

2 - 11 July
University of Malta
Malta

steam

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welcome to steam

STEAM is a 10-day intensive summer school in science communication. We introduce an innovative form of education that includes Arts into the classical STEM (Science, Technology, Engineering, and Mathematics). Interactive experiments and informal learning with the use of creativity and arts are the key ingredients of our approach. Our ultimate goals are to improve science awareness and develop informed opinions, increase student uptake of STEM careers for high-level jobs, stimulate the socio-economic wellbeing of partner countries, and enhance the transferable skills of current researchers.

The Host: University of Malta

The University of Malta (UM), is the highest institute of learning in Malta. Its Msida campus accommodates approximately 11,500 students annually, including 1,000 international students from 92 countries. The university is a centre for academic research and higher education in the disciplines of the arts, sciences and humanities. Its mission is to serve the aspirations of the Maltese people through locally and globally significant rese-

arch and education.

The university has been involved in various EU-funded projects and has attracted over €44 million from the European Regional Development Fund and the European Social Fund since 2008. It is also represented in numerous European and international university networks and groups which it is eager to promote. ✨



The Quad at the heart of the UM Msida campus.

Malta: Island of Culture

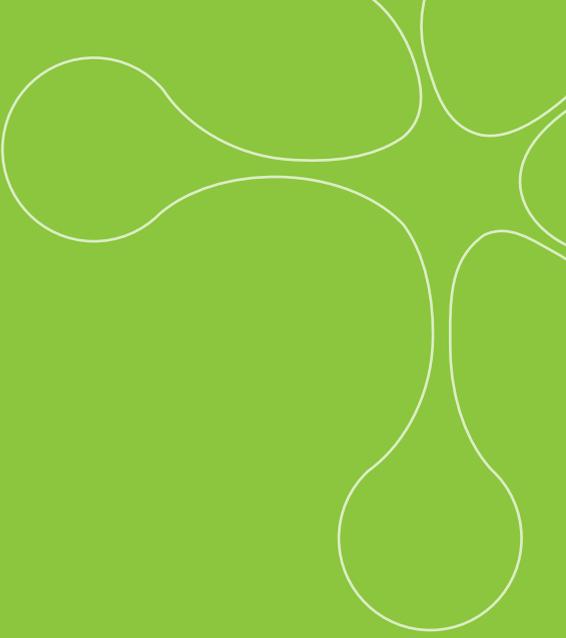
Made up of three islands – the main island and the smaller Gozo and Comino – Malta has an area of 316 km². These islands have a population of over 400,000, making Malta the 4th most densely populated country in Europe. Located in the centre of the Mediterranean, between Italy and Africa, the archipelago experiences a typical Mediterranean climate with an average of 300 days of sunshine per year.

Malta has a rich history with many rulers, including the Romans, Normans, Knights of St John and the British. In 1964 it became an independent state and it joined the EU



Luzzu boats - traditional fishing boats of Malta.

in 2004. The official languages of Malta are Maltese and English and you will find English is commonly spoken. ✨



speakers

The STEAM consortium brings together outstanding higher education institutions, science communication companies, and a European-wide network of science journalists. Through the exchange of best practice, an intensive study programme will train students and researchers to engage with the public.



Edward Duca

University of Malta, Malta
Think Magazine Editor, Science in the City (Malta) Festival
Manager, Innovation Communication Lecturer

Edward is the Publications Developer and Editor at the University of Malta for the research magazine THINK, that has reached three million online views. He is a PhD graduate in Genetics (University of Edinburgh) and a freelance science writer, editor and communicator. He has written for several local and international organisations including The Times of Malta, Science and Nature.

In Malta, he founded Malta Cafe Scientifique, which is the public outreach arm of the Malta Chamber of Scientists. Through

organising the annual science and arts festival Science in the City (visited by over 20,000 per year), he aims to bridge the gap between the sciences and arts. He believes the sciences and arts can benefit each other by providing inspiration, bringing new audiences to cultural events and pushing the boundaries of art into new fields, while shining a critical lens on science. He aims to continue setting up projects that communicate science to the public to create a scientifically literate society. ✨

Amanda Mathieson

University of Malta, Malta
EU Project Officer for STEAM and CREATIONS



Amanda is an EU Project Officer at the University of Malta, where she project manages the initiatives STEAM and CREATIONS. Through these projects she has designed and coordinated public engagement events, developed STEAM activities to be implemented in schools, delivered workshops in science communication and evaluated all of these projects for impact. Amanda has a BSc in Botany and an MSc in Science Communication, both from the University of

Manchester.

In addition to experience in public engagement and science communication theory, Amanda is a professional photographer, graphic designer, videographer and animator, and has previously worked for the NHS, communicating medical research. Her main interests include the use of engaging visuals for science communication and the potential for games as an education tool. ✨



speakers



Cassi Camilleri

University of Malta, Malta
Think Magazine Editor, Freelance Scriptwriter and Director

Cassi is the co-editor of THINK, the research magazine of the University of Malta and chairman of the Creative Writer's Alliance Malta. With an undergraduate in Communications and an MA in screenwriting, she is an expert in narrative and places an emphasis on good storytelling in her work. Through THINK, Cassi also organises innovative public engagement events, such as THINK Soapbox, an event where members of the public can give a short opinionated spe-

ech inspired by the latest articles. In addition to print media, Cassi works as a freelance scriptwriter and director who began her career as a PA and screenplay analyst for FishCorb Films. Since then, she has written the short film Shab, shown at the Cannes Film Festival and nominated for Best Short Film at the Valletta Film Festival. She has produced numerous videos for THINK's social media pages and has lead a project training young people in filmmaking called 'Littlebot Film Labs'. ✨

Heather Rea

University of Edinburgh, UK
Project Leader of the Beltane Public Engagement Network



