in the future. Due to the COVID-19 pandemic, the symposium was organized online and broadcast by the STA. It was also streamed live on the Facebook page of the NIB and reached more than 3000 people. The key messages are that immediate action and conservation are much more economical than renaturation, that conservation pays off and is in the best interest of humanity today and in the future, presentations on how the National Institute of Biology is involved in global research on waters and biodiversity threatened by climate change, and where we need to do better as a society and as individuals. The key messages were summarized in a book and in the Environmental Manifesto that was distributed in the mainstream media and a scientific journal. The organizing committee of the symposium received a Prometheus Award for Excellence in Science Communication for 2021.

Martina Temmerman

Communicating Climate Change: What Can Scientists Learn from Journalists?

Communicating about complex issues like climate change requires professional communication skills. Scientists often work in highly specialized domains and they are so immersed in the matter that they do not see how to capitalize on lay knowledge and how to represent a state of affairs in a comprehensible way, while also sketching the bigger picture.

Journalists, on the other hand, are used to translating complex matter into understandable narratives for a large audience. Narratives are a paradigm for human perception and communication (Fisher 1984). They can influence beliefs, assumptions and attitudes of audiences (Oschatz & Marker 2020).

Based on interviews with five science journalists of the Flemish written press on the way climate change is represented in the news, I will demonstrate how they approach the available information on climate change, what they consider to be newsworthy, and how they think this new information should be represented in narrative paradigms.

Additionally, and based on the toolkit for text analysis of Moernaut, Mast & Pauwels (2018), I will analyze a number of articles of these journalists in order to illustrate the narrative choices that were made for the representation of specific climate topics. The following choices will be highlighted and explained: naming of animate and inanimate participants, processes and nominalisations, positionality, modality and rhetorical figures.

The analysis will show a number of narrative techniques which might also be of interest for climate scientists who want to communicate their findings to the general public.

Afonso Amaral Pais and Ana Sanchez

Assessing the Assessment of the European Researchers Night

The importance of science communication is increasingly recognized. Scholars advocate for more involvement from scientists, and practitioners strive to design strategies for bringing scientists closer to the public. Assessing the effectiveness of these initiatives remains

a challenge, and practitioners often rely on simple attendance metrics when defining success.

One long-standing initiative for involving scientists with the public is the European Researchers Night (ERN), an initiative funded by the European Commission (EC), which occurs annually in September. Funding requires impact assessment so each consortium designs and implements a strategy. Because few publish their results, it is not possible to learn from existing proven strategies.

In 2021, we were once again responsible for the assessment of the ERN events organized in Portugal by a Consortium headed by Agência Ciência Viva and including two research institutions: Instituto de Tecnologia Química e Biológica António Xavier (ITQB NOVA) and Instituto de Investigação e Inovação em Saúde (i3S). In total, the consortium organized 88 build-up events and 21 main ERN events, involving around 12500 participants, over 800 researchers and 21 organizing institutions.

We designed questionnaires, interviews, and boards, for collecting the views of visitors, scientists and organizing institutions. To ensure a standard assessment process across every institution, we developed a detailed set of instructions for its implementation. Build-up events were mainly a testbed, allowing for minor corrections in the assessment of the ERN main events.

As in previous editions, the questionnaire response rate was low (15.8% for participants and 23% for researchers) but visitors, scientists and institutions were highly satisfied and would recommend ERN to their friends. Results show no difference in visitors' satisfaction between different types of activities, suggesting that a successful ERN is not related to the format of interaction. Scientists also report enjoying the interaction with the public and demonstrate an intent to repeat. While some mention the importance of receiving feedback from the public, we detect a clear persistence of the deficit model views among participating researchers.

The pattern of ERN visitors suggests we are still preaching to the choir – visitors with high academic degrees and a connection to science. Nevertheless, ERN is able to attract people with no previous contact with ERN or science communication in general. Our data also demonstrate ERN is reaching younger generations, one of the main goals of ERN. Together with data from previous editions, our results highlight the importance of ERN as a contact opportunity between researchers and other publics.

Despite this success, we believe ERN results require further discussion and that ERN's impact would benefit from a more systematic data collection and a common definition of goals and impact in this context. Our experience advocates for the creation of a standardized EU impact assessment strategy, which gives a set of guidelines to each consortium, while allowing for local adjustments. This communication aims to trigger that discussion.

*Marina Dermastia, Anja Skapin
and Jana Zierkelbach*

The Power of Being Educated: Scientific Discoveries Communicated with Professionals from Different Fields and with Children

At a time when our reality is increasingly shifting to the virtual world of much fake news, excellent science communication is essential. Although today's senior scientists did not even learn the basics of many current scientific discoveries during their studies, these discoveries are now part of elementary school curricula. Our world today faces many consequences of inappropriate use of scientific discoveries – climate change, loss of biodiversity, energy crisis, pollution, biotechnology – and researchers are faced with the challenges of how to solve these problems. Scientists at the National Institute of Biology are not exempt from these challenges. Because of the speed of time, however, their discoveries often go unnoticed by the public, unfortunately. To bridge the gap between scientists and the public with scientific knowledge at very different levels, the researchers at the NIB and the editor of Alternator magazine, both recipients of the Prometheus Science Award for Excellence in Communication Science for 2021, have joined forces and teamed up with the youth magazine PIL. The idea of this coordinated action is to show and explain to Alternator's readers who are professionals from different scientific fields, and to PIL's youth readers the same research results from the NIB that have already been published in peer-reviewed scientific journals. Therefore, the biggest challenge for them is to show that no scientific topic is too difficult to be understood by an adult outside the specific scientific field or even by children. In the presentation, we will show specific examples of this unique collaboration.

*Raquel Branquinho, Cândida Sarabando,
Cláudia Damião and Joaquim Duarte*

Education in Rural Communities: What's Next? GOMA in the Promotion of Active Microbiology Learning Strategies

Armamar is a rural but delighted region, located in the interior North of Portugal, south of the Douro valley. This territory is characterised by an ageing population and a markedly reduced demographic density (overall of 5680 inhabitants; population density of 48,46/km²). It is also compounded by a reduced institutional thickness, a weak network of local actors and a peripheral economic and geographical positioning concerning large urban centres and global markets.

International studies stressed that in rural, remote and regional areas, educational offers as well as other means of learning are considerably insufficient when compared to their urban counterparts. Youths are also strongly affected by additional barriers to STEAM (science, technology, engineering, arts and mathematics) learning that can limit their ability to pursue advanced STEAM studies and occupations. This dissonance was accentuated by the COVID 19 pandemic. To develop strategies to support the development of analytical and cognitive students skills, as well as to impact their outcomes and future key challenges, the public school - Agrupamento de Escolas Gomes Teixeira, together with the municipality of Armamar and the University of Porto (through its Faculty of Arts and Humanities) created GOMA (Gomes Teixeira Science Academy) - funded by Ciência Viva National Agency in 2022. Through its different programs, GOMA's effort will be focused on the implementation of a student-centred learning approach, using empowerment and active learning strategies. This approach will not only promote the engagement of students but is expected to help the development of skills necessary for their success in STEAM fields.

Microbiology is an essential element of our everyday lives and the ongoing pandemic highlighted this. Its importance is not only the direct consequence of some pathogenic microorganisms but also on its incredible positive effect on the functioning processes related to human health, food production or even the sustaining life on Earth. Thus, key strategies to drive this knowledge beyond the scientific community achieving a more direct impact on society and to pique students' interest in microbial life, were outlined in GOMA's program.

To start to bridge this gap, GOMA's intervention started by developing practical and playful activities to discover microbiology, tailoring primary school level 4 (9-10 years-old; n=34 pupils), adopting the “@Scientist return to school” program. The materials designed under the umbrella of “The invisible life of Bacteria” were unique, engaging and fun, without missing scientific rigor. It followed a specific pedagogical format to communicate a scientific message clearly and concisely - What are bacteria? Where do bacteria live? What do bacteria do? using simple words and illustrative language. Pupils were also invited to apply the knowledge acquired by playing with practical exercises.

This approach had a very positive effect on pupils (100% learned new things; 85.3% indicated that was the first time they had contact with a scientist; 67.6% defined the activity as spectacular and 32.4% described it as fun). Evaluation conversation also showed that they retained that microorganisms are not only linked to diseases but that they can also be beneficial for humans and for environment. Likewise, the activity had a significant effect on the schoolteachers, which supported that it was a beneficial teaching strategy that facilitated the development of their critical thinking and stimulated their scientific interest.

Using microbiology as a common ground, this practice allowed the link between education at school and academic research. We expect that had fostered the interest of school pupils in scientific areas and even in pursuing a STEAM career. Moreover, in the entire GOMA program, the outlined activities intend to facilitate the bridge to the desired knowledge dissemination beyond the academic community, connecting academics with society.

*Mateja Grego, Martin Thiel
and Tim Kiessling*

Engaging Schoolchildren and Students in Scientific Research About Plastic Pollution of Watercourses

Plastic pollution is recognized as a major global issue and its impacts on society, ecosystems, and socioeconomic sectors lack comprehensive understanding. Therefore, apart from a social challenge, this is also a challenge in science communication. The integration of plastics issues into the educational curriculums of both secondary and

high schools has often been an overlooked issue of environmental awareness. Owing to the importance of early age awareness, this project incorporates science engagement “components” and it integrates with educators and schoolchildren beyond just awareness. The project Plastic Pirates – Go Europe brings together scientists and youth to research river pollution with litter and microplastic hand-in-hand. The project has been implemented in Germany since 2016 and was implemented in Germany, Slovenia, and Portugal in 2021 as a joint action during our Trio Presidency, and reached 1250 datasets in 2021. There was a great interest from Slovenian schools to participate in the project and 100 were selected to participate in 2021. A great part of the activities of the project was focused on education about the plastic pollution of rivers, seas, and oceans, as well as the sustainable use of resources. The scientists gave webinars for school mentors and provided the teaching material and the project booklet with the protocol for sampling litter and microplastic. The microplastic net was sent to each school. Teachers worked to raise awareness and conducted the fieldwork with students often on a river or stream near the school. Students, divided into four smaller working groups, sorted the litter into categories and took photographs, observed the floating litter, deployed the microplastic net in the river for one hour, and measured the flow velocity. Finally, they uploaded the data and photographs to the project server (which were verified by researchers) and resent the microplastic net with the captured material back to the research institutes for analysis. About 1500 students and schoolchildren participated in 2021 in Slovenia and they were most enthusiastic to perform in the fieldwork. The project was promoted in several ways in Slovenia by the Ministry of Education, Science, and Sport, by the scientific institutes involved, by subcontracting an NGO active in the field of plastic pollution, and by including in the promotion the schoolchildren and students as part of their activities. The latter were active on social media by using #plasticpirates.eu. The results of Plastic Pirates – Go Europe show that riverine micro and macro litter is a major environmental problem and it finally should be recognized as one of the descriptors and as a relevant indicator of Good Environmental Status in the Water Framework Directive (WFD) as it is in the Marine Strategy Framework Directive (MSFD) as both are inevitably connected. As one of the important postulates of citizen science is to communicate the outcomes. The microplastic results will be available online using the interactive map that shows each sampling point. By

educating mentors via webinars and providing printed and online teaching materials, the project can be active and presented to future generations <https://www.plastic-pirates.eu/en>.

