HACETTEPE UNIVERSITY

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PCST The Global Network for Science Communication

PCST 2016

Public Communication of Science and Technology

April 26-28, 2016 / Istanbul - Turkey

Programme and Abstract Book

www.pcst-2016.org

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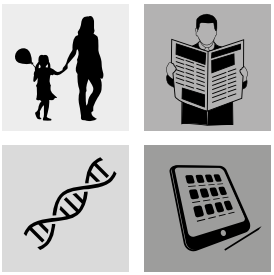
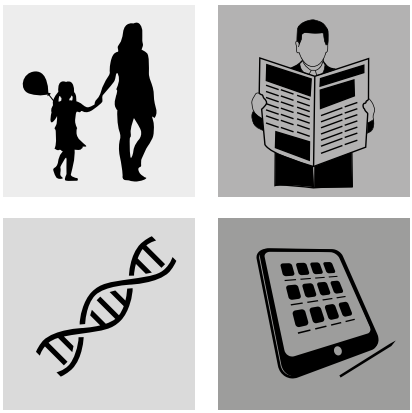


PCST 2016

Public Communication of Science and Technology

April 26-28, 2016 / Istanbul - Turkey

SUMMARY



PCST 2016

Public Communication of Science and Technology

April 26-28, 2016 / Istanbul - Turkey

On behalf of the Scientific Committee of the PCST Network I welcome you to the 14th International Public Communication of Science and Technology conference.

This is the most important global gathering of people working in, and working on, science communication. It has a history going back nearly thirty years and it has taken place in all the continents.

This conference brings together explainers, publicists, educators, researchers, programme managers and many others. We bring many different perspectives to a shared interest in how we talk about science and technology in wider society.

Our discussions in these conferences have often been – and will continue to be – about borders and bridges, gaps and crossings, generally between communities and professional cultures.

Here in Istanbul, we find ourselves at the borders and crossings of continents and philosophies, of Europe and Asia, of the Christian and Islamic worlds.

This city and this country have historically been a source of scientific ideas, preceding modern western science, and a meeting-ground of secularist and theocratic ideas.

Now Turkey is at the centre of a tragic refugee crisis, a place for masses crossing – as they hope – from conflict to peace, from repression to refuge.

These tensions have worked out in recent times in ways that have been challenging for the Turkish people. The political and physical conflicts have also presented dilemmas for those visiting Turkey.

In these contexts, we warmly congratulate our Turkish colleagues for making this conference possible and we salute those who have come from over forty countries to be with us for these few days.

Our heightened awareness of how special this gathering is should add to the intensity of our exchanges and to the insights we gain.

Over these days we will hear how comedy, dance, music and chat play roles in science communication. In the face of obscurantism and tragedy, we need to keep our good humour and our sense of solidarity.

Brian Trench
President, PCST Network

A very warm welcome to the 14th International Public Communication of Science and Technology conference. I hope this will be a major professional highlight for all of us.

The preparation of the conference began more than 2 years ago. We received around 400 submissions. After a review process, we now have 133 Papers, 23 Panels, 9 Workshops, 4 Performances, 52 Posters with 15 invited speakers and discussants. With on-site registration we are expecting around 350 participants.

We are also delighted to announce four workshops for early-career researchers and practitioners as part of the programme for the PCST 2016 conference. The workshops will take place on Monday 25 April 2016, the day before the conference formally starts. They are open, free of charge, to participants who have registered for the conference. These workshops have fully booked in a very short period of time.

The science communication community in Turkey has been growing fast in the past several years. Organizing the 14th PCST Conference in Istanbul brings a fresh enthusiasm to the new and young generation of researchers and practitioners in the region.

Spanning Europe and Asia, it can be said that Turkey has been the meeting place of many peoples and cultures throughout the centuries. Having colleagues from over 40 countries in Istanbul at this conference has the potential to show you our way of mutual understanding, respect and cooperation that is also much needed in today's world.

The PCST 2016 conference will be a success with your insights and inputs for the benefit of all conference participants and for science communication around the world. We look forward to these valuable interactions and experiences, developing partnerships and significant outcomes of this conference.

On behalf of the Local Organizing Committee of the PCST Conference, I would like to thank everyone who has contributed this conference in different capacities and wish all participants a wonderful, rewarding and successful conference.