Heather is the project leader of the Beltane Public Engagement Network at the University of Edinburgh. Her role has been to lead a culture change project improving the participation in and perception of public engagement activities in academia. She has had three years of experience in producing and delivering public engagement with engineering

projects for science festivals, museums and schools, following 11 years of research in engineering information management tools. She has expertise in public engagement, participation and dialogue, public policy, social media, knowledge information management, 3D shape content retrieval and robot kinematics. ✨

Alexandros Koukovinis

Science View, Greece
EU Project Officer for NUCLEUS



Alexandros holds a Master of Arts in Information and Communication Technology in Education and a Bachelor in Pedagogy for Primary Education, from the University of Athens. He started working in 2012 in promotion and public relations. In 2013 he worked at Media Market headquarters in the communications and customers' service department while at the same time he was a researcher in European projects for the National and Kapodistrian University of Athens. Since 2016 he's been working for Science View

where he manages and implements European projects. He is mainly involved in the H2020 NUCLEUS project where he is in the evaluation and monitoring team and also in the ER+ CASE project for Creativity Arts and Science in primary Education. He is in the production team of Science View's monthly bulletin and is responsible for Science View's websites and social media, as well as the organisation and implementation of the Learning Science Through Theatre initiative. ✨



Elizabeth Stevenson

University of Edinburgh, UK
Programme Director for Science Communication
and Public Engagement

Elizabeth is the Programme Director for the on-campus and online Masters in Science Communication and Public Engagement at the University of Edinburgh. In addition to her teaching experience in science communication and public engagement, Elizabeth has six years of undergraduate chemistry teaching experience. She also has

twenty years of experience in engaging public audiences with science in schools, museums, science and community festivals. She is specialised in public engagement, science communication, researcher training, collaborative working, chemistry demonstrations and hands-on activities. ✨



Alexander Gerber

Rhine-Waal University, Germany
Professor and Course Director for Science Communication



Alex is a professor of International Science Communication at Rhine-Waal University, Germany, where he coordinates a fully-fledged 3-year Science Communication degree programme in English. His research mainly focusses on socio-political dimensions of science-society issues.

Calling for 'open science communication' he emphasises the shared responsibilities of the different stakeholders of science. The degree programme at Rhine-Waal University puts less emphasis on training basic technical/ journalistic skills such as writing or storytelling, and more on strategy and manage-

ment, evaluation and even entrepreneurship. Additionally, students are trained in the methods of approaching science communication as a research discipline.

Alex is an elected member of the governing boards of the science communication world association PCST and Europe's grassroots organisation for research, EuroScience. In 2011, he initiated a series of 'Trend Studies' on science communication. Previously, as an information scientist and long-time science journalist/author/film director, he was Head of Marketing & Communications at Fraunhofer (ICT) for seven years, and founder and editor-in-chief of InnoVisions Magazine. ✨



Berit Viuf

EUSJA, Denmark
Vice President of EUSJA, Denmark
Freelance Journalist and PR Advisor

Berit is a freelance journalist with ten years of experience writing for Danish newspapers and magazines. She also podcasts and is interested in a wide range of topics, from the latest discoveries in genetics to sending animals to space. She graduated from Roskilde University in 2001 with a degree in Technology, Environment and Society and later went on to study at the Danish

School of Media and Journalism. She is an expert in science dissemination and is often hired as a PR advisor to promote projects to a broader audience.

Berit is Vice President of Danish Science Journalists and one of her main pursuits is putting science and research on the agenda in Danish and foreign media. ✨



Merja Drake

Haaga-Helia University, Finland
Principal Lecturer for Research Methods

Merja is a principal lecturer at Haaga-Helia. She teaches research methods and supervises bachelor and master theses. She is also a project manager in the Smart DigiCitizen project and research leader in project Agile Model for MOOC Production and the member of the project group Sharing City and Collaborative Brands. Both

projects are researching the sharing economy and its impact on Finnish communities and old brands. Merja is a researcher in journalism, online journalism, blogs, Internet, web-based information, information retrieval, organizational communication, health information and health communication. ✨

Our STEAM Volunteers

This year we are lucky to have STEAM volunteers who are all alumni from previous schools and have really impressed us with their SciComm skills. Hans and Jelena both won steamLab at their respective schools, Arsenia had us in stitches with her hilarious and unique math-e-magician stand-up routine during Bright Club and Stella shone in the leading role of 'CinderStella' at last year's Science Theatre. Meanwhile Dina, an international FameLab finalist, helped judge our steamLab in 2017. The team will be helping out with our social calendar and logistics, as well as giving you guidance on your practical assignments. ✨



Stella Tsilia



Dina El-Zohiry



Jelena Mijatovic



Arsenia Gaiti



Hans Sonntag

the programme

DAY	TIME	MON 2	TUE 3	WED 4	THU 5
Morning Session	9:00 am				
	10:00 am	Icebreakers & Introduction	Create & Act	Dialogue & Deliberation	Engage & Evaluate
	11:00 am				
Lunch	12:00 pm				
Afternoon Session	1:00 pm				
	2:00 pm	Present & Moderate	Create & Act	Dialogue & Deliberation	Engage & Evaluate
	3:00 pm				
Evaluation & Project Work	4:00 pm	Evaluation	Evaluation	Evaluation	Evaluation
	5:00 pm	Dialogue Rules	Project Work	Project Work	Project Work
	6:00 pm				
Social Events	7:00 pm				
	8:00 pm				
	9:00 pm				
	10:00 pm	Science Cinema			
	11:00 pm				

Where should I go?

Every day transport will be provided from in front of the Bay View Hotel which is located on Gzira coast next to the Ponsonby bus stop. The hotel is part of the same group as the Blubay Apartments and is where the restaurant is located, so you can ask at reception for directions. The coach will leave at 8:20am each morning unless stated otherwise. Those making their own way to University should go to the Gateway building and locate Hall C on the second floor.