Alfred Steinbach and Nicolas Robin

Words Without Experience Are Meaningless, and We Only Understand What We Can Do: High-Tech-Instruments and Multimedia Journals in the Science Classroom

“Words without experience are meaningless”, and “you only understand what you can do yourself”. These two quotes from Vladimir Nabokov and Johann Wolfgang von Goethe summarize in brief the idea of our «Berzelius project». It is an interdisciplinary science education approach offering a borrowable high-tech instrument park with theme-oriented interdisciplinary multimedia laboratory journals (MLJs). A team of highly skilled science educators elaborates these MLJs using high-class videos, graphics and audios to get students hands on the instruments and to improve their technological, data, multimedia and science literacy.

The situation: People talk about PCR without knowing how to write polymerase chain reaction, and people deny anthropogenic climate change without even knowing the difference between climate and weather. The same applies to artificial intelligence (AI) and digitality. Everybody has an opinion about anything. With Donald Trump, post-truth era really got rolling. And during the pandemic at the latest, it got impossible to oversee an open anti-science attitude, spreading particularly in Western democracies. Science lost trust. For an increasing amount of people in Europe and the US, conspiracy attitudes got more attractive than facts.

Although reasons for this lie mainly in unprocessed anxiety as well as in an erroneous view of history associated with an overcome good-evil scheme, also science communication failed. First, science often uses a very technical language and scientists find it difficult to speak to a non-scientific audience. Then, even most educated people have a very erroneous concept of science. Apart from thinking that science is complicated, tedious and infallible, they think that scientific results are set in stone. Generally, corrections of scientific models have been occurring for a long time below public’s awareness. During the pandemic, however, science had a very high visibility and contradic-

tions have not passed unobserved. Many people got confused and some lost trust. That nothing in science is set in stone, that models don't represent reality (they rather describe the latter), that a model is not the truth and that absolute truths are not existing is completely new to a big part of society.

Do we have to rethink science education? Most of the younger people leave school without having scientific and multimedia literacy, without having a rough idea of how sciences work. According to a paper of the Royal Society of Chemistry, 70% of the UK teachers think that the UK curriculum cannot cope with the world's challenges. Secondly, science communication has to be integrated more strongly into research and teaching.

Our approach: Our project bridges school science and laboratory science with high-tech instruments. The fusion of these instruments and multimedia lab journals similarly aims at fuelling students' sense of wonder and excitement, demonstrating scientific concepts and theories and at developing technological, data, media and knowledge literacy. Particularly, the possibility to lean instruments for elaborating A-level exams is very solicited. Students can also express their experimental findings in multimedia formats thus learning to communicate science. We will present our concept by demonstrating one or two small high-tech instruments with corresponding multimedia journals.

Gregor Pobežin

Digital Humanities for a (More) Comprehensive Understanding of History

The past two decades, which passed so quickly that members of the Generation X still understand them as *the present*, have produced their share of reasons for pessimism (technology being one of the most important), but one of the worst, most defeatist ideas out there is that there exist *several truths instead of one*. "Truth," it seems, has become a matter of experience and feeling, and above all (as the popular and worn-out adage goes: "don't read if you don't like it") a matter of *interpretation*. In the spirit of "experience" and "interpretation," frequent observations in the context of tense geopolitical events gave rise to the idea expressed in the English phrase "one man's terrorist is another man's freedom fighter."

The truth, which can only be liberated from this world by philoso-

phy (see Coates 2009), has fallen victim to violent times before: in Thucydides one reads that in times of war and upheaval truth was immediately replaced by *interpretation*. We must trust the theory of historiography that truth is often a matter of the *undiscovered*, and therefore a great unknown.

This talk will therefore touch upon two subjects becoming, under the present circumstances, more and more entangled and intertwined: (cultural) history and biography which tend to fall victim to politically-conditioned fashionable talk (when they don't intentionally serve it, anyway) and the tools to liberate them from this yoke of mundane politics. In the spirit of the time, these tools are inevitably designed in digital labs: long gone are the days when people were just required to *know how to read*. We shall look into a developing tool which will facilitate comparative reading and analyses of biographical texts, historical narratives, object databases etc. rendering politically slanted interpretation of such material much more difficult. A short study case will show what the risks are in nationally and politically determined reading of (isolated) "texts# (in the broadest sense of the word) – and the meaning of tools developed in and by digital humanities disciplines for the uprooting of such populist practices.

*Simon Goorney, Caterina Foti, Jacob Sherson,
Jorge Yago Malo, Daniele Lagasco,
Lorenzo G. Santi and Maria Luisa Chiofalo*

Communicating Quantum Science and Technologies Through Cultural Storytelling

Nations of the world are currently in the midst of a second quantum revolution. Quantum Technologies (QT) are evolving at a rapid pace, and have the potential to generate significant changes in the life of every citizen. Such technologies are typically a complex result of implementing, in a highly controllable manner, a set of core concepts in Quantum Science (QS.) To appreciate these, including their effect on everyday life, requires the acquisition of a new way of thinking, in which it is necessary to rely on senses beyond everyday perception. Thus communicating Quantum Science and Technologies (QST) consistently challenges outreach experts to find engaging, rigorous, and effective narratives, able to support citizens of any age and cultural background to contribute to the modern developing "society

of acceleration” (Rosa, 2013). These considerations have motivated the design of the Quantum Technologies Education for Everyone (QUTE4E) pilot project, the central philosophy of which is that every citizen should have access to the essential concepts of quantum science irrespective of age and social or cultural background. This contribution lies within the thriving and ongoing research efforts aimed at shaping outreach as an accessible non-formal education framework, able to sit alongside the formal activities which take place in schools.

We present the narrative of culturo-scientific storytelling (CSS), developed in the pilot as a general theoretical framework for communicating the sciences of the modern day, by considering science as a continuously unfolding dialogue of interacting discipline-cultures, within which application of scientific thinking can provide a transformative experience. We will discuss the application and evaluation of CSS within a series of workshops oriented around the Quantum Jungle, an art-science exhibition which functions as a tactile visualisation tool and allows for members of the public to develop modern scientific thinking through first-hand experience of QST. With quantum technologies being introduced to many aspects of society, such as healthcare, communication, and information storage, it is essential that educators research and develop their approach to outreach. The public must be not only made aware of the implications of the development of QT, but also be nurtured with the skills needed to navigate and support an ever-changing world.

Gregor Bulc

Guided Tour as a Science Communication Medium: From Practicing Participatory Science to Presenting Research Findings

Quality science communication is based on the premise that (1) science must communicate in different ways with different audiences, while this communication being (2) participatory, two-way and interactive; (3) socially relevant; and (4) multimodal in the sense of combining various communication media. This paper is arguing that walking tours, cycling tours and other guided tours tick all these boxes as they function as a very impactful medium for practicing participatory science and presenting research findings to various audiences. The paper has a three-part structure. First, it presents a

short history of guided tours and their implementation in fields like tourism, education and science. It brings forward various examples of efficient implementation of guided tours in scientific research, and vice versa, in countries like Slovenia, Austria and Turkey. In the second part, the paper focuses on a case study, i.e. the practice of Ljubljana's *Urbana Vrana Institute* that for the last half a dozen years has been developing guided tours based on scientific research, cultivating these tours as a medium suitable for employment in the context of science communication. In this context, the paper also addresses the question whether or not science teams should create guided tours in collaboration with a professional guide, and what are the pros and cons of the two options. In the final section, the paper speculates on the usability both of printed guidebooks and of digital travel guides in the field of science. It asks in what ways can, in the context of participatory science and research presentation, audience's personal independence and autonomy of motion based on pre-prepared printed guidebook or digital itinerary function better, or worse, than the traditional interpersonal guided experience, and the ways we can combine the two. In conclusion, paper emphasizes the enormous, arguably untapped potential guided tours present for the field of science communication.

Aquiles Negrete and Pablo Rosenblat

Let's Talk Mom: The Use of Narratives in Communicating Neuroscience to Low-Income Status Pregnant Mothers

Let's *Talk Mom* is a social intervention and a research project directed to low-income pregnant women in Chile. The initiative seeks to communicate neuroscientific information to them, starting when they get pregnant until their child is four years old. The aim of the program is to communicate information to mothers on how to use language and to carry out early cognitive stimulation to take care of their children in the best possible way given the environment. In this paper we propose that using narratives, in conjunction with other ludic activities is one possible way to communicate neuroscience in an understandable, reliable and enjoyable way to audiences with low literacy and low income levels in Latin America.

Several studies associate living in an environment of *chaos* and inequality with cognitive/social development disadvantages. The re-

lationship between learning skills and poverty has been well documented. Recent studies explain that poverty might affect brain development and therefore academic performance. The reality in Chile suggests this same situation: income level appears to be crucial in developing learning skills. Despite this evidence, in Chile, and in most parts of the world, public policies have failed to provide solutions to reduce the stresses of living in poverty during pregnancy. We believe that one possible way to alleviate this problem is to design a science communication strategy in order to equip pregnant woman (in poverty situations) with neuro-scientific information so that they become aware of the danger for their children in early development stages due to stress situations and therefore to enable them to identify, prevent and handle such situations.

The importance of communicating science by means of narrative forms has been suggested by several authors. Research in the fields of narrative and figurative language has spawned important conclusions concerning the importance of narrative cognition and its implications in education and communication. According to Gardner (2001), in his theory of multiple intelligences, one of the ways in which complexity can be presented and communicated is by means of a narrative. Stories are attractive to people of all ages and conditions. Narrative provides a precise tool with which to represent and transmit knowledge; it is an effective emotional detonator, a long term mnemonic structure, and an important reinforcement for learning. The presentation of scientific information by means of short stories, novels, drama and comic strips should be considered as an important resource for the dissemination of knowledge, among the range of instruments at the disposal of science communicators.

César Carrillo Trueba

The Science Critic: A Necessary Figure in Public Science Communication

During the last decades, Science, Technology and Society Studies have changed the idea of science being neutral, homogeneous, without social context. Unfortunately, this is the image that still predominates in mass media. There is a gap between what is produced in STS research field and public science communication in the making, where prevails the habit of publicizing results the way they are presented by investigators – “translated,” as it were – abstracting the

process through which they were determined (what Bruno Latour calls “black boxes”). We know that processes for producing knowledge tend to be complex, sometimes intricate, and we have seen it recently in COVID-19 pandemic: The competition between research laboratories, pharmaceutical companies and the politicians and governments of each country, the will to demonstrate the truth when everything is uncertain, have led us into a swamp of information, one in which we’ve almost drowned.

One very concrete case was when some laboratories announced the virus’s expected lifespan on different surfaces – from three hours to several days – without verifying if it was still capable of infecting someone, a simple, but variable factor. It provoked great alarm. These were articles published in scientific journals, and were therefore hard to characterize as fake news, but there was a lack of context and insensitivity as to how this news would be taken. How should we then handle situations in which science generates information that is confusing or that could be disproven within weeks?