Gultekin Cakmakci
Co-chair of the PCST 2016 Conference
Hacettepe University, Turkey

Local Organizing Committee & Advisory Board Members

Gultekin Cakmakci, *Hacettepe University (Chair)*
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Mustafa Hilmi Colakoglu, *Turkish Ministry of National Education (MEB)*
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Bulent Cavas, *President-elect, ICASE (International Council of Associations for Science Education)*
Mehmet Ardic, *Feza Gursey Science Centre*
Hamide Ertepinar, *Istanbul Aydin University & European Children's University Network*
Ciler Dursun, *Ankara University, Faculty of Communication*
Mine Gencel Bek, *MIT Comparative Media Studies & Ankara University, Faculty of Communication*
Irem Dikmen Toker, *METU Science and Technology Museum, METU Science and Society Centre*
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Omer Balibey, *Turkish Ministry of National Education (MEB)*
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PCST2016 Program Committee

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PCST Scientific Committee

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Manoj Patairiya – *Asia, Australasia*
Hans Peter Peters – *Europe*
Andrew Pleasant – *Africa and the Americas*
Michelle Riedlinger – *Africa and the Americas*
Jan Riise – *Europe*
Dietram Scheufele – *Africa and the Americas*
Bernard Schiele – *Africa and the Americas*
Masataka Watanabe – *Asia, Australasia*

Bruce Lewenstein, Cornell University, USA

Bruce Lewenstein is a professor of science communication at Cornell University. He is currently serving as chair of the Department of Science & Technology Studies. He is also a full member of the Department of Communication. Since 2014, he has been the Speaker of Cornell's University Faculty Senate.

His projects—whether teaching, research, or public outreach—all involve public communication of science and technology (PCST), also known as "public understanding of science," "popularization of science," "popular science," "vulgarisation" [in French], "divulgacion" [in Spanish], "culture scientifique" [French again], "apropiacion social" [Spanish again], "scientific temper" [written into the Indian constitution], etc. In general, he tries to document to the ways that public communication of science is fundamental to the process of producing reliable knowledge about the natural world.

Joan Leach, Director of Centre for the Public Awareness of Science at the Australian National University in Canberra, Australia

Joan Leach (BA hons, BSc, MA, PhD) convenes the Science Communication Program at the University of Queensland and lectures in communication and rhetoric in the School of Communication and Arts. Her research centers on public engagement with science, medicine and technology and she has been active in the Australian government's recent initiatives toward "Inspiring Australia."

She is currently researching the role of popular science in the globalization of science since the 1960s, a project funded by the Australian Research Council. She has published extensively about science communication, including a 2012 book Rhetorical Questions of Health and Medicine, and was editor of the International journal, Social Epistemology from 1997-2010 and is now an executive editor at the journal. She held academic posts at the University of Pittsburgh (USA) and Imperial College London before moving to Brisbane in 2005. Joan has won numerous academic awards for her research and community engagement, including being a Science Journalism Laureate at Purdue University (USA). While remaining tansfixed by science, she advocates for better science communication which critically examines the social impacts of science, technology and biomedicine.

Stephan Russ-Mohl, Università della Svizzera italiana, Switzerland

Stephan Russ-Mohl is full Professor of Journalism and Media Management at the Faculty of Communication Sciences, Università della Svizzera italiana, Lugano and Director of the European Journalism Observatory (www.ejo.ch).

Born in 1950, in Frankfurt/Main, Germany, he studied Public Administration/Public Policy at the University of Konstanz and at Princeton University and completed his professional training in Journalism at the Deutsche Journalistenschule (German School of Journalism), Munich. He was Professor of Journalism and Media Management at the Institut für Publizistik und Kommunikationswissenschaften, Freie Universität Berlin from 1985 to 2001. He was a Visiting Fellow at the University of Wisconsin (Madison) in 1989, at the European University Institute (Florence) in 1992 and at the Department of Communication, Stanford University in 1995, 1999 and 2008. He was Gutenberg Fellow at the Research Focus Media Convergence of the University of Mainz 2011/2012.

Ciler Dursun, Ankara University, Turkey

Çiler Dursun is a professor and chair at Ankara University Faculty of Communication Department of Journalism. She studies on science communication, science journalism and gender and science for the last decade. Prof. Dursun has coordinated two national research projects funded by the Scientific and Technological Research Council of Turkey (TUBITAK) between 2008-2013 on science communication in Turkey. These are the leading researches in this field and two researches have overall mapped the content producing of media, audience receptions and production process of science news in Turkey.