	Module Work	Facilitary Sessions	Project Work	Social Events	
FRI 6	SAT 7	SUN 8	MON 9	TUE 10	WED 11
Media & Journalism		Media & Journalism	Manage & Monitor	Advocate & Influence	
					Reflection Session
Media & Journalism	Social Excursion	Online & Social	Manage & Monitor	Advocate & Influence	Networking Lunch
Evaluation			Evaluation	Evaluation	
Project Work			Project Work	Project Work	
					Sick of Science Party
Science Theatre & steamLab				Bright Club & Film Festival	

present & moderate

1 pm – 4 pm
Mon 2

focus

presentation skills
engaging different audiences
moderating science communication events
introduction to steamLab and Bright Club

speakers

Edward
Duca



Elizabeth
Stevenson



Amanda
Mathieson



Introduction

The amount of STEM graduates around Europe has remained level for a decade while jobs in this sector have increased. In addition STEM graduates can lack communication and team working skills. A key need for STEM graduates is the ability to present effectively to various audiences, be it when trying to inspire the next generation of researchers or presenting a conference keynote conveying the latest research.

There are countless resources outlining key public speaking tips. However, there can be a significant time lag between learning this theory and practicing it. Public speaking is a skill that requires practice, coupled with reflection and constructive criticism, in order to perfect.

Apart from presentation skills, this module will convey public event moderation skills. The aim is to cover different science communication events since good moderation of a public event can change an average activity into a memorable one.

Session

The first two hours will include a basic framework to introduce presentation tips and pit-falls to avoid. This theory will be followed by a break-out session that initially helps people relax and warm up. The session will involve practicing these newly learnt presentation skills while receiving constructive feedback. Repetition will help hone these skills.

After these two hours, an hour will be spent covering use of interactive experiments in order to engage an audience with a scientific phenomenon. The experiments will be used to showcase two key things. First is the use of inquiry-based learning. Second is how to understand your audience to be able to use the same experiment with different audiences.

This section will be finalised by a theoretical session on moderation skills and different science communication events followed by a mock-event. You will need to moderate and participate in a dialogue on a controversial topic within science communication / journalism to be unveiled during the session.



Dina performs at the FameLab internationals 2016.



Project Work

During each half of the course you can choose to complete either an individual or group assignment. Both individual assignments are linked to this module.

For the first half of the course the assignment is **steamLab**: a mock FameLab-style event. FameLab is an initiative by the British Council and Cheltenham Science Festival, it started in 2005 and is now an internationally known science communication competition. For this assignment you will need to create a three minute presentation that communicates a scientific topic of your choosing. The presentation should be engaging and accessible to various publics. If you choose to take on this assignment you do not need to participate in the group assignment (Science Theatre) but you are free to participate in both should you wish to. Our steamLab presentations will be delivered with the Science Theatre performances at our event on Friday. The event will be open to Maltese locals.

For the second half of the course, the individual assignment will be **Bright Club**: inspired by the Bright Club initiative in the UK. Bright Club sees STEM topics turned into stand up comedy routines and performed before a live audience. It was started by University College London and has now spread across the United Kingdom and Ireland. For this assignment you will need to write and deliver a short science comedy routine based scientific topics of your choosing. The funnier you can make your routine the better, but unlike steamLab this is not a competition and is instead a chance to try your hand at science comedy in an encouraging and receptive environment. If you choose to take on this assignment you do not

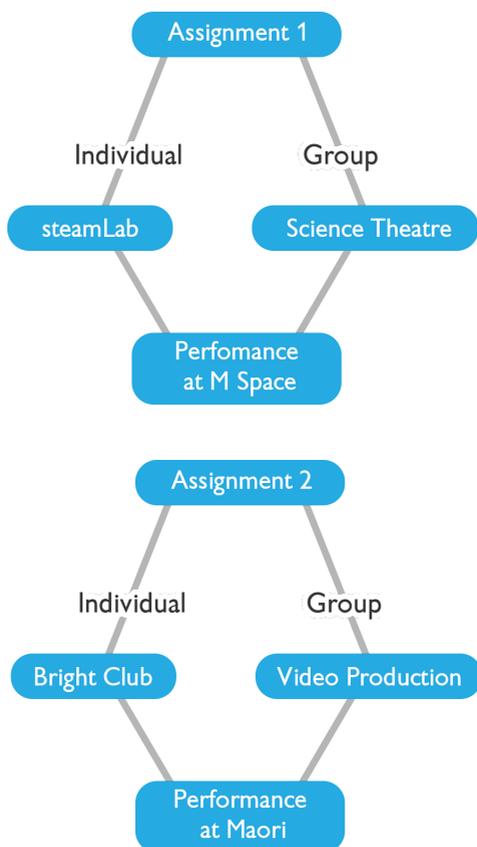


Read more about FameLab and Bright Club on page 36



need to participate in the group assignment (Film Production) but you are free to participate in both should you wish to. Our Bright Club comedy routines will be delivered with our film screenings at our event on Monday. The event will be open to STEAM participants only.

Project Work Summary



create & act

9 am – 5:30 pm
Tue 3

focus

scientist/artist relationships
science and art events
science and art EU initiatives
science theatre

speakers

Alexandros
Koukovinis





STEAM Science Theatre performance, 2016

Introduction

In a rich context where literature, philosophy, culture or society are involved, science benefits from art, and vice versa. Create & Act is about using art to communicate science more effectively in an interdisciplinary and multidisciplinary approach. The lesson's main aim is to give you the opportunity to stage a play and dramatise scientific concepts based on material from any field of science.