For years, I have been arguing for the role of the science critic – similar to the art critic – who contextualizes scientific results, makes research processes clear and explains the stakes and the political, economic, ideological, etc. interests at play, even serving as a stepping-stone between research on science communication and its communicators. The COVID-19 pandemic has clearly shown that, without this level of analysis, our role as communicators is weak, null or even negative. We need to contextualize and integrate, an urgent task in these times.

Petra Černe Oven

Visual Communication in the Sciences: Underdeveloped Space for Interdisciplinary Collaboration Between Art, Technology and Science

The speed of technological development in our society has never been as fast as it is today, and new technologies and media influence us on every level of our lives. Due to vast amounts of freely available data and its aggressive flood through diverse platforms, it is important that information is presented in a clear and understandable way. This applies to all disciplines, but it is especially important for areas of scientific research and education, where successfully presenting

new discoveries or clear and understandable explanation of concepts is of paramount importance.

In the last three decades, in which the democratisation of media and tools through digitisation has led to an increase in the use of visual media, it is imperative that visual means of knowledge representation in science are deeply understood, methodologically developed and professionally applied. Hal Varian, professor of information sciences, business, and economics, pointed out already in 2008 that the ability to be able to understand data, to visualize it and to communicate it, it's going to be a hugely important skill in the next decades at all levels of education. Science journals, such as *Nature*, have long been involved in initiatives promoting the use of visuals in science, as a clear and compelling image is key to science communication. Although in modern society we try to explore, understand, stimulate, and use all our senses, neuroscience has already some time ago confirmed the dominant role of visualisation in human cognition.

This lecture introduces the importance of visualisation in science, building on key considerations that have already been made in the field of visual communication design. If we look at the development of science, we find many examples proving that in the past science used visualisation on the same level as verbal messages. In parallel, as the sciences developed, so did the visual language that supported the dissemination of their outcomes. In parallel, the design profession, as a discipline at the crossroads of science, art and technology, has developed many specific professional areas which interpret and explains texts, data, concepts, and processes through clear language, effective illustration, typography, photography, graphics, and other visual communication tools.

This is important, because lately the boundaries between disciplines seem to be becoming increasingly blurred. Design tools, in past used only by professionals (artists, designers, architects), are nowadays accessible to all, irrespective of their initial experience and knowledge about visual communication. While freely available and easily accessible visuals are extensively used, a quick look at presentations and conference posters forces us into conclusion, that the information is not necessary presented in clear, understandable, and functional way. That means that the benefits of visual language (increase in the speed of learning, reduction of errors, explanation contextualisation, complex data visualisation) are not fully gained. This lecture therefore attempts to show the importance of visual communication

in the science fields, the role of interdisciplinary collaboration and methodological approaches which can lead to successful approaches in visualisation of science.

Lisa Winstanley and Mihaiela Stuparu

Communicating Science Visually: A Transdisciplinary Collaboration Between Undergraduate Art and Design Students and Molecular Chemists

The Guerrilla Girls, an anonymous group of feminist, female artists, rose to fame after raising the controversial question: “Do women have to be naked to get into the Met Museum?” Their argument underscored the disproportioned amount of male artist’s work on display, compared to the number of female nudes on view; emphasising the underrepresentation of women in art. This gender disparity is also very much apparent in science and accordingly, this paper reviews a pedagogical case study of how visual arts can be leveraged to communicate gender inclusivity within the framework of a transdisciplinary collaboration between arts and science.

This project introduced fifteen undergraduate art and design students to the concept of women in chemistry and encouraged visual exploration of inclusivity for women within this space. The students were tasked with creating editorial illustrations for the cover of a special edition scientific journal, focussed on women in chemistry; Integrating abstract gender issues with concrete visual communication solutions in order to orchestrate a creativity-enhancing environment and to effectively communicate these complex gender issues to the wider scientific community. Working closely with faculty and PhD students from the School of Physical and Mathematical Sciences (SPMS), the Art, Design and Media students conducted lab-based observational studies from which to draw inspiration in the studio. It was within these transdisciplinary areas of investigation that students were exposed to divergent ways of thinking, resulting in the creation of the large scope of innovative visual solutions.

The illustrative outcomes proved to be successful tools for science communication and provided tangible documentation of student insights into gender roles in science, via a public art exhibition, held both physically at the university and online, and through publication in scientific literature. These creative outcomes were submitted for

assessment alongside reflective academic blog posts, and by analysis of both image and text-based data, it was ascertained that many of the students chose to represent women scientists as explorers and innovators with empowerment being an overarching theme. The tangible outcomes were indeed important indicators of successful science communication, nevertheless, it is also important to note the impact of the impalpable aspects of the project, such as, increased engagement from students and the synthesis of diverse and multifarious research methods which helped forge connections between visual art and scientific stakeholders. These connections were further enhanced through use of boundary objects, such as sketches and demonstrations, which resulted in breadth of knowledge and a deeper academic rigour for all associated parties.

Developing connections between the visual arts and science is an important step in cultivating a more humanistic approach to science communication and there is an expanding body of research to support these pedagogical approaches. However, many art-science collaborations are prescriptive, focussing on the current status quo. Conversely, this project required students to question what currently exists and instead look towards what could be or, perhaps more importantly, what should be, for the future of women in science.

*Maruša Pompe Novak,
Špela Baebler and Marina Dermastia*

Interactive Plant Science Workshops and Science Experiments

One of the greatest global challenges is the growth of the population on Earth. It is expected that the world population will increase by 2 billion people in the next 30 years from the current 7.7 billion to 9.7 billion in 2050 and could reach a peak of nearly 11 billion around the year 2100. Therefore, we will need up to 50% more food. More food will need to be grown on less farmland and with less water than is currently available. It also appears that we are nearing the end of the oil age, which means that food production will compete for territory with growing crops for biofuels. To make this possible, plant biologists will face the challenge of developing new crops that can withstand changing climate conditions. We can only address all these future challenges based on knowledge gained through thorough basic and applied plant research which must be accepted and supported by the public.

To get as many people as possible around the world excited about the importance of plant science for agriculture and the sustainable production of nutritious food, as well as for horticulture, forestry, and the production of non-food plant products, such as paper, wood, chemicals, energy, and pharmaceuticals, the European Plant Science Organization has launched Fascination of Plants Day (FoPD). The idea is to connect with the public and get people fascinated by plants and plant science through attractive, plant-related activities organized by institutions around the world. In the years leading up to the pandemic, more than 850 events were organized in over 50 countries.

In Slovenia, the Slovenian Society for Plant Biology took the initiative in 2012 and organizes the main FoPD event in Slovenia every year together with the National Institute of Biology and Biotechnical Faculty at the University of Ljubljana and over 20 other institutions. Because it is important to get people excited about science from an early age, the main Slovenian FoPD event focuses mainly on elementary school groups. A very efficient model with a large number of attractive hands-on workshops has been developed attracting over 1000 elementary school students each year. Consequently, their families are made aware of plant science through these workshops. In addition, the public is informed about the importance of plant science through media coverage of the event.

During the pandemic, the approach of attractive hands-on workshops was not possible. Therefore, the communication channels were changed during these two years. In addition to online communication, a book “Fascinating Plant Experiments” was published containing protocols and explanations for the 25 best experiments conducted in the practical workshops of previous years. The book was complemented by videos showing how to perform experiments at school and at home. In this way, plant science reached elementary school students even during the pandemic.

Martin Baláž and Erik Rejta
**Star Status Independent
Artistic Research in the Science**

Star Status design project, epitome and authentic design Philosophy comes from creators, personal design strategy. We explore, analyse, and advance the connections between design, design research and design education, between teacher and student, between design colleagues, co-creators, reinventing design & science - art & science relationship with a range of perspectives and different lines of inquiry that designers, creators, educators, researchers and students may find in relation to their own independent action. Article present prompt explores Star Status creators challenge and opportunities for Research and communication in Design, with the widening and closing of distances in these unpredictable times, explore understanding openness to other people and other areas of knowledge and extraordinary interdisciplinarity cooperation and enhances the ability to cross fields and remove boundaries to collaboration between disciplines, and how processes can be accelerated towards adversity, about the generation of designers, fully aware of our collective responsibility in this decisive decade and researchers/designers, rapidly adapt ways of designing design. Characteristic of Star Status design is the concept of development of values by a nonlinear design method based on Star Status Independent Intellectual Research and development with Star Status Philosophy. This concept maximised connections possibilities between all components, elements, sections and factors of the design process and context. We see the possible flexibility and depth of new connections and new perspectives in the three-dimensional context space as the positive difference, real non-linearity of the design process to the actual trend methods, for example “Design Thinking” methodology. Independent Star status in the constellation is a difference from holistic methodology, for example. Particular heterotopic interdisciplinary Art & Science connections, developing accurate Picture with subjectivity to objectivity, the result of real Osmosis, the transfer of matter between two phases, separated by a third phase, the indirect infusion of the independent art with science research. An important distinction among art & science actions is between non-basic actions, which are done by doing something else, and basic actions, which is not the case. Most philosophical discussions of actions focus on physical actions in the form

of bodily movements. However, many philosophers consider mental actions to be a distinct type of action that is quite different from physical actions. Actions can be rational or irrational, depending on the reason for which they perform. The problem of responsibility is closely related to the philosophy of actions since we usually hold people responsible for what they do. Design - Shape and its transformations, also the beauty of the world, as well as role in society. On the one side, anthropomorphic, with faces, muscles, and the sensual tension of the body, on the other hand, the perfect combination of technical and aesthetical research, the most complex. Perspectives from design overlay our ideas of reinventing of science communication concepts of physicality Star Status Capsule Design Layers, the composition of Core Layer, synergic collection of essential Items, Superior Layer, collection of essential items & elements of style and Super-Reality Layer, collection of Epitome Components as the basis for Star Status Authentic Design.

Panagiotis Moiras and Venetia Papa **Tactics and Strategies of Political Parties During the COVID-19 Pandemic Crisis: A Case Study from Cyprus**

The COVID-19 pandemic crisis can be seen as a ‘special instance’ where political figures test their public communication skills to manage a crisis ‘event’ by providing information to build trust among the public (Podar & Voina, 2022). Scholars argue that citizens attribute trust to official discourses (Losada-Díaz et.al, 2020) specifically when related to health issues. While this is evident, COVID-19 pandemic crisis came up in a context of decreasing trust owing labelled “affective polarization” (Hetherington & Nelson, 2003) defined as the phenomenon of animosity between political parties representing the dominant political ideologies (i.e., conservative/right and liberal/left). It has long been argued that pre-existing political ideas and ideologies are relevant in determining whether citizens trust such information (Arcila-Calderón et.al, 2021). This, was a prevailing theme during the COVID-19 pandemic crisis in Cyprus.