She is also scientific coordinator of Ankara University for a gender and science research of EU FP7 funded Project GENOVATE (ww.genovate.eu) between 2013- 2016. Her recent interests are focused mainly on science and technology journalism, gender and science, media sociology and new media and self issues. She teaches Science Journalism courses at graduate programs of Ankara University and training national- local journalists for science journalism.

Owen Gaffney, Stockholm Resilience Centre, Sweden

Owen Gaffney is a writer. He is director of international media and strategy at the Stockholm Resilience Centre and director of communications for Future Earth, based at the Royal Swedish Academy of Sciences. The Stockholm Resilience Centre is a world-leading centre for resilience research. Future Earth coordinates global sustainability science internationally.

For a decade, Owen has worked in Earth system science communication as a writer, policy advisor and speaker. His work focuses on understanding, communicating and visualizing humanity's impact on the planet through concepts such as the Anthropocene and planetary boundaries. His writing has appeared in the New York Times, the BBC and the academic journals Science and Nature. His visualisations with Felix Pharand Deschenes have been shown at the UN Rio+20 Summit and the World Economic Forum, Davos.

Dietram Scheufele, The University of Wisconsin–Madison, USA

Dietram A. Scheufele is a communication scholar and holds the the John E. Ross Chair in Science Communication in the Department of Life Sciences Communication at the University of Wisconsin–Madison. He also has affiliated appointments in the Robert and Jean Holtz Center for Science and Technology Studies, the Communication Technologies Research Cluster, and the UW Center for European Studies. Prior to joining UW, Scheufele was a tenured faculty member and Director of Graduate Studies in the Department of Communication at Cornell University.

He has published extensively in the areas of public opinion and political communication, including work on framing theory, participatory democracy and the spiral of silence. His more recent work deals with science communication and public attitudes toward emerging technologies, especially in the area of nanotechnology. Scheufele's most-cited article, Framing as a theory of media effects, was published in 1999 in Journal of Communication and – with over 700 citations– is one of the most frequently cited articles in Journal of Communication since it was written. Scheufele is recipient of the Robert M. Worcester Award for best article of the year from the World Association for Public Opinion Research, the Young Scholar Award for outstanding early career research from the International Communication Association, the Hillier Krieghbaum Under-40 Award for outstanding achievement in teaching, research and public service from the Association for Education in Journalism and Mass Communication, the Pound Research Award from the University of Wisconsin–Madison College of Agricultural and Life Sciences, and the Young Faculty Teaching Excellence Award from the Cornell University College of Agriculture and Life Sciences.

Plenary session # 1 / *Ball Room*

Chair: Gultekin Cakmakci
Welcome talks (Mustafa Hilmi Colakoglu, Celal Bayrak, Ahmet Uludag)
Presidential address (Brian Trench)

Laughing About Science (Joan Leach)

Humour "changes the situation, tells us something about who we are and the sort of place we live in, and perhaps indicates to us how it might be changed" (Critchley, 2002). Humour, then, would seem to be very 'at home' with science (change 'humour' in the first sentence with 'science' and it still very much makes sense). The interest in humour and science, then, is fitting and perhaps it is no surprise that science humour—in comedy live events, online, in comics, and pasted on office doors—is now specifically examined in terms of science communication. This paper makes three arguments. First, I argue that science and humour have long been rhetorical bedfellows and remind us of that history. Second, I want to validate multiple facets of the emerging debate about the role of humour—does it inform or entertain, is it critical of science or reinforcing? Finally, I'd like to take contemporary interest in humour and science as a positive turn in science communication toward the confounding genres used in making cultural sense of science.

Plenary session # 2 / *Ball Room*

Chair: Michelle Riedlinger

Can we speak of Science Communication in Turkey? (Ciler Dursun)

Science communication is developed practical area especially in post-industrial societies that aimed at connecting lay people, decision making bodies and scientific communities via media and other supporting platforms and initiatives. Science communication practices are affected indirectly by the political culture of societies, directly by the conjonctural interests of international capital and institutional habitus of related actors such as media, scientific society and governments. Turkey is not among the countries which has a long history of development of science communication. However there has been an increasing interest on science communication practices by the actors such as popular science journals, decision making bodies, universities and media in time. In this presentation actors of science communication such as governments, local authorities, media, public and scientific society will be analysed according to their perspectives and effort in the process and according to the main periods of science communication in Turkey.