When it comes to educational purposes, traditionally the body is rarely used to its full potential. Every involvement of the body has mostly been excluded from the educational practice, the process of learning, and interaction among students. The notion of embodied learning is becoming more and more accepted by the educational community. The body does not solely constitute a means of knowledge, or function as a mediator, but also reflects people's interaction with their environment.

People can utilise their bodies as a source of knowledge, while feeling alive and active in the process. As a result, the body can be activated and used as a communication channel with others. Each time the human motor-sensory system is involved, the stimuli it perceives can be converted into a more stable, powerful memory and cognitive representations form through embodied learning. This allows people to directly connect their movements and gestures to communicate scientific concepts, which they perceive as embedded in educational activities.



Session

î Through this module you will become acquainted with the concept of learning science creatively through Science Theatre and other art activities. We will explore what Science Theatre is and how it can help to deepen science knowledge through creative expression. Following this, you will be introduced to STEM and Arts initiatives within the EU to serve as inspiration for how STEAM can be done well.

î

î There will be a warm-up activity to get you accommodated to using your body for communication and in groups you will develop and perform a short play. The play will be based on a topic chosen by you and should be able to describe fundamental concepts within your chosen topic. This activity will provide a background for the larger Science Theatre assignment.



STEAM Science Theatre performance, 2017

Project Work

During the course there will be the opportunity to complete two large group assignments: Science Theatre and Film Production. The first half of the course will be focused on the Science Theatre assignment, where you will work as a team to develop a play based on a scientific concept. The play will be performed to an audience of your peers and Maltese locals at an open event hosted on Friday.

Your science performance will be completed through the following 7 phases:

Phase 1: Investigate a scientifically-orientated question and analyse its scientific significance and social impact by a brainstorming session first, and web research later.

Phase 2: Look for evidence behind the theory, and see how it can be implemented into a theatrical design concept in smaller groups:

î **Director:** Investigate characters and generate ideas for dialogues/actions that might be used towards the making of a script.

î **Actors:** Investigate characters and work on your performance in collaboration with your director.

î **Music:** Generate musical ideas which correspond to the script.

î **Dance:** Consult with your director, actors and musicians to generate choreography ideas to incorporate into the play.

î **Set/costumes:** Consult the director and collect materials.

Phase 3: Compile the ideas generated from Phase 2, finding patterns, and assessing their quality.

Phase 4: Formulate an explanation, of the scientific topic chosen, based on evidence, while considering alternative scenarios. Provide creative theatrical scenarios or scripts to strengthen it.

Phase 5: Connect your explanations to scientific knowledge, and connect the theory to other disciplines, such as music or technology. Consult with your peers specialised in arts, theatre and music.

Phase 6: Communicate and justify your explanations by performing a science theatre play.

dialogue & deliberation

9 am – 4 pm
Wed 4

9 am – 12 pm
Mon 9

focus

participation and
communication theory
dialogue, debate & deliberation
stakeholder theory and analysis
dealing with controversial
topics

speakers

Heather
Rea



Alexander
Gerber



Introduction

Context, dialogue and deliberation aims to deliver a background to public engagement with research in the European Union and the process of dialogue and deliberation methodologies. The history and current situation surrounding public engagement with research will be introduced, in particular the current trend to consult publics on new technologies. Furthermore, we will introduce the definition, theory and some techniques to enable group discussions and deliberation for effective decision-making.

Session

In the morning we will introduce the history and politics surrounding science communication. You will develop an understanding of what constitutes participatory engagement and dialogic activities and how these approaches can enable increased understanding, particularly around controversial topics. Different forms of communication styles are compared and their benefits and limitations will be examined.

In the afternoon we will explore how a dialogic process enables a diversity of voices to contribute to a discussion. In order to ensure a diversity of voices, it is important to identify all stakeholders and develop an understanding and respect for their view points. This session will help you to identify who you should involve in your dialogues and how you might identify and cater to their needs. We also introduce the elements of deliberation and provide the opportunity to participate in, and/or practice facilitating, a deliberative discussion.

In the final session we will cover advanced techniques for dialogue when faced with controversial topics. You will suggest topics you find controversial and we will use the "Thinking Hats" technique to explore these topics from new perspectives. By the end of the session you should understand of how and why dialogue is useful when dealing with contentious issues and why it's useful to engage constructively with people who have a different viewpoint.



engage & evaluate

9 am – 4 pm
Thu 5

focus

enhanced presentation and
engagement skills
adapting to different audiences
basic evaluation of science
communication activities

speakers

Elizabeth
Stevenson



Introduction

While there are certainly general guidelines to follow for presenting and engaging, it is important to be aware of and adapt to the needs of specific target audiences. Meeting the requirements of various publics increases accessibility and the willingness to participate. Similarly it is also important to consider the values and expectations of an audience in order to ensure any activity is well received.

These needs, values and expectations are not always predictable and can change over time, therefore it is necessary to consistently evaluate science communication activities for their impact. Good evaluation can provide valuable data to help identify your science communication goals, analyse if these goals are being met and establish if there are areas that need to be improved. By performing good evaluation and making changes relevant to the data you can more confidently conclude that your science communication work is having the desired effect.

Session

This session follows on from and develops our session on introductory presentation skills by exploring some key presentation issues, particularly for interactive presentations and drop-in type activities. You will have an opportunity to create a simple science demonstration and develop it into a hands-on activity in a format that is suitable for a range of events and audiences. We will explore engagement for different audiences including schools and the needs, values and expectations such audiences might have.