In Cyprus, the two dominant political ideologies are represented by AKEL and DESY respectively with 40 years of consecutive representation in the Cypriot Parliament followed by two smaller parties DIKO and EDEK also belonging in the spectrum of Right and

Left respectively (Tsaggaris, 2022). Indeed, COVID-19 pandemic crisis was a prevailing public dialogue topic during the 2021 elections in Cyprus, fuelling important changes in voters' behaviour, disaffection with traditional political parties, including those of the opposition (Ellinas & Katsourides, 2021), providing the opportunity to the Far-Right party ELAM to consolidate and reinforce its appeal to the Cypriot electoral body. While no party expressed its opposition to the measures adopted by the government to deal with the pandemic, Cyprus had its fair-share in joining the protests, demonstrations and strikes around the world against national responses to the COVID-19 pandemic by governmental bodies (ibid). Even ELAM avoided taking a clear position on the handling of the pandemic, focusing instead on criticising the policies of the government, by emphasising on individual liberties/rights, and arguing against mandatory vaccination (Christou, 2021). What is of significant importance, is the reasons behind partisans (left/right wing) identification with particular ideological-political positions, while making choices that do not correspond with their opinions and behaviours during the COVID-19 pandemic crisis (Katsourides, 2013). By understanding Cyprus' policymakers discourses that influence citizens opinions related to COVID-19 measures (curfews and mandatory vaccinations), could yield to the development of a more efficient and effective communication strategies (Giannakou et.al, 2022). Further research is needed to better understand the relationship between political beliefs and people's health behaviours, considering that government trust and media, including social networks, have been found to play important role in determining those behaviours (Park, H.K et al 2021).

The objective of this study is twofold: firstly, to identify which communicational tactics (i.e through social and traditional media) were employed by the political elites during the COVID-19 pandemic crisis and secondly which of these tactics were considered as most efficient in increasing public trust, by conveying the central message in their respective partisans. The overall objective of this study is to identify differences and commonalities among the leftist and right-wing parties in terms of the construction of their discursive patterns and tactics. To do so, the study will employ a mix method approach. First 100 questionnaires will be distributed to the general population of the Cypriot electoral body. This representative sample will be comprised by a) voters self-identified ideologically in the wider

spectrum of the Left and Right ideologies and b) voters being partisan supporters and/or registered members of DESY and AKEL. Secondly, 15 face-to-face interviews will be undertaken with members of each party's communicational teams (i.e. spokesman/spokeswoman, communications officers) to provide an understanding as regards the tactics employed during the COVID-19 pandemic crisis. This survey method will provide a detailed overview of the most frequently used techniques to convey messages with regards to Covid-19, as well as a mapping of the preferred media.

Vera Axyonova

Think Tanks Between Science Communication and State Legitimation: Communicating the Covid-19 and the Climate Crisis in Russia

In the context of democratic societies, the questions of how scientific evidence and expert knowledge are produced and communicated in times of crisis have attracted considerable scholarly attention. However, we still know exceptionally little about the origins and contents of crisis-related expert knowledge, its communication channels and effects in non-democratic political environments. This paper addresses this gap by focusing on think tanks as a specific group of expert knowledge producers and science communicators. Drawing on a case study of Russia as a consolidated autocracy, the paper analyses state-linked think tanks' discursive responses to two protracted crises: The Covid-19 pandemic and the climate change.

Think tanks occupy the niche between science, media, politics, and the public. Seeking to influence opinions of political and public actors, they aim at "translating" research evidence into policy relevant recommendations. They often serve as intermediaries between science on the one hand and policy-makers and the public on the other, and thus become agents in science communication (Scheufele 2014). In existing literatures on policy advice and analytical communities, think tanks are often assumed to be "actors of democratization and carriers of new ideas" (Keudel & Carbou 2020, 3), who serve "as an informed and independent voice in policy debates" (McGann 2005, 3). This view is however challenged by the existence of analytical centers and research institutes that have been established as extensions of government structures in countries with non-democratic political regimes. These institutes heavily rely on state funding

and agendas, with presumably little room for setting own policy and research priorities. Simultaneously, they enjoy an unprecedented access to political decision-makers and hence have potential to exert more direct policy influence. But what kind of messages do such think tanks try to convey to political actors and to the public? What strategies and channels do they use to communicate these messages to their audiences? This paper sheds light on these questions, drawing on examples of state-linked think tanks in Russia.

Methodologically, the paper employs a combination of qualitative and quantitative content analysis of think tanks' publications, identifying their discursive frames used to emphasize different dimensions of the Covid-19 and the climate crises. Preliminary findings suggest that there is a considerable variance in how think tanks discursively approach the two crises. In some cases, Russian state-linked think tanks have openly endorsed national authorities' crisis response and discursively normalized the critical situation in Russia, while over-emphasizing problematic developments elsewhere in the world and thus shifting attention in the public discourse away from domestic emergencies. In others, think tankers attempted objective analyses of the pandemic and climate change, concentrating more on the domestic challenges. This variance is rooted in the intraorganizational dynamics of the think tanks, which largely determines whether they become legitimizers of state actions or try to remain neutral science communicators. The crisis frames further depend on the context of communication, including the channels of information sharing, targeted audiences, as well as issue and country coverage. This suggests that state-linked think tanks in an authoritarian environment, such as Russia, are not a homogenous group as one could have assumed. The crisis knowledge they produce and communicate varies and is often adapted to the audiences they intend to target. Thus, comparing crisis-related discourses of state-linked think tanks in Russia, the paper contributes to a better understanding of how expert knowledge is produced and communicated in countries beyond established liberal democracies.

*Rosanna Cataldo, Gabriella Punziano,
Barbara Saracino and Ferdinando Iazzetta*

The Scientific Communication of Italian Experts: Self-Representation and Media Representation in Comparison

Since the first COVID-19 infections were recorded in January 2020, the relationship between science and communication has become strong again, playing a key role in providing citizens with information and guidance on how to deal with the pandemic and the various scientific advances as the vaccination campaign evolves. Peculiar is the unprecedented level of involvement of scientific experts in the media coverage and the exposure of the public to the advice of the same experts. In *The Visible Scientists* (1977), Rae Goodell shows how the role of scientific experts in public communication has become increasingly central, due to changes in the media landscape as well as in the dynamics between science and society (Maasen and Weingart, 2005; Cheng et al., 2008; Bucchi and Trench, 2014). With the symbolic launch of Vaccine Day, the role of science communication experts has been useful in effectively promoting interventions both in support of vaccine choices through the mass media (Casiday R., 2007) and in response to instances of misinformation ready to cause social alarm (Diekema SD, 2012).

Considering the perspective of studies between science and society, the interest is to investigate the construction of the figure of the expert and scientific communication by comparing the self-representation of the experts visible in Italy thanks to their content published on social networks with the media representation in daily newspapers and national television programs. Specifically, we intend to analyse all cultural products extracted thanks to the use of keywords such as “vaccine”, “expert/scientist”, “covid/coronavirus”, and a list of 33 experts selected from a preliminary survey and individually associated to the keywords during the vaccination campaign against COVID-19 hypothesizing the existence of new models of scientific communication and the existence of different communication strategies among experts.

The research questions from which the study starts are:

1. How much and how did the experts communicate? What type of strategy did they employ? What themes prevail, in salient terms, in the conversations produced in the various media? How does the construction of one’s scientist persona take place?

2. Are there significant differences from the “Vaccine Day” event in the different media contexts observed?
3. How do alternative versions of the official scientific narrative filter through the media?
4. Is there evidence of conflict within the scientific community in the various conversations?

Patrick Wilson

Staying Alive: A Survival Guide for 21st Century Humans

Current advances in science and medicine have huge implications for the future of humanity. The potential of longer, healthier lives for all is inspiring but also scary. It means questioning the traditional education – work – retirement life course, and rethinking many aspects of society.

Exciting findings are published every week. As well as the basic science, there are promising treatments currently in development that may revolutionise health services. There are also more radical advances on the horizon, and with advances in genomics, computing power and AI applications, we may expect the pace of discovery to accelerate.

Alongside this, inflated claims, salesmanship, hype and wishful thinking are also on the rise. New philanthropic funding is transforming the innovation landscape, with wealthy individuals and private foundations financing research of questionable experimental and ethical status.

As the Covid pandemic as shown, increased public and mainstream media interest in health literacy are shadowed by conspiracy and rumour. The future is never evenly (or equitably) distributed, but openness and public debate are needed to shine a light on the field. This stuff is too important to be left to the scientists, doctors, geeks and nerds like me, let alone the healthcare and tech industries!

I am writing a book to communicate the latest research and advances in the science of ageing and regenerative medicine. Leavened with sci-fi and popular culture, and focused on the social as well as science aspects, I want it to be accessible and thought-provoking, to explore questions like:

- How can we live healthier and longer?
- Are greatly increased lifespans possible or desirable?
- How can developments in –omics and AI transform medicine?
- How can we as a society survive and thrive in the 21st Century?

I am conducting live and video dialogues with scientists and other experts working on the most interesting problems. I am experimenting with ways of engaging people through blogs, social media, networks, live events and science festivals to develop more engaging and accessible presentations for different audiences. Working with partners, we are interviewing older and younger people in various settings about their hopes for the future, and hope to stimulate inter-generational dialogue about ageing and health. I will present work in progress at the conference.

*Alessandra Fornetti, Ilda Mannino
and Massimiano Bucchi*

Challenges, Opportunities and Tools for Scientists and Research Institutions

The recent pandemic as well as the ongoing digitalization process have indeed called for a deeper reflection on the practices, roles and tools to foster quality science communication within the entire science communication ecosystem. The session *Challenges, opportunities and tools for scientists and research institutions* focuses on scientists and research institutions as two of the scicomm ecosystem actors playing an increasingly important role.

The session aims at reflecting on the role of education and training of scientists for tackling current challenges and trends in science communication. The reflection starts from the analysis of the barriers to support quality science communication in research institutions and the possible incentives. Among them, training has been once more identified as one of the key elements to foster institutionalization of science communication among scientists and research institutions, while also supporting its quality.

Needs, strategies and good practices to be adopted by institutions and researchers will be presented, and a wider reflection on the following topics will be offered: What is the awareness of the importance of science communication among the researchers and their institutions? What science communication education can be offered to meet the needs of young researchers and their organisations? How is

science communication training institutionalized in different countries? What are the challenges for science communication education and training today?

The session is based on the results of the H2020 QUEST project (www.questproject.eu) and will actively engage the public in an open discussion on the topic.

Tamara Dagen and Melita Kovačević
**Science Communication in Transition Countries:
A Thin Line Between Trust and Distrust
in Scientific Truths**

The last wave of globalisation which started around 2000s significantly changed and accelerated communication globally. Development of new technologies and digitalisation consequently impacted the world of science and fostered researchers, universities and scientific institutions to put a greater effort into the presentation and communication of scientific work and its results in a broader public. In addition, internationalisation which became even more important, now as an integral part of institutional strategies, encouraged and fostered connecting and networking of researchers worldwide. In such a new context, popularisation of science and continuous communication of scientific results outside the academic environment has become a necessity. Still, with unequal growth and different practices in various countries and scientific communities.

While the need for the development of new strategies for science communication and the transfer of scientific knowledge into the public was growing, a trend of doubting in science intensified as well. Internet and the emergence of social networks and its rapid development created new virtual debating space for questioning the science and scientific results in a broad global community, enabling individuals to post online their opinions and statements which are very often in contradictory to scientific knowledge.