Science Communication as Political Communication (Dietram Scheufele)

It is easier than ever before to get information on any scientific topic with just a few keystrokes. At the same time, politically charged news environments on television and online have created a world that allows us to live in our own filter bubbles in which the same scientific information means very different things to different audiences. What are the effects of these new news environments on how we discuss and communicate issues like GMOs, germline editing, or synthetic biology? Why are we as citizens less and less equipped to debate controversial issues with each other in a civil fashion? And what are some possible solutions?

Plenary session # 3 / *Ball Room*

Chair: Jenni Metcalfe

Media Narratives and Influences in COP21 (Owen Gaffney)

After decades of intransigence and acrimony in climate policy, the Paris climate summit COP21 was a historic achievement. The summit attracted the world's media – over 3000 journalists. But this summit played out in a new media environment. Since the disastrous Copenhagen climate summit in 2015, social media has come to dominate, a new type of single-issue journalism has emerged, the way people consume news has moved from static to mobile devices and there are new media and new narratives playing out. How did this influence COP21 and how scientists communicate? And how did the United Nations handle the media pressure? This talk will provide an overview of the media and social media trends around COP21 and discuss key contributions from climate scientists in a very noisy media environment dominated by NGOs and politicians.

The Rise and Fall of Science Journalism (Stefan Russ-Mohl)

The keynote deals with fundamental changes of science communication with the public in an "attention economy". It focusses on the increasing impact of public relations/institutional communication replacing partially science journalism. It also applies economic theory and, in particular, insights from behavioral economics to science communication. Last not least, the question arises whether science communication and science journalism are more and more "victimized" and paralyzed by the spread of misinformation, conspiracy theories and nonsense in social networks.

Plenary session # 4 / *Ball Room*

Chair: Lloyd Davis, host of PCST 2018

Expertise, Democracy, and Science Communication

Members of the PCST community occupy multiple roles: journalists, educators, explainers, natural science researchers, science communication researchers. These different roles have different goals. For example, many journalists operate according to the norm "afflict the comfortable and comfort the afflicted"; educators may wish to provide instrumental knowledge; and natural scientists may want to foster appreciation of science and technology. The tension between scientific expertise and public participation emerges in different ways for each of these different groups. That is especially true in the context of "public engagement," which can mean either educational engagement or political engagement. The PCST community does not need to resolve these tensions. But each of us as practitioners and researchers needs to be reflective about our own goals, and especially our relationship to the tension between expertise and democracy.

Responses and discussion with Bruce, Tiffany Lohwater (AAAS Director of Public Engagement) and **Sarah Davies** (co-author, Beyond Deficit and Dialogue, 2016) and others

Workshop # 1: Science communication research

The workshop organisers: Maarten van der Sanden, Brian Trench
Date/Time: Monday, April 25: 9:00 to 12:00
Room: Topkapi

In this workshop we will review the current state of PhD research in science communication with Maarten van der Sanden (Netherlands) and Brian Trench (Ireland; PCST Network President), who have facilitated such workshops also at the 2012 and 2014 PCST conferences. Prof Massimiano Bucchi (Italy; PCST Science Committee) will lead a session on 'Researching Scientists' Public Communication', looking at the variety of attitudes and incentives across scientific communities.

Workshop # 2: Science communication practice

The workshop organisers: Paola Rodari & Rick Holliman
Date/Time: Monday, April 25: 13:15 to 16:15pm
Room: Madrid

There are two parts to this afternoon workshop: Paola Rodari (Italy) will review 'Current Practices and Challenges in Science Museums and Centres' – Paola has delivered many training courses in this area; later, Prof Rick Holliman (UK) will present an interactive session on 'Supporting Researchers in Public Engagement' – Rick is Professor of Engaged Research at the Open University.

Workshop # 3: The Role of Science Communication in promoting Responsible Research and Innovation

The workshop organisers: Rosina Malagrida & Steve Miller
Sponsored by: The RRI Tools project – www.rri-tools.eu
Date/Time: Monday, April 25: 13:15 to 17:15
Room: Topkapi

Science communication professionals now face many more demands on their skills than the straightforward ability to explain research clearly to lay audiences, policy makers and other stakeholders. In the European Union, in particular, funders are demanding that research is undertaken in a way that is socially responsible. Businesses are under increasing pressure to ensure that what they do and how they innovate is in line with the highest ethical standards. The notion of Responsible Research and Innovation (RRI) – now a key component of the European Commission's Horizon 2020 research programme – brings together many societally important agendas, and places demands on many stakeholder groups to be involved and to be sensitive to each other's requirements. This new paradigm calls science communication professional to collaborate with different stakeholders all through the research and innovation process, to evolve from public engagement to a publicly engaged R&I.