In the afternoon, you will have the chance to explore challenges in your science communication practice. You will be able to utilise your own area of scientific research expertise to creatively develop a science communication activity. We will utilise this learning to introduce simple evaluation of science communication activities and you will then reflect on and design basic evaluation strategies for science communication.



media & journalism

9 am – 5:30 pm
Fri 6

9 am – 12 pm
Sun 8

focus

writing an article and getting published
introducing narrative to your writing
running a research magazine
the growing relevance of video
video production skills
media consumption and fake news

speakers

Edward
Duca



Cassi
Camilleri



Amanda
Mathieson



Merja
Drake

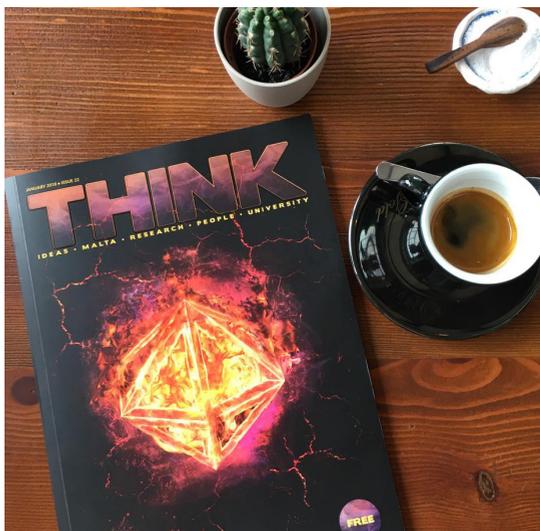


Alexander
Gerber



Introduction

One of the most common forms of science communication is the written word, whether this be articles, blogs, press releases or any other myriad of formats. When thinking about good science writing we often think about the ability to take complicated research and explain this succinctly and accessibly, while remaining faithful to the science. This often overshadows another major feature of good writing; forming a narrative. While communicating accurately is certainly important, so is introducing narrative as an uninteresting piece of writing will likely go unread. Consequently, in this module we focus on storytelling as a means of producing engaging writing.



Another, growing form of science media is video, as filmmaking becomes a more accessible pursuit. With the increasing ubiquity of internet access and smartphones, it is now possible for the average person to shoot and broadcast video which can be watched anywhere, at any time, by anyone. It is no wonder that this format is growing in popularity. Digital, multisensory and cheap to produce, video is an ideal tool for education and dissemination. As a consequence, filmmaking skills are an essential part of the science communicator's toolkit.

Finally, an emerging area for concern is fake news. In the span of 347 days, President Trump made 1,950 false and misleading claims. Then what about the newest technology that creates realistic facial movement to match a spoken soundtrack? What does that have to do with fake news? In this climate we must be trained in fact-checking and ought to consider, what are the roles of the press in a democratic society and what are the most important values of science journalism?

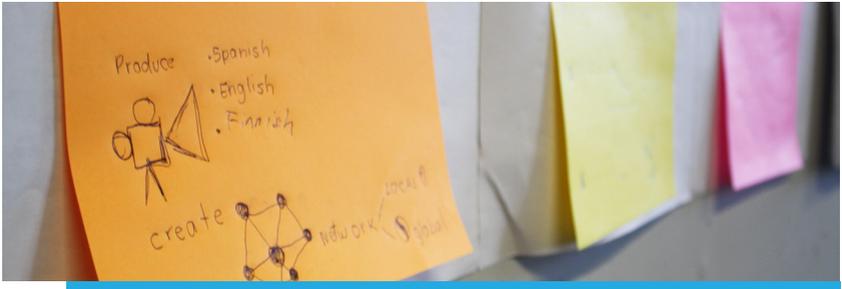
Session

Î In our first morning session we will explore the art of writing for science communication purposes. To begin with, you will be introduced to the life of a freelance journalist; covering pitching, networking and entrepreneurship. We will expand on this to showcase how you can set up a research magazine, with THINK as a case example, and will discuss corporate communication strategies. Later, we will move into the finer details of good writing by examining the use of storytelling for engaging prose and good linguistic flow. You will also have the opportunity to learn to use scriptwriting software and adapt your writing to this format.

Î

Î In the afternoon we will move onto our filmmaking session, which will prepare you for the second group assignment: Video Production. Those who are participating in Bright Club do not need complete a film but should participate in this session and are more than welcome to contribute to the group work if desired.





Ĥ The session will begin with an overview of the growing relevance of video, with a particular focus on how this media format is altering science. You will then complete an activity where you will play the role of a small production team discussing how to meet a new client brief. We will follow this with a basic introduction to the structure of a production team and the stages of production and your assignment will be explained. At this point, it will be up to you to decide what role on the production team you would like to fill. The roles are:

1. Director / Scriptwriter
2. Assistant Director
3. Director of Photography
4. Sound Technician
5. Editor
6. Talent

Ĥ You will then form groups to agree on a concept for your film. With this concept in mind, most of you will separate from your group and will be given specialised training within your chosen role. Meanwhile the directors will develop a basic script for the film. Finally you will go back to your group to discuss the script, offering possibilities based on your new skills. By the end of the afternoon you should have developed a shot-list which can be handed in for feedback before you begin filming in your own time. Final feedback will be given on your completed film when it is screened at our event on Monday.

Ĥ

Ĥ In the last session of Media & Journalism you will learn the process of fact-checking and the concept of fake news. We will discuss what are the most important values for journalism and the role of the free press for society. Finally, we will briefly explore the media consumption habits in different countries.

online & social

1 pm – 4 pm
Sun 8

focus

brand establishment
SEO strategy
succeeding on social media
platforms
developing an awareness
campaign

speakers

Amanda
Mathieson

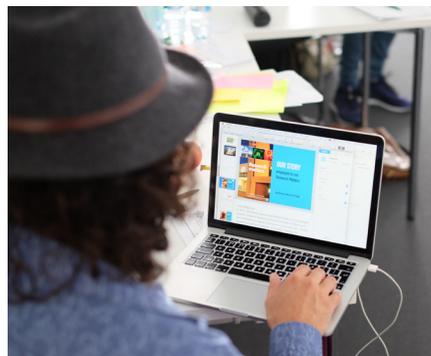


Edward
Duca



Introduction

The internet has become a ubiquitous feature of modern society and increasingly conversations are moving online. The ability to use digital tools and social media to represent yourself and build an online presence has become an essential skill in science communication. The Internet also provides an ideal platform to not only reach wide audiences but to create and interact with communities for real engagement. However the online sphere is a noisy environment and standing out requires a business-like approach backed up by efficient marketing strategy.