The aim of the paper is to address the issue of science communication on the example of the COVID-19 crisis.

As various factors, which also include social networks, influenced a surprisingly high level of distrust in science among individuals in a time of pandemic in some countries, regardless the level of the education, previous experience, etc., we will consider whether such behaviours are more present in transition countries, and if so, what are

the reasons for this trend. In our analysis we will consider communications in the media and in society in general during the pandemic. Our analysis relies on two premises: 1) continuous scientific communication, the presence and popularization of science in media and in a broader public lead to its demystification, and contributes to the better understanding of scientific topics in the population; 2) it consequently influences a growth of trust in science in general. In other words, rare or missing communication of science and research achievements in media and in public prior the pandemic, as well as some other contextual socio-political characteristics of transition countries, might be correlated with the level of distrust in science and recommendations based on scientific knowledge in a time such as COVID-19 crisis.

*D. Kühnel, A. Mattern, C. Steinbach,
N. Möller, H. F. Krug, C. Marquardt
and K. Nau*

Providing Information on the Safety of Advanced Materials via a Web-Based Knowledge Base – Lessons Learned from over 10 Years of Science Communication

In times of social change, science has a special responsibility to provide evidence-based answers and develop solutions for the pressing issues of current times, such as climate change or digitalisation. This responsibility also encompasses the major task of science communication, generating increasing dialogue activities with the public, objectifying current debates and educating about the challenges and opportunities of novel scientific developments.

Advanced materials (including nanomaterials) are touching many areas of human life, as they are used not only in e.g., electronics or construction materials, but also in many applications that are very close to consumers such as cosmetics, medicine, food, and food packaging products. For this reason, many research activities are conducted in the field of materials safety. For example, research on the toxicology of nanomaterials has been ongoing for more than 20 years.

For just as long, misunderstandings and fake news have been spread about nanomaterials, applications and nanotechnology in general. The tininess of nanoparticles as well as their anticipated (even though not always realistic) usages e.g. in science-fiction like nano

robots, makes it hard for people to capture their benefits and weight potential risks at the same time. As a consequence, scientific publications on human health and environmental effects are often followed by misinterpretations or misrepresentations of the results in newspapers, social media or online news.

To counteract this erroneous trend, a Knowledge Base Nanomaterials was established in 2009, and expanded to include advanced materials in 2021. This Knowledge Base Materials aims at improving knowledge transfer on the safety of materials and thus the understanding and perception of toxicological data. Scientific results on materials safety are presented on a publically available web platform (www.nanoobjects.info). Target audience is not only the interested consumer, but also journalists, teachers, civil society and scientist from other disciplines. In order to ensure accuracy and reliability of the provided information a structured approach for generating the contents of the knowledge base has been developed. The interdisciplinary research team of the Knowledge Base Materials assesses the potential risks of novel materials based on quality evaluated scientific data and knowledge. But, as a team of scientists, writing style had to be adapted to the audience's perception. Even if the facts are correct, texts written in a scientific style are not very appealing to the general audience. Therefore, over the years a number of measures have been implemented to make the content more attractive. These measures include social network activities, which facilitate interaction with the audience and helps to promote new website content.

In this contribution, the Knowledge Base Materials team reflects on experiences on how scientific facts about advanced materials can be presented in a way that is understandable for everyone. Strategy and methodology for risk communication on nanomaterials and other new materials are described. Lessons learned and key principles from more than ten years of science communication are highlighted.

Mojca Rupar Korošec

Open Communication Sciences Intertwined with Artificial Intelligence

First, we present the links between the use of AI in an ethical way and libraries. We highlight the legal framework of the trends dictated by the European Union for the handling of data in libraries. We also highlight the strategies followed by the institutions dealing with this issue.

Artificial intelligence is a priority for the European Union, as it is predicted to play a key role in the digital transformation of the economy and society.

On 19 May 2021, the European Parliament adopted a report on the use of artificial intelligence in the fields of education, culture, and audio-visual, calling for AI technologies to be designed in a way that avoids gender, social or cultural bias and protects diversity.

We are mindful of intellectual freedom and the related right to information. The European Union Intellectual Property Office (EUIPO) is working on the importance of the intellectual property. We need more independent non-profit organizations such as ‘DataEthics.EU’ whose purpose is to ensure ‘individual control over data’ based on a European legal and value framework.

We are following a very important document published by IFLA and get inspired by the UNESCO COMEST document.

We focus on and link two important aspects: open science and artificial intelligence, which have a concept of the data as their common denominator.

Both concepts, Open Science and Artificial Intelligence will continue to be of central interest to us as we seek ways to serve society of both worlds: Open Science with various actions, like OpenAIRE, and, on the other hand, Artificial Intelligence in our everyday life. Our main challenge is how to integrate the current initiatives of the research community into a national framework in which all stakeholders involved in the production, management, and exploitation of research results and data through Will Open Science join forces towards scientific and human progress?

In the section on Open Science Communication, we will look at how the European Open Science Cloud (EOSC) is responsible for delivering on the objectives agreed in the “Memorandum of Understanding” signed by the European Union and EOSC to form a formal partnership.

We will focus on the Paris Call on Research Assessment, prepared by the French Open Science Committee following the publication of the “UNESCO Recommendation on Open Science” and the European Commission document “Towards a reform of the research assessment system: scoping reform”.

The only way to truly “unblock” science and make scientific communication open is through a reform of the evaluation system. This is where the mission of the European Research Council (ERC) comes

into play, complementing other funding activities in Europe (such as those of national research funding agencies) and being a leading component of Horizon Europe, the European Union's framework program for research for the period 2021-2027. As the gold standard of 'excellence', the ERC has a key role to play in the field of research and evaluation.

Monika Mačiulienė

Role of Science Communication in Open Science Movement

Open Science (OS) condenses a variety of research and practice areas. Stracke (2020) suggest that OS is “*a combination of objective and subjective goals and means to improve science in the diverse subjects and disciplines and as a whole*”. According to the author, there are two major objectives of OS: (1) greater trust in scientific research and (2) higher reliability of the research findings. However, research on OS largely focuses on infrastructures for transparent research results of high quality, ethical and privacy issues and data processing procedures. The “soft” links (i.e. efficient communication, co-creation practices between the quadruple helix actors) in the context of OS received limited research attention. Hence, despite the open access development in both the methods and sharing of scientific result, there are extensive underresearched areas regarding the mainstreaming of open scientific information to broader audiences including citizens, private sector and governmental organizations. In other words, even if scientific data is slowly becoming more open, this does not always translate into wider public interest. The research presented aims to focus on this gap and define the approaches of science communication which could be adapted into the field of Open Science. This will be done through extensive literature and case study analysis by focusing on Open Sciences initiatives which gained strong support of public administration and/or in civic society. The cases will be identified through Open Science Monitor.

Rezearta Murati and Irma Kuka
**The Challenging Practice of Science
Communication. Case Study:
HEDA (Health Development for Albania)**

HEDA (<https://www.heda.al/>), represents a networking platform for more than 50 Albanian expert collaborators that study and hold research-related positions around the world (*from Ph.D. students to full Professors*). We have voluntarily started this platform to promote scientific collaborations and exchange professional information for the Albanian-speaking professional and non-professional communities in Albania, Kosovo, North Macedonia, and elsewhere.

The initiative for this project came from the core team of three specialists from three different fields: Medicine, Information technology, and Linguistics. We came together with the idea of bringing to the Albanian-speaking community a trustful platform with information that professionals and the wider public can understand and share. From the linguistic point of view, it was a challenge trying to combine the accuracy of medical scientific terminology with our strong commitment to advocating for a better understanding from the public of the pivotal role played by researchers in modern-day society.

The Mission of the platform is:

To organize awareness campaigns aimed at protecting the health of the population in support of the promotion of good health for all the community.

We intend to create interactive content, which the reader can interact with, such as interactive graphs, choropleth maps for representing data by regions, and multiple-choice question tests to identify knowledge gaps and orientate the reader toward relevant material.

To promote this novel channel of scientific communication.

To outreach as many as possible new readers.

To become a reference point and trusted ally for internet searches related to health issues

So far, HEDA has established a novel channel of scientific communication, receiving excellent feedback and reaching out to thousands of new readers every week on our website and social network pages. Taking into account that the online platform has become very accessible and useful, and particularly useful in tracing and monitoring current scientific progress we analyse and produce informative materials with easy-to-understand graphics and offer real-time assistance

through the team of our experts, as well as social media outreach with our HEDA Albania Facebook page to facilitate and catalyse dissemination of scientific knowledge and progress so public and professionals have the necessary information.

HEDA's response to the COVID-19 Emergency includes the publication on the website of:

More than 200 scientific articles summarized for the professional and non-professional public.

8 Updates on scientific progress including Auxiliary algorithms, Guidelines for clinical case management of COVID-19, epidemiological practice, and vaccine progress.

More than 40 informative posters designed in the Albanian language.

10 informative videos on our YouTube Channel, from our experts.

In our paper, we will make a SWOT evaluation of our ongoing project trying to share with the scientific community present at the Conference our challenging experience and exchange ideas with professionals in this field.

Arko Olesk and Suzanne Franks **Science Communication Quality Framework as a Challenge to Academic Institutions**

The H2020-funded QUEST project (www.questproject.eu) aimed to define, measure and support quality in science communication to tackle problems related to the effective reach of scientific results to the public, spread of misinformation and low public engagement with science and technology. As part of the project, we developed a framework of quality, consisting of 12 indicators that can be used to assess quality in various strands of science communication (Olesk et al., 2021). The framework was based on co-design sessions with science communication stakeholders, thus representing the views and quality expectations of the science communication community.

The quality indicators are distributed into three pillars - trustworthiness and scientific rigour, presentation and style, and connection with society. We understand quality as a property reflecting the integrity of the framework, that is, the level to which all listed elements are present in communication.

In this paper, we will discuss two challenges that this approach to quality presents to academic institutions. First, institutions need to consider these principles when designing training programmes in

science communication but even more so in science journalism. In the era of pandemics and the devastating effects of climate change, trust in quality science journalism through the different media has never been more important and curricula will need to respond by making journalistic quality a central feature. We will introduce the curriculum for a Science Journalism MA programme developed by City, University of London's Department of Journalism.

Second, institutions need to assess their own communication activities. Research organizations are committing more and more resources to communication (Entradas et al, 2019) and have become prominent, or even dominant (Marcinkowski and Kohring, 2018), actors in the field of science communication. Critics warn, however, that universities' communication tends to be guided by promotional purposes. This presents a risk of a distorted view of science that misleads the public, warns Göpfert (2007) or that "universities and scientific organisations ... [are] being perceived as 'just another advertiser'" (Weingart and Joubert, 2019, p. 9), thereby threatening to decrease public trust in science in general. The framework of quality could provide support for communication activities so that these both maintain public trust and support the strategic aims of universities.