This workshop will explain what RRI is all about and deliver training exercises that highlight the key role that science communication and public engagement have to play in delivering it.

The workshop organisers:

Rosina Malagrida, head of the Unit on Public Engagement on Health Research at IrsiCaixa in Barcelona, where she coordinates the European educational portal Xplore Health & Leading member of the

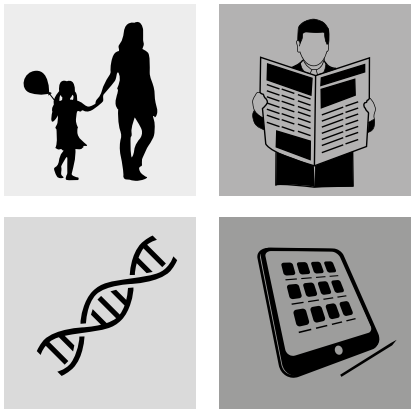
RRI Tools project.
Steve Miller, Professor of Science Communication and Planetary Science at University College London & Leading member of the RRI Tools project.

Workshop 4: Evaluation of science communication – Prof Eric Jensen (University of Warwick, UK)

The workshop organiser: Eric Jensen
Date/Time: Monday, April 25: 9:00 to 12:00
Room: Madrid

Prof Eric Jensen (University of Warwick, UK) is an author and trainer on the subject. His latest book to be published next month is Doing Real Research a practical guide to social research (SAGE). These are some open-access papers Eric has written recently about science communication evaluation: http://jcom.sissa.it/author/eric-jensen

Dr Eric Jensen, Fellow Higher Education Academy
Associate Professor (Senior Lecturer), Department of Sociology, University of Warwick
http://warwick.academia.edu/EricJensen



PCST 2016

Public Communication of Science and Technology

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SCIENTIFIC PROGRAM

PROGRAM AT A GLANCE

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<tr><th>Time</th><th colspan="3">Monday
(April 25)
Pre-conference event</th><th>Tuesday
(April 26)</th><th colspan="2">Wednesday
(April 27)</th><th>Thursday
(April 28)</th></tr>
<tr><td>08.00-09.00</td><td colspan="3">Registration for workshops
(for PhD students and junior scholars)</td><td>Registration</td><td colspan="2">Registration</td><td>Registration</td></tr>
<tr><td>09.00-10.15</td><td rowspan="3">Workshop # 1 Science communication research (09.00-12.00)</td><td colspan="2" rowspan="3">Workshop # 4 Evaluation of science communication (09.00-12.00)</td><td>Opening Ceremony & Plenary session # 1</td><td colspan="2">Plenary session # 2</td><td>Plenary session # 3</td></tr>
<tr><td>10.15-10.45</td><td colspan="2">Coffee Break</td><td>Coffee Break</td></tr>
<tr><td>10.45-12.00</td><td>Concurrent session # 1 (Papers, Panels, Workshops)*</td><td colspan="2">Concurrent session # 4</td><td>Concurrent session # 7</td></tr>
<tr><td>12.00-13.15</td><td colspan="3">Lunch</td><td>Lunch</td><td colspan="2">Lunch</td><td>Lunch</td></tr>
<tr><td>13.15-14.30</td><td rowspan="3">Workshop # 2 (Science communication practice)</td><td rowspan="3">Workshop # 3 (13.15-17.15) (Responsible Research And Innovation (RRI) Tools Workshop)</td><td rowspan="3">Registration</td><td>Concurrent session # 2</td><td colspan="2">Concurrent session # 5</td><td>Concurrent session # 8</td></tr>
<tr><td>14.30-15.00</td><td>Coffee Break</td><td colspan="2">Coffee Break</td><td>Coffee Break</td></tr>
<tr><td>15.00-16.15</td><td>Concurrent session # 3</td><td colspan="2">Concurrent session # 6</td><td>Concurrent session # 9</td></tr>
<tr><td>16.30-17.45</td><td colspan="3" rowspan="2">Free time</td><td>Poster session # 1</td><td>Performances & Videos</td><td>PCST Annual General Meeting</td><td>Plenary session # 4 & Closing Ceremony</td></tr>
<tr><td>19.00-21.00</td><td>Welcome Reception, Bosphorus Sightseeing Cruise Tour</td><td colspan="2">Social Program (optional): Gala Dinner</td><td></td></tr>
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* Concurrent sessions include oral papers, panels, symposiums and workshops

** PCST Scientific Committee meeting will be held at "Valencia room" on April 25, 2016 (15.00-19.00) and the second meeting will be held on April 29, 2016 (09.00-13.00).