In this session, we will take a corporate approach to building a brand and developing its awareness, focusing on the application of large social media platforms such as Facebook, Twitter, and YouTube as well as techniques such as Search Engine Optimisation (SEO).

Session

We will explore the benefits of establishing a consistent brand and you will then learn how to develop this through the example of a branding bible. In teams you will create your own brand for a fictional blog, channel, company or organisation. We will then cover search engine optimisation strategy as a tool for increasing traffic to your website or social media pages.

With your brand in mind, we will examine social media sites, including Facebook, Twitter, and YouTube, focusing on the advantages of each platform for science communication purposes. Specifically we will cover:

1. Facebook: The use of Facebook advertising to target specific audiences for your events.
2. Twitter: How to follow trends and use them to your advantage.
3. YouTube: Building your subscribers by creating an interactive community.

Following this we will share techniques for building brand awareness and in teams, you will develop your own campaign, compiling the elements above as well as your own ideas.

manage & monitor

1 pm – 4 pm
Mon 9

focus

managing a science
communication initiative
identifying collaborators
sourcing funding
evaluation of a complex project

speakers

Elizabeth
Stevenson



Edward
Duca



Introduction



Engaging with the community and having a two-way conversation between the public and scientists may be the best way to communicate science. Scientists cannot only deliver information without getting any feedback. Through the manage and monitor approach, the community itself can participate in its own learning. This layer of communal engagement is important in the terms of the societal level of Responsible Research and Innovation – the

innovators must be mutually responsive to the needs of their community.

As science communicators and public engagement practitioners, we are representing 'science' and also representing the organisation for which we work. Therefore we should always aim to deliver high quality science communication and public engagement activities and events. The success of an event not only depends on the creativity of the science communicator, it also depends on their skill as a project manager which includes developing an effective evaluation strategy. Evaluation provides evidence of the success (or otherwise) of the event and is also a very useful reflective tool to enable us to develop as science communicators.

In addition to evaluation tools, effective management, planning, collaboration and ability to secure funding are essential skills for a science communicator and enable them to effectively deliver and evaluate large-scale science communication initiatives.

Session

The session will begin by exploring case studies of science communication initiatives, after which we will have a discussion about good science communication practice and leadership styles. This will be followed by a presentation focused on identifying funding sources to support a large science communication project. From there we will build on good practice by examining evaluation techniques that can be employed on a greater scale. You will have the opportunity to design a large initiative in teams whilst considering how you will evaluate it. Finally you will present your ideas to the group and discuss.

advocate & influence

9 am – 4 pm
Tue 10

focus

lobbyism and advocacy
policy briefs
lobbyism and fake news
responsible research and
innovation

speakers

Berit
Viuf



Introduction

Political development is impossible without lobbyists and political advisors who can brief politicians. It is certainly also important in science where financing and legislation has a huge impact on society. In this module you will get an introduction to lobbying and what potential pitfalls journalists and communicators must take into consideration when covering various scientific topics.

Fake news can be the result of lobbying whether intended or unintended. In the media landscape of today where news is spreading through social media, there is a potential danger of lobbying as false messages can travel far and fast. Fake news has been part of the news industry forever, but today we face new criteria and challenges. This module will introduce you to various definitions of fake news and how to deal with it.

Responsible Research and Innovation

Responsible Research and Innovation (RRI) is a fairly new concept within the EU. It is a concept that aims to involve all groups of society, and let different groups influence the topics studied and developed in universities and innovation companies. But how do journalists and communicators deal with RRI? Is it a way to avoid the downsides of lobbying? This is also a theme to be discussed in this module.





social & public engagement events

During STEAM Summer School we will be hosting various social and public engagement events, including a science cinema night, science theatre & steamLab, a Bright Club & film screening evening as well as a social excursion, networking lunch and the Sick of Science boat party. Some of these events will be an opportunity for you to demonstrate your science communication skills as you showcase your project work, while others will be a chance to socialise, relax and network.



Science Cinema

Have you ever wondered how much science, in contrast to fiction, your favourite movie really has? Mobile phones, nano technology or self driving cars are all concepts that have made their first appearance in science fiction, but have since become a reality through advancements in science.

The idea behind Science Cinema is to watch a science-related movie to spark interest and discussion around a selected field of sci-

ence. The focus varies depending on the movie screened and you might discuss technological advances or incredible biological discoveries. Many science fiction movies place their story in a very different societal context. You can discuss ethical problems and utopian societies, and compare them to our current, as well as past situation.

We will hold a movie poll on the first day to select which film we will watch and this will be followed by a quiz. Choose wisely! ❁



FameLab

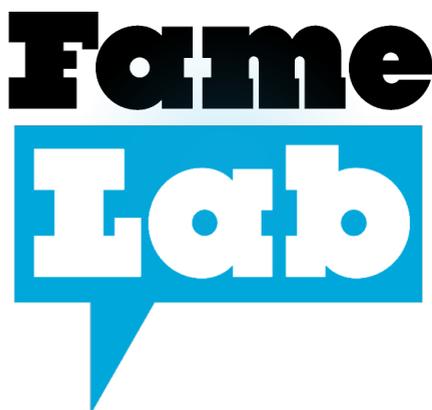
Over the years, FameLab has given scientists around the world the opportunity to compete against each other; testing their skill at engaging, entertaining and breaking down science for the public in short 3 minute presentations. It has also broken the barrier between scientists and the rest of society, depicting scientists as just normal people.