AUTHORS' BIO



Lorenzo Gagliardi is a PhD student in Methods and Models for Economic Decisions, at University of Insubria (Varese, Italy). He has a background in economics and business, but his current research focuses on the cognitive foundations of conspiracy theories beliefs. Nevertheless, his fields of interest include behavioural sciences and decision theory. He is also the founder of “Non è la Zebra”, an Instagram-based, Italian, scientific communication project which focuses on spreading knowledge on behavioural sciences and psychology of erroneous beliefs.

Jana Laura Egelbofer is a postdoctoral researcher in at the Department of Communication, University of Vienna. Her research interests include fake news, disinformation, media criticism, anti-science discourse, incivility, political journalism, and public perceptions of media and science. Her work has been published in international journals such as *Annals of the International Communication Association*, *Journalism Studies*, and *Journal of Language and Politics*.

Tina Eleršek earned a PhD in Biology and Biotechnical Sciences in 2006 at the University of Ljubljana, Slovenia. She is a Senior Research Associate and Leader of the working unit Ecotoxicology at the National Institute of Biology. Her main research field is the ecology of algae and cyanobacteria. She has experience with traditional biomonitoring of surface waters based on the Water Framework Directive (phytoplankton and phyto-benthos). In cooperation with other European research institutes, they are currently developing molecular methods for ecological status assessment and exploring possibilities for their implementation in biomonitoring (COST DNAqua-Net, project Interreg Eco-AlpsWater). Moreover, she is involved in ecotoxicological testing of various pollutants on different model organisms (cyanobacteria, algae, and zebrafish embryos).

Maša Zupančič, M.Sc. of Ecotechnologies, obtained at the Jožef Stefan International Postgraduate School and is pursuing a Ph.D. in Biosciences at the University of Ljubljana. As a young researcher at the National Institute of Biology, her primary focus is cyanobacterial communities in surface water with an emphasis on toxic species. They are using various molecular methods to understand their spatial and temporal distribution better. They are aiming to develop new assays to push this field forward. She is also communicating the topics of water ecosystem protection and cyanobacteria, mostly through social media. Besides that, she is a Journal Social Media Editor for FEMS Microbes.

Nejc Plohl is a research and teaching assistant as well as a third-year Ph.D. student at the Department of Psychology, University of Maribor (Slovenia). His research work is primarily related to social, health, and applied

psychology, with a particular emphasis on understanding the predictors of trust in science and its role in explaining responses to health-related messages and health behavior.

Bojan Musil, PhD, is an associate professor and researcher at the Department of Psychology, University of Maribor (Slovenia). His primary research interests are cross-cultural studies of values and value orientations, personality concepts, health, educational studies, and computer-mediated communication. He presented his work at national and international scientific conferences and is (co)author of several scientific articles, chapters, and books.

Helena Fošnjar is an English teacher with a MA in English language and literature from the Faculty of Arts, University of Ljubljana. Before joining the project team at the Faculty of Natural Sciences and Mathematics, she worked as a freelance translator, translating mostly texts from the wider field of humanities, and especially contemporary art. Apart from English, she speaks Italian and Croatian fluently, and German and French on a basic level. Currently, Helena works as part of the FNM Project Office on international projects, mostly in the framework of EACEA's Pan-European Erasmus+ platform.

Boris Aberšek graduated from the Faculty of Technical Sciences of the University of Maribor. He completed his M.Sc. (1989), and his Ph.D., Analysis of Short Fatigue Crack on Gear Teeth (1993), at the same faculty. He furthered his studies with a second Ph.D. in 2014, A Philosophical Analysis of the Mechanisms of Natural Thinking and Artificial Intelligence, which he obtained from the Faculty of Arts of the University of Maribor. An important performance indicator of the success of Boris Aberšek's scientific research work in the field of both, basic research and applied research, is reflected in the numerous projects, which he has led, or in which he has participated.

Andrej Flogie graduated in physics and technical science from the Faculty of Education, University of Maribor. He began his professional career as a physics and technical education teacher. For seven years, he taught physics and information science at the Diocesan Gymnasium Anton Martin Slomšek and worked as an assistant for didactics of technical education at the Faculty of Education, Maribor. For three years, he was the president of Program Board for Informatization of Schools on the Ministry of Education and Sport and managing director of the Directorate for Information. In the time of Slovenian chairmanship of the Council of the European Union, he was responsible for the field of Information Society. Currently he is the director of the Anton Martin Slomšek Institute and project manager.

Dejan Zemljak obtained his MA from the Faculty of Natural Sciences and Mathematics, where he is currently completing his PhD degree and working as a researcher. Already during his studies, he participated in several Erasmus+ projects dealing with various topics, of which he is most ardently interested in environmental issues and green ecology, as well as innovative teaching approaches. At the moment, he is employed at the UM / Faculty of Natural Sciences and Mathematics as assistant researcher. His research focuses especially on the field of introducing AI into education.

Urška Martinc is a doctoral student at the Department of Philosophy, Faculty of Arts, University of Maribor. She is interested in philosophy of biology, innovative teaching approaches, environmental ethics, animal ethics and philosophy of science. She is employed at the Institute of Modern Technologies of the Faculty of Natural Sciences and Mathematics, University of Maribor, where she is involved in various projects. She is an active member of the society Slovenian Society for Analytic Philosophy and Philosophy of Science (DAF), which, together with the Department of Philosophy Faculty of Arts UM, has been organizing the International Student Philosophical Symposium for several years.

Prof. dr. Bojan Borstner, profesor filozofije na Oddelku za filozofijo, FE, UM. Njegova glavna raziskovalna področja so: ontologija, družbena ontologija, filozofija znanosti in filozofija zdravstvene nege. Je predsednik DAF (Društvo za analitično filozofijo in filozofijo znanosti in sourednik revije Acta Analytica. Bil je predsednik SFD (Slovensko filozofsko društvo). Je avtor dveh knjig: Problemi realizma 1995 in Virtual Teacher (z B. Aberškom in J. Bregantom) 2014 in več kot sto člankov in krajših zapisov s področja filozofije. Uredil je pet knjig: Consciousness at the Crossroad of Philosophy and Cognitive Science 1995, Handbook of Phenomenology and Cognitive Science 1996, Historicizing Religion: Critical Approaches to Contemporary Concerns 2010; Thought Experiments Between Nature and Society: A Festschrift for Nenad Miščević 2017, Od jezika k filozofiji in nazaj: Festschrift ob 75-letnici Dunje Jutronic/ From Language to Philosophy and Back A Festschrift for Dunja Jutronic on her 75th Birthday 2018.

Tinca Lukan is a sociologist and PhD research fellow at the University of Ljubljana and visiting scholar at the University of Amsterdam. Her research focuses on influencers' labor in the Balkans and how socio-economic context shapes their working conditions. She is an active member of Young Academy of Slovenia and co-founder of the research network Platforms On The Periphery.

Marija Zafirovska was born in the year 1995 in Tetovo, Republic of Macedonia. After finishing secondary education in the gymnasium Kiril Pečnikovikj in Tetovo, she enrolled in the Medical faculty at the Ss. Cyril and Methodius University in Skopje. She obtained the title doctor of medicine in 2019 and gained her licence in 2020, after which she started working as a medical writer in Alkaloid AD, Skopje. Currently, she is enrolled in the doctoral studies of Biomedicine and is doing her internship in the General hospital Jesenice. She is an EGPRN Fellow and a member of the AGP/FM SEE.

Aleksandar Zafirovski was born in the year 1993 in Tetovo, Republic of Macedonia. After finishing secondary education in the private gymnasium Yahiya Kemal in Gostivar, he enrolled in the Medical faculty at the University of Ljubljana. Obtained the title doctor of medicine in 2018 and gained his license in 2020. Currently, is enrolled 4th year of post-doctoral studies of Biomedicine - Clinical Medicine and is a second year resident in interventional radiology. An EGPRN Fellow and a member of the AGP/FM SEE.

Gašper Tonin is a fifth-year Medicine student as well as a first-year MA student of Slovene Studies and General Linguistics at University of Ljubljana (2021/2022). In 2021, he graduated on the topic of *Medical Terminology: Term-Formation Processes and Abbreviations* (in the department of Slovene Studies) and *Metaphor - Neuroscientific Basis* (in the department of Comparative Literature and Literary Theory). He received the Dean's Award for his diploma thesis in the department of Slovene Studies. He is also the editor-in-chief of *Medicinski razgledi*, a double-blind peer-reviewed scientific journal in the field of medicine, and a language consultant at the Slovenian Medical Dictionary

Noemi Crescentini graduated in Sociology and is currently PhD Student in Social Sciences and Statistic at University of Naples Federico II (Italy). She is interested in sociology of science, STS and mixed methods. Her research project concerns the phenomenon of citizen science.

Marco Bruno, Associate Professor in Sociology of Cultural and Communicative Processes, President of the degree course in Public and Business Communication, Sapienza University of Rome. He currently teaches "Sociology of Communication" and "History and Models of Journalism - Press Office Laboratory". Main research interests: journalism, media and diversity (with particular reference to Islam and migration processes), political and electoral communication, political phenomena and participatory practices.

Fabiana Battisti, PhD Student in Communication, Department of Communication and Social Research (CoRiS) of Sapienza University of Rome, where she collaborates with the chair of History and Models of Journalism-Press Office Laboratory and Sociology of Communication. Main research interests: media and diversity, journalism, digital and participatory cultures, scientific communication.

Nina Cvar is a researcher at the Faculty of Electrical Engineering, University of Ljubljana, where she focuses on multidisciplinary aspects of digitalization. She is also employed as an assistant at the Faculty of Arts, department of sociology. She completed her PhD on the topic “Status of Digital Image in Global Capitalism” under the supervision of Prof. Dr. Marina Gržinić at the Postgraduate School of the Research Centre of the Slovenian Academy of Sciences and Arts (ZRC SAZU), Ljubljana, which has been published in 2022 by Sophia Publishing House, one of the central Slovenian publishers in the field of humanities and social sciences. Cvar has worked for years as a professional film critic and has also been active in the NGO sector.

Robert Bobnič is a PhD student of Media Studies at the Faculty of Social Sciences at the University of Ljubljana and a researcher at the University of Ljubljana, Center of Cultural and Religious Studies. His research interests include the study of media technologies and popular music.

Arko Olesk is a Lecturer of Science Communication in Tallinn University, Estonia. He received a MSc in Science Communication from Imperial College London and is currently finishing his PhD on mediatization of scientists. His other research interests include science communication quality, environmental communication and innovation communication. He has worked as a science journalist for Estonia’s leading publications and is currently the science and education adviser to the president of Estonia.

Sašo Dolenc is a freelance science communicator and philosopher of science from Ljubljana, Slovenia. He has written many books and scientific essays on the interplay of science, philosophy and history of ideas. He is the Editor in Chief of the popular online science journal Kvardakabra.net, whose mission is to explain science in a simple, attractive and fun form that is open to all. The journal was one of the nominees for the EU Descartes Prize for Science Communication. The Slovene Science Foundation awarded him with the honorary title: The best Communicator of Science for the year 2019. (Website: saso-dolenc.com)

Maja Opalički Slabe, PhD, completed her undergraduate study at the School of Environmental Sciences, University of Nova Gorica. After her diploma where she already started researching groundwater fauna, she continued her research career at the National Institute of Biology as a young researcher. Her Ph.D. focused on determining bacterial communities in karst springs throughout Slovenia. In 2019, she completed her Ph.D. in Environmental Sciences at the Graduate School of the University of Nova Gorica. In the same year, she became the project manager of the LIFE Naturaviva project in which the National Institute of Biology is the leading partner.