***Welcome Reception and Gala Dinner, e.g. coaches will leave from conference hotel at 5:45pm

Tuesday, 26 April 2016

Concurrent sessions

10:45 am – 12:00 noon

Digital age - Room:Sevilla

Chair: Sarah Davies

- [Paper] **Daniela Orr**: Knowledge deficit or public engagement? Conceptualizing Polio Vaccination debates on Facebook
- [Paper] **Ildeu Moreira**: The experience of using Facebook in PCST events in Brazil: Rio + 20 and IYL 2015
- [Paper] **Gustav Bohlin**: Evolving germs - Communicating evolution through animations ofantibiotic resistance

Ethics and arts - Room: Valencia

Chair: Andrew Pleasant

- [Paper] **Constantinos Morfakis**: "Doctor Atomic: Science Communication in Modern Opera"
- [Paper] **Ana Mena**: Morphogenesis of a project towards better science communication
- [Paper] **Kanta Dihal**: 'If You Can't Explain It to a Six-Year-Old…': Communicating Quantum Physics to Children

Publics - Room: Mallorca

Chair: Dietram Scheufele

- [Paper] **Ciler Dursun**: Reception Practices of Turkish Newspaper Readers on Science, Technology and Innovation News in Turkey
- [Paper] **Enrico Balli**: Mitigating school dropout with science
- [Paper] **Tânia Costa**: Between Fantasy And Realıty: Early Chıldhoold's Conceptıons About The Antarctıc Contınent
- [Paper] **Carmelo Polino**: public attitudes towards biotechnology in Argentina

Publics - Room: Madrid

- [Panel] **Chiara Ceci**, Martin W Bauer: The chemistry of public perception

Scientists in PCST - Room: Truva

Chair: Luisa Massarani

- [Paper] **Lloyd Davis**: University Outreach as a means of Science Communication: evaluating its effectiveness
- [Paper] **Achintya Rao**: Attitudes towards outreach within the particle-physics research community
- [Paper] **Mircea Sava**: Scientists Performing Online.TED Talks as a Means of Engaging the Public with Fundamental Physics
- [Paper] **Bernhard Goodwin**: Out of the Woods: How Do (Forest) Scientists Perceive Science Communication

Tuesday, 26 April 2016

Concurrent sessions

Trends and policies - Room**:** Efes

- [Workshop] **Alexander Gerber**, Ulrike Langer, Deborah Blum: Becoming a product-placement: science communicators, learn to communicate on your own behalf!

Trends and policies - Room: Assos

- [Panel] **Maarten van der Sanden**, Emma Weitkamp, Charlotte Autzen, Brian Trench: PhD-research as a marker of science communication's development

Trends and policies - Room: Kapadokya

Chair: Bernard Schiele

- [Paper] **Ayelet Baram-Tsabari**: What are we trying to teach? A conceptually based approach to science communication training
- [Paper] **Anne Land-Zandstra**: Linking theory and practice through student research in informal learning environments
- [Paper] **Hans Peter Peters**: 'Popularization of research' and 'provision of scientific expertise': consequences of two modes of public communication for the interactions of scientists and journalists

1:15 pm – 2:30 pm

Ethics and arts - Room: Sevilla

Chair: Michelle Riedlinger

- [Paper] **Britt Wray**: Science communication and performativity: how are we talking about synthetic biology?
- [Paper] **Hedwig te Molder**: All but naive. On the importance of articulating hidden moralities in public discussions on science
- [Paper] **Dominique Brossard**: Scientists joking on social media: An empirical analysis of #overlyhonestmethods
- [Paper] **Guoyan Wang**: Practice and quantitative study on visualization of cutting-edge science

Publics - Room: Mallorca

- [Workshop] **Eric Jensen**: Using Surveys in Science Communication Evaluation: A Very Brief Introduction to the State of the Art