FameLab gives you a snapshot into the world of science and engineering and is dedicated to answering both bizarre and pertinent questions from 'Why do men have nipples?' to 'Is nuclear energy a good or bad thing?' Such questions intrigue curiosity and it is a scientist's job to discover the answers and deliver them to the public.

You, as a member of the audience, can also

engage with the show. You have the power to judge the contestants along with the panel of scientists, journalists, writers and public figures.

The contestants will be judged on their ability to present accurate and well-balanced content clearly and charismatically. ✨



Bright Club

Bright Club is an event that takes STEM concepts and presents them through the medium of a stand-up show, in something like a comedy club setting. Bright Club allows scientists, researchers, academics, or anyone with specialised knowledge in a STEM field to take the stage and present a short talk about their area of expertise in

a fun, engaging and largely humorous environment. Participation in Bright Club events presents an unprecedented opportunity to showcase ongoing research, educate a diverse audience on topical and current scientific study, as well as brush up on public speaking skills and comedic timing, all on a vibrant public platform. ✨

Social Excursion to Esplora

Esplora Interactive Science Centre is the first of its kind in Malta. Located in Bighi, the centre has its own planetarium, an outdoor adventure experience, an activity centre and interactive exhibition halls with over 200 exhibits. The exhibits are designed to show how science is relevant to our daily lives.

The planetarium is a 10.7m in diameter, colorspace 4K theatre which hosts shows

related to the Earth and our universe. The activity centre allows visitors to experience science through hands-on activities, theatre, art and music and the outdoor experience also contains an amphitheatre and a botanical garden.

At Esplora you will be given a tour of the exhibits while you evaluate the quality of their science communication and consider means for improvement. ✨

Travel

The coach will leave from Bay View Hotel at 10am, heading for Esplora and will also take us to Valletta in the afternoon. The coach will then leave Valletta at 8pm to drop you back on the Gzira coast, however you can leave at any time using the buses 13, 14 15 or 16. Buses leave from a stop near the Triton Fountain and cost €2. ✨

Valletta - Capital of Culture 2018

After Esplora we will move on to Valletta where you will have free time to explore from 3pm onwards. Valletta is Malta's capital city and the EU Capital of Culture 2018 – find out more at: <https://valletta2018.org>

While there is plenty to do in Valletta here are our recommendations:

Spazju Kteattiv: Malta's national centre for creativity at St James Cavalier in Valletta, where numerous exhibitions are hosted annually. In July it will be showcasing Found ä mentalism II - an exhibit inspired by Picasso.

Lascaris War Rooms: A complex of tunnels and chambers underground where defence of Malta was conducted during World War II. You can have an audio tour and see a short film about Malta's role during the war.

Other must-see attractions in the city include the **Grand Master's Palace**, **St. John's Co-Cathedral** and the **National Museum of Archaeology**.

Also worth visiting are **St Georges Square**, the main square in Valletta and **Upper Barakka Gardens**, public gardens with a view over the Grand Harbour and waterfront. ✨

the venue

Shopping & Activities

Gzira coast boasts numerous shops including ticket centres where you can book diving sessions, various tours and other experiences. Within walking distance of the apartments is Manoel Island, home to Fort Manoel and built in the 18th century by the Order of Saint John.

Further up is the city of Sliema where you can find shops, bars, restaurants and Tigné Point – Malta's largest shopping mall. Sliema coast is a popular spot for sunbathing on the rocks and is one of the few areas you can BBQ without a permit. The sea just off the rocks is also great for snorkelling with calm waters and plenty of fish to be seen!

You can take the Sliema ferry to Malta's capital city of Valetta every half hour. Valetta is the European Capital of Culture 2018 with 400 events taking place throughout the year, as well as the Malta International Arts Festival which will be running from the 29th June until the 15th July with performances for all audiences.

For those happy to travel, we recommend Mdina, the original capital of Malta. A fortified city with a population of less than 300, Mdina is home to St. Paul's Cathedral and nearby in Rabat you will find St. Paul's Catacombs. It's also where you will find the famous Crystal Palace – a café serving up the 'best pastizzi in Malta!' ✨

Malta's coast has numerous diving sites and is great for snorkelling.



Culinary & Nightlife

As you can expect from its location, Malta's cuisine is an interesting mix of Italian and North African influences. You may be interested to try the rabbit stew, the aljotta (traditional fish soup) or the fried gbejna (crispy balls with molten sheep's cheese). For a quick lunch you'll find plenty of pizza and pasta places as well as the iconic pastizzi, a filo-like pastry stuffed with a cheese or pea filling. And at 30-40c each, they are a bargain!

When it comes to drink, Malta has its own unique soda known as Kinnie. With a faintly aniseed-like flavour, it can be drunk on its own as a soft drink or mixed with alcohol. It is made by Farsons, the same company that distributes Malta's national beer: Cisk. Cisk is a refreshing lager with a low carb version as well as those flavoured with berry, lemon and ginger lime.

With its Mediterranean climate, Malta is also a producer of delicious wine, steeped in tradition that dates back to the Phoenicians. There are many varieties produced in both Malta and Gozo but they are not widely distributed, so take the opportunity to try them while you're on the island!

And if you're looking for night-life you won't need to go very far as the coast is packed with bars, pubs and clubs that are great for casual socialising. We recommend



Aljotta (left) and pea pastizzi (right).



Live DJ at Funky Monkey, Gzira

checking Facebook for daily events such as live music, open-mic nights, stand-up comedy, karaoke and more. For the more intense clubbing experience you can try Paceville, Malta's nightlife hub and a destination for many tourists and party-goers.