Marina Dermastia, PhD, is a professor of plant biology at the University of Ljubljana and the International Graduate School of Jožef Stefan and a Scientific Counsellor at the National Institute of Biology. She is also a member of the editorial board of National Geographic Slovenia for which she has written articles and reviews and served as an interviewer. She also participated in the first National Geographic Talks. For 35 years, she has devoted herself to scientific research on crops, such as corn, potatoes, and grapes, and their interactions with pathogens. She has collaborated with scientists from Europe, the U.S., and Australia and spent time in the U.S. as a visiting scientist at the Department of Biochemistry, Brandeis University, Waltham, MA, and as a visiting professor at the Plant Pathology Department, University of Florida, Gainesville, FL. In addition to publishing dozens of scientific papers, she has authored more than a hundred popular science articles and books, including textbooks for all levels of education, and has contributed to radio and television programs, award-winning documentaries, etc. She has received several national and international awards for her work in popularizing science.

Martina Temmerman is the programme director of the Master's degree in Journalism of the Faculty of Languages and Humanities of the Vrije Universiteit Brussel (VUB), Belgium, where she teaches Linguistic Discourse Analysis and several practical classes. She is involved in the Community Engaged Research and Learning project of VUB, for which she designed a journalism course in which students work together with third-party commissioners for developing journalistic productions on societal issues like sustainability and urban life. Her research interests are in (critical) discourse analysis, framing analysis, and the linguistic characteristics of journalistic, political and science communication.

Afonso Pais, ITQB NOVA (Instituto de Tecnologia Química e Biológica António Xavier da Universidade Nova de Lisboa) and ICNOVA (NOVA Institute of Communication). He graduated in Biochemistry, in 2019, University of Lisbon, and went on to obtain an MSc in Science Communication,

from Universidade NOVA de Lisboa. After his curricular internship, where he developed an impact assessment toolkit for a socially inclusive astrophysics communication project, he joined the Science Communication and Image Office of ITQB NOVA. There he coordinated a nationwide impact assessment strategy for the European Researchers Night 2021. Currently, he is assessing how researchers experience their participation in a national radio program “90 Segundos de Ciência” and how their perceptions of the public shape how science is communicated.

Ana Sanchez is an Assistant Professor at ITQB NOVA, currently head of Advanced Training. She obtained her PhD in Biology at the University of Nijmegen, The Netherlands, having worked as a postdoctoral researcher. She created and headed the Science Communication Office of ITQB NOVA (2005-2016). Between 2016 and 2019, Ana was a Member of the Board of the Portuguese science-funding agency, FCT. In 2011, she co-created and since co-coordinates the Master in Science Communication from Universidade NOVA. Her interests include the scientists’ involvement in science communication and the communication of the nature of science

Raquel Branquinho is an Interim coordinator of REMA – University of Porto/FLUP and a senior international expert as a science manager. She obtained a BSC degree in Microbiology in 2004 – Faculty of Biotechnology, Universidade Católica Portuguesa and in 2014 a Ph.D. in Pharmaceutical Sciences in the Faculty of Pharmacy, University of Porto. She developed R&D activities in the field of microbiology for more than a decade, in the BacT Drugs team. She participated in several national and international science outreach programs and/or projects, such as: “EuroScitizen – building on scientific literacy in Evolution”; “@Cientista regressa à escola”; MicroMundo@UPorto (a pedagogical project of education in Microbiology); among others. She is part of the management team of GOMA (Gomes Teixeira Science Academy, Armamar). Her scientific production has dozens of publications in peer-reviewed journals, oral communications, and national and international conference proceedings.

Mateja Grego, PhD, is a marine biologist employed at the National Institute of Biology, Slovenia. Her research is focused on microplastic pollution of coastal sediments and rivers. She is the Slovenian coordinator of Plastic Pirates – Go Europe. She organized a 10-day summer school for 43 students of the Erasmus Mundus Master of Science in Marine Biodiversity and Conservation (EMBC) at the Marine Biology Station Piran in 2011. She was awarded the “Prometheus of science award” by the Slovenian Science Foundation, for excellent communication in science for the short movie “A Child and the Sea – Between Sea and Land”.

Martin Tbiel, PhD, is a full professor of Marine Biology at Universidad Católica del Norte (UCN) in Coquimbo, Chile. His main research interests are in the behavioral ecology of marine invertebrates and the functioning of marine communities (mussel and ascidian beds, algal turfs, and kelp forests). He tackles marine debris along the Pacific shores of Latin America by creating a research network to collect and analyze information on the composition and abundance of marine plastic litter, its potential to transport invasive species, and social attitudes in the target countries toward various conservation actions.

Tim Kiessling, PhD, is a research assistant at the Kiel Science Factory, Germany. He earned his Ph.D. at the Kiel University and his M.Sc. in Marine Biodiversity and Conservation at the University of the Algarve (Portugal) and the University of Oviedo (Spain). His main research interests are marine and riverine pollution by plastic litter. He has been educating teachers via webinars, verifying data, and analyzing microplastic for Plastic Pirates since 2016. In the past years, he was on the scientific support team for the extension of Plastic Pirates to Portugal and Slovenia.

Alfred Steinbach is project leader and editor-in-chief of the Berzelius project at the University of Teacher Education St.Gallen (PHSG) in Switzerland. He studied Spanish and French Philology in Trier, obtained his master's degree in Nuclear Chemistry from the University of Cologne (DE) and obtained a PhD in Environmental and Analytical Biogeochemistry at the University of Hamburg (DE). Recently, he studied "Creative Writing" in Zürich (CH). He worked as production manager, marketing specialist and technical writer at several companies in different countries. He worked as a journalist, teacher, landscaper, banker and construction supervisor. He also travelled and lived more than six years in South America.

Gregor Bulc, PhD is a tour guide, tour creator, and a free-lance researcher. He manages Urbana Vrana Institute, a Ljubljana-based cultural tourism and research non-profit notable for running Ljubljana Feminist Tour, Theatre Tour, Alternative Tour, Green Tour and various music tours. He completed an MSc in Human Rights at the LSE and a PhD in Communication and Media Studies at the University of Ljubljana's Faculty of Social Sciences. He published a book on cultural production and cultural intermediaries, and has written on topics such as mass media, popular music, graffiti and street art, contemporary art, theatre, cultural heritage, human rights, hate speech, etc.

Aquiles Negrete, PhD, is a professor of Science Communication in Universidad Nacional Autónoma de México (UNAM). He received an MSc in Resource Management from Edinburgh University UK and a PhD in Science Communication from the University of Bath UK. He is author of a number of scientific papers and various works in fictional literature. He is author of two books in English: “So, What Did You learn from the Story: science communication via narratives” and “So, What Did You Learn from the Story?: Science Communication via Narratives”. His current research interests are centered on science communication via cultural media.

César Carrillo Trueba, Biologist (Facultad de Ciencias, Universidad Nacional Autónoma de México, UNAM); Master in Social Anthropology and Ethnography (École de Hautes Études en Sciences Sociales, Paris). Editor of *Ciencias Magazine* (edited by UNAM) since 1987, he has written several books about: biological diversity of Mexico, indigenous people and nature, the relation between science and indigenous people knowledge, racism in Mexico, and other essays about different topics. Curator of exhibitions about culture and nature in Mexico, racism in Mexico, Gypsy in Mexico; he has been director of research and collection at the Natural History Museum of Mexico City.

Petra Černe Oven, PhD, is a designer, researcher and author with a special interest in typography, information design and theory & history of visual communication design. She completed her PhD at the University of Reading (UK). She is a member of the supervisory board of The Brumen Foundation and a Secretary at Association Typographique Internationale (ATypI). With dr. Barbara Predan, she is co-editing *Zbirka 42*, a series of books on design theory for the Pekinpah Association. Černe Oven curated exhibitions and initiated and co-organised numerous national and international conferences and workshops with diverse institutions. She lectures at the Academy of Fine Arts and Design (UL) and currently serves as Head of Chair of Theoretical Studies.

Lisa Winstanley has worked as a design educator and researcher, the past five years at Nanyang Technological University in Singapore. Her academic career is also underpinned by over 20 years as a creative practitioner, with her work winning over 50 prestigious design awards, and being exhibited globally. Lisa’s current research explores the intersections between ethical and collaborative design practices and pedagogies, though the lens of design for change. These areas of interest have culminated into her current research projects, which explore ways to facilitate inclusive production and consumption of collaborative creative practice and investigate best practices for preventing visual plagiarism within an applied arts context.

Mihaiela Stuparu obtained her doctoral degree from ETH-Zürich. After a one-year postdoctoral stay with Prof. H. K. Hall Jr. at the University of Arizona, Mihaiela returned to Zürich and finished her habilitation work under the mentorship of Prof. J. S. Siegel at the University of Zürich. Since 2014, Mihaiela is a Nanyang Assistant Professor (NAP) at NTU Singapore. She is an Elected Council Member of Singapore National Institute of Chemistry (SNIC) and Chair of the SNIC Women's Chapter.

Maruša Pompe Novak, PhD, is a researcher at the National Institute of Biology and a teacher at the University of Nova Gorica. She is communicating science to all groups of the public: to the scientific public through scientific papers and lectures at the scientific conferences, to students through lectures at the university, to high school students through open days, and to elementary school students through workshops and books. She organizes science communication events at the Department of Biotechnology and System Biology at the National Institute of Biology and she is the national coordinator of Fascination of Plants Day for Slovenia.

Špela Baebler, PhD, is a researcher at the National Institute of Biology and a teacher at the University of Ljubljana and the Jožef Stefan Postgraduate School. Her scientific focus lies in deciphering plant molecular responses to stress using systems biology. In parallel, she develops applications for easier data analysis and interpretation. She is a co-founder of the spin-out company BioSistemika, the president of the Slovenian Society of Plant Biology, and an avid science communicator.

Martin Balaz, designer mgr. art., specializes in research and development, especially in the field of product design, has long been involved in inclusive design, works at the Institute of Design, Faculty of Architecture and Design, Slovak University of Technology in Bratislava, at the faculty is headed by Studio Balaz, based on independent intellectual development design through the "Star Status" philosophy, "Open Sphere" design strategy and "Authentic Design Essence", teaches professional, so-called The "Action Centric" subjects Design Drawing and Design Visual Language, focused on imagination and expression, created the inter-faculty module Synergistic Strategy in Design and lectures on the topic of automotive design. He has also collaborated with d'Annunzio University, Chieti-Pescara in Italy (in the field of ship design) and Coburg University, Coburg, Germany, to which he regularly returns to give lectures or organize international workshops. He is a co-author of the university textbook about design body construction, the author of the dizajnerskakresba.sk project about design sketching and will co-create the Star Status design project.

Panagiotis Moiras BA (Hons), MSc, MCIM is a Project Management Specialist at the Research and Innovation Support Service of the University of Cyprus. Panagiotis has more than 15 years of professional experience as a strategy and communications consultant with a key specialization in Public Sector and EU funded projects. He has been a communications advisor to various entities, governmental bodies and private organisations. He has also had a successful track record in designing and leading the implementation of communicational electoral campaigns of various political figures both in Cyprus and Greece. Panagiotis is an active member of Civil Society organisations in Cyprus.

Venetia Papa is a Lecturer in Journalism and Media Studies of the University of Cyprus. She has received her Ph.D. in Communication and Internet Studies from the Cyprus University of Technology (CUT) and her MA and BA from the University of Nice Sophia Antipolis in France. Her doctoral dissertation investigated the potential in both meaning and practices of ICT-mediated social movements and identified the meanings of active citizenship today within the contours of social movement activity. Since 2020, is the coordinator of the research lab DAT-ACT at the University of Cyprus working on the emerging big data ecology through innovative and advanced methodological tools. She has published several scientific articles in well-known referred journals in the field of Media and Communication studies such as the European Journal of Communication and the Information, Communication and Society. She is the co-author of the book *Mobilisations numériques: Politiques du conflit et technologies médiatiques* (Les Presses des Mines, 2017).

Vera Axyonova, PhD, is a Marie Curie REWIRE Fellow at the University of Vienna and Principal Investigator of the project “Expert Knowledge in Times of Crisis”. Previously, she worked in research, science management and policy consulting, including as the Managing Director of “Academics in Solidarity” at Freie Universität Berlin, Assistant Professor for International Integration at Justus Liebig University Giessen, and a Hurford Next Generation Fellow with the Carnegie Endowment’s Euro- Atlantic Security Initiative. Vera is co-founder of the ECPR Research Network on Statehood, Sovereignty and Conflict. She holds a PhD in Political Science from Bremen International Graduate School of Social Sciences.

Patrick Wilson is Head of Global Health Communications & Stakeholder Engagement at the UK’s National Institute for Health Research (NIHR). I have more than 20 years’ experience in communications roles in universities and research institutes focusing on science, medical and health research. I am active in various science communication networks including the Association of British Science Writers, BIG, Stembra, and ration-

alist / effective altruist groups. I lead weekly science-themed acoustic gigs / singalongs as ‘Super blurry astronaut’ and blog on <https://pathfindings.substack.com/>. Full career history and connect on <https://www.linkedin.com/in/patrick-wilson-323b591b/>

Alessandra Fornetti is Executive Director of the TEN Program on Sustainability at the Venice International University (VIU), Italy. With a humanities background, she has been working for almost two decades in the field of sustainable development, promoting research, capacity building, communication and dissemination of research results. In her role as Executive Director, she promotes the dialogue among the different stakeholders to support the creation of knowledge networks bridging research, policy makers, entrepreneurs and the wide public. Her current research interests include Sustainable Development, Science Communication, Communication of Environment, Cultural Heritage and Climate Change, Artificial Intelligence. She recently opened a unit on Science Communication and, more widely, on Communication of Research at her home institution, Venice International University where she launched a series of education activities on this topic. Among current and recent research projects: she coordinated H2020 project QUEST on Quality Science Communication (2019-2022) where she led an interdisciplinary group of scholars and professionals investigating and supporting quality science communication in different media, such as journalism, social media and museums, for scientists and communicators. She is currently WPLLeader in H2020 project MUHAI on human-centric artificial intelligence (2021-2024).

Ilda Mannino is Scientific Coordinator of the TEN Program on Sustainability and of the Intensive Graduate Activities of the Venice International University (VIU). She is PhD in Environmental Sciences, her current research interests focus on Sustainable Development, Green Economy, Science Communication, Sustainable Agriculture, Sustainable Consumption, Cultural Heritage and Climate Change. She coordinates and is involved in research and education projects on these themes at international level. Among these, since 2021 she is scientific coordinator of the CEI-KEP SMACH Project – Sustainable Management of Cultural Heritage in the Balkans in response to Climate Change. Best practices for adaptation and intercultural cooperation; in 2018-2021 she was Scientific Coordinator of the EU H2020 QUEST Project on Science Communication and actively involved in the development of toolkits on science communication and of policy recommendations (2019- 2021). In 2015-2019, she was involved in the EU H2020 Euclid Project, carrying out research on sustainability indicators, policies and consumers’ attitude toward food safety through stakeholders’ engagement and surveys. From 2004 to

2016 she designed the programs of over 300 trainings on sustainable development for civil servants from China, East Europe, and Central Asia within the SICP Advanced Training Program. She teaches courses at university and advanced learning level on sustainable development and science communication. She has several publications on these topics.

Massimiano Bucchi is professor of Science and Technology in Society and Director of Master SCICOMM, University of Trento, has been visiting professor in Asia, Europe, North America and Oceania. He is the author of several books (published in more than 20 countries) and papers in journals such as *Nature*, *Science* and *PLOS*. Among his books in English: *Science and the Media* (Routledge, 1998); *Science in Society* (Routledge, 2004); *Beyond Technocracy* (Springer, 2009; published also in Chinese, 2016); *Newton's Chicken. Science in the Kitchen* (World Science, 2020); *Handbook of Public Communication of Science and Technology* (3rd ed. 2021, ed. with B. Trench, Routledge). From 2016 to 2019 he was editor-in-chief of the international journal *Public Understanding of Science*. He regularly contributes to newspapers and TV programmes.

Tamara Dagen holds a PhD from the University of Zagreb. Her research interests are policy analysis in higher education. She published a book *Impact of Globalisation on Internationalisation of Universities* with Danica Fink-Hafner (2019), and several articles related to HE. Since 2016 she has been affiliated researcher at the University of Ljubljana, Faculty of Social Sciences research group, mainly focusing on the analysis of globalisation, internationalisation and Europeanisation concepts in higher education, and implementation of a Delphi method and other methodological techniques in the analysis of HE.

Melita Kovačević is a full professor at the University of Zagreb. She has been involved in a policy of higher education for two decades and she held different positions on national and European level related to HE. As a keynote or plenary speaker, she has delivered more than 150 speeches worldwide on HE, HE reform, academic leadership and doctoral education. She is a former Vice-Rector for Research and Technology of the University of Zagreb (2006 to 2014).

Dana Kühnel is a Toxicologist who is focusing on the effects of anthropogenic particles on environmental organisms. She has a PhD in Biology from the University of Potsdam (2006), and works at the Helmholtz Centre for Environmental Research - UFZ. Her research covers engineered nanoparticles, smart and advanced materials, and microplastics, with the aim to unravel their specific mechanisms of toxicity in aquatic organisms. A further focus of her research includes investigations into mixture effects

with other pollutants, and the grouping principles. For many years she has been actively involved in science communication in terms of the environmental safety of anthropogenic particles, via the web-based knowledge base www.nanoobjects.info.

Mojca Rupar Korošec, PhD, works at the National and University Library as a member of the NUK Research Group. Her current research interests are in the area of ethical values of data handling in the information community.

Monika Mačiulienė, PhD, is an associate professor and senior researcher at Kaunas University of Technology. She has been involved in academic research for the past 10 years. M. Mačiulienė is part of several international research projects e.g. EU-Citizen.Science (H2020), INCENTIVE (H2020), C3PLACES (H2020), Individually and together with the colleagues she prepared over 40 academic publications. Her research mostly examines interrelations between digital technologies and collective intelligence in various context (i.e. how we can make smarter decisions together by employing digital tools?). She is currently doing her post- doc on Open Science tools & initiatives and their role in Creative and Innovative Society.

Anja Skapin holds a PhD in literary studies, promotes science at the Research Centre of the Slovenian Academy of Sciences and Arts, and is the Editor-in-Chief of *Alternator*, an online journal for science. Her research interest is focused on literary history, interculturalism, and memory studies.

Rezearta Murati

1997-2001, University of Shkodra “Luigj Gurakuqi”, *Language and Literature*.

2002-2004, Master in Bulgarian –Romanian Interuniversity Europe Center. Dissertation “*Balkan identities and their contribution to the European multiculturalism*”

2018, Ph.D. from the Albanian Studies Academy, Tirana. Dissertation “*Language policies and language planning in Albania (Beginning of XX century)*”.

2001- , Lecturer in the Linguistics Department, Social Science Faculty, University of Shkodra.

2001-2022, Involved in several projects of ERASMUS, CEEPUS, HORIZONT, and COST.

Lexicology, Applied linguistics

2001-2022, More than 60 articles and papers

Irma Kuka

2004-2010, University of Turin, Italy, '*Laurea magistrale a ciclo unico in farmacia*'

Selected professional experience American Hospital Albania

February 2011-Present Pharmacist from 2011-2015: dispensed prescriptions: counseled the patients: ensured patient's safety: perform administrative tasks.

Technical Director Hospital Pharmacist from 2015- present. Responsible for the management of the medicines used in the hospital. Supervisor of the technical staff working in the pharmacy. Member of Infection Prevention Control (IPC) committee.

Member of International Patient Safety Goals (IPSG) committee.

Member of Access to Care and Continuity of Care(ACC) committee.

Member of Medication Management and Use (MMU) committee.

Qendra 'HEDA' May 2021- Present

Founder and Executive Director of the NGO, Qendra HEDA, a scientific platform that supports the Albanian-speaking public with information regarding health issues in general by collecting, summarizing, and disseminating scientific literature in Albanian language.

Gabriella Punziano, PhD in Sociology and Social Research is Associate Professor in Sociology and Methodology, Department of Social Sciences, University of Naples Federico II (Italy), where she teaches New data and new methods for communication analysis and Software for qualitative and quantitative analysis. Previously she was a Post-doctoral Research Fellow at the Gran Sasso Science Institute of L'Aquila. Among her research interests: the social research methodology, the new analytical frontiers and the challenges introduced by the new data; social policies and welfare regimes in relation to social inclusion, territorial cohesion and community integration; the analysis of communication phenomena through innovative content analysis techniques.

Rosanna Cataldo, PhD in Statistics, is researcher in Social Statistics (SEC-S/05) at the Department of Social Science of University of Naples Federico II. She is ordinary member of Italian Society of Statistics. Her main interests and competence fields are the construction of Social Composite Indicators through Higher Order PLS- Path Modeling, multidimensional data analysis and statistical methods for the study of social media and net communities. Her research is currently focused on gender inequalities, sustainability, quality of life, well-being and poverty.

Barbara Saracino is senior assistant professor of Sociology at the Department of Political and Social Sciences of the University of Bologna. Her main research interests deal with Methodology and Sociology of Science. She is expert in investigation techniques and analysis of both quantitative and qualitative data. She is member of the steering committee of the research centre *Observe Science in Society* and also coordinator of *Science in Society Monitor*.

Ferdinando Iazzetta is PhD student in “European History” at La Sapienza University of Rome where he is working on the research project “A green urban lifestyle: sociocultural determinants for a sustainable lifestyle of and in the city”. Her research interests include: social research methodology, new analytical frontiers and challenges introduced by new data in digital epidemiology, health and well-being, and sustainable lifestyles in the city.