The staff at UM love their food and drink, so if you want specific recommendations just let us know!

Important Spots

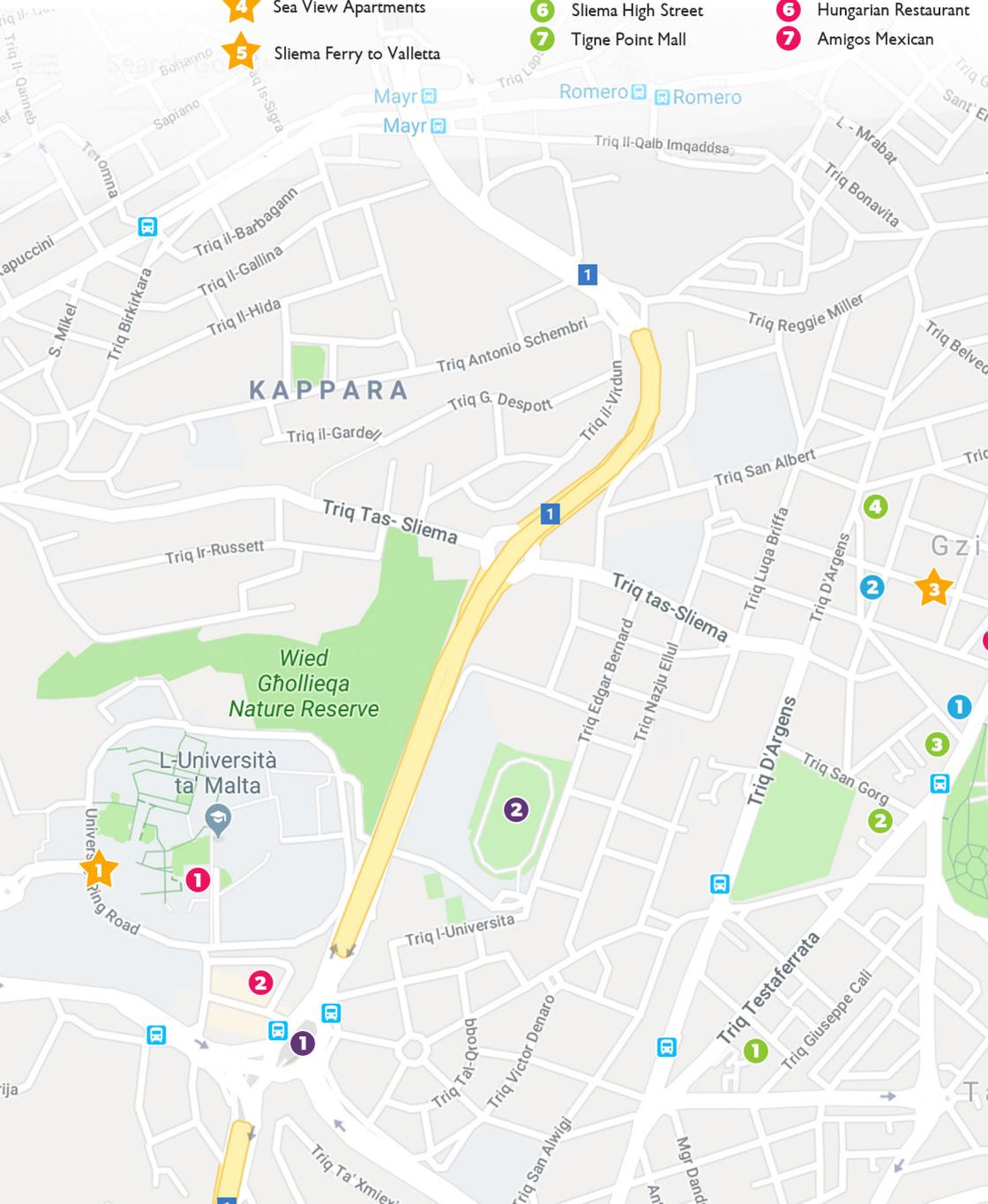
- 1 STEAM Summer School
- 2 Bay View Hotel and Ponsonby Bus Stop
- 3 Inland Apartments
- 4 Sea View Apartments
- 5 Sliema Ferry to Valletta

Shopping

- 1 Gala Supermarket
- 2 Miracle Foods
- 3 Convenience Shop
- 4 Pharmacy
- 5 Tower Supermarket
- 6 Sliema High Street
- 7 Tigne Point Mall

Food

- 1 UM Canteen
- 2 New York Best / Hango
- 3 Mr Maxim Pastizzi
- 4 Ta'Kris (Traditional Maltese)
- 5 Yoshi Sushi / Eet Well
- 6 Hungarian Restaurant
- 7 Amigos Mexican





STEAM Conference

Following on from the summer school, and to mark our final year as an EU-funded project, STEAM will be hosting a free conference on the 14th July to celebrate our achievements to date and promote the future of science communication through STEM and the Arts. The conference will be held at the Valletta campus of the University of Malta.

The conference will focus on STEAM Summer School alumni, showcasing the achievements they have made since attending, but anyone with an interest in STEAM is welcome to attend and promote their current projects and ideas. We will also be unveiling our expanded website which is crammed full of resources produced throughout the project, such as science communication toolkits for running your own events and downloadable experiments for teachers and demonstrators.

The conference is open to:

1. Science communication professionals
2. STEM educators
3. EU project coordinators
4. STEM postgraduate students and researchers
5. Artists/creatives with a passion for STEM

Join us for an entire day of engaging talks, workshops and networking with science communication enthusiasts from around the globe.

We are also hosting an evening seminar for STEM educators on the 13th July. This will include talks related to the STEAM ethos of combining STEM and the Arts for delivering better, more engaging science communication for students. ✨

www.steamsummerschool.eu

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