Digital age - Room: Valencia

Chair: Richard Holliman

- [Paper] **Emilia Hermelinda Lopera Pareja**: Beyond the news content: Exploring the relationship between online sources of information and perception of CAM therapies among digital natives in Spain
- [Paper] **Germana Barata**: Science communication impact on journals visibility in Brazil
- [Paper] **Cátia Rodrigues Barbosa**: Scientific communication in different contexts and media

- [Paper] **Achintya Rao**: Footprints of Fascination: Digital Traces of Public Engagement with Particle Physics on Social Media

Media practices - Room: Truva

- [Workshop] **Rony Armon**: How the science-media gap is managed in practice? The use of news interviews in science communication trainings

Publics - Room: Efes

Chair: Brian Trench

- [Paper] **Sara Yeo**: Credibility and climate change: Perceived credibility of policy and science experts in visual media
- [Paper] **Friederike Hendriks**: Laypeople's inferences about a science blogger's trustworthiness: two experimental studies
- [Paper] **Liezel Gouws**: Building trust and countering misinformation through science communication
- [Paper] **Sema Becerikli,** Ciler Dursun: Perception and Practices of Turkish Journalists on Science, Technology and Innovation News

Scientists in PCST - Room: Madrid

- [Panel] **Emma Weitkamp**, Rebecca BruuCarver, Charlotte Autzen, Jamie Dorey: Research press offices as hubs of science communication: envisioning future roles

Scientists in PCST - Room: Assos

Chair: Toss Gascoigne

- [Paper] **Marta Entradas**: Mobilisation for Public Engagement: Benchmarking the Practices of Research Institutes in different scientific areas
- [Paper] **Kathryn OHara**: Scientists as social change agents? Tweeting science issues into the Canadian election of 2015.
- [Paper] **Kristian H. Nielsen**: Revisiting the web model of science communication: how to deal with information instability, diversity and controversy
- [Paper] **Jenni Metcalfe**: Climate champion farmers: integrating deficit, dialogue and participative science engagement

Trends and policies - Room: Kapadokya

- [Panel] **Frans van Dam**, Anne Dijkstra, Liesbeth de Bakker, Lloyd Spencer Davis: Providing a knowledge base for a science communication curriculum

Tuesday, 26 April 2016

Concurrent sessions

3:00 pm – 4:15 pm

Digital age - Room: Mallorca

- [Workshop] **Satu Lipponen**, Alexander Gerber, Wolfgang Goede: Networking over digital divide

Ethics and arts - Room: Sevilla

Chair: Lloyd Davis

- [Paper] **Oriol Marimon**: BigVan- scientists on the road. Participatory science education approaches based on performing arts.
- [Paper] **Robert Inglis**: Hip Hop Health – Research, Rhythm and Rhyme for Healthy Communities
- [Paper] **Ann Grand**: "It's all so very normal": visitors' experiences of engaging with science at an arts festival

Media practices - Room: Madrid

- [Panel] **Luisa Massarani**, Marina Joubert, Deborah Blum, Richard Holliman: Gender and science coverage: Does it really matter?

Participation - Room: Valencia

- [Panel] **Claudia Goepel**, Simone Roedder, Bruce V. Lewenstein: Citizen Science in a Global Perspective

Publics - Room: Truva

Chair: Toss Gascoigne

- [Paper] **Erez Garty**: Science communications for the real general public
- [Paper] **Joseph Roche**: The many failures of modern science shows
- [Paper] **Toss Gascoigne**: How much science does a citizen need to know?
- [Paper] **Huiping Chu**: A study on visitors' identity-related motivations at science museums in China

Scientists in PCST - Room: Efes

Chair: Sook-Kyoung Cho

- [Paper] **Noa Reis**: Scientists' attitudes in consolidated and fragile science communication cultures
- [Paper] **Charlotte Autzen**: Five ways to sell the tsetse fly: How both science and institutions are sold in press releases
- [Paper] **Corinna Lüthje**: Social science communication policies, social scientists' communication strategies, and crises journalism
- [Paper] **Rony Armon**: Crossing the boundary while sustain the borderline: The story-worlds of scientific experts

Tuesday, 26 April 2016

Concurrent sessions

Trends and policies - Room: Assos

- [Paper] **Sofía Otero**: Science communication, the Chilean way
- [Paper] **Marlit Hayslett**: The Structure of Scientific Communication
- [Paper] **Semati Rodríguez**: Social disciplines and science communication studies
- [Paper] **Anwesha Chakraborty**: Changing perspectives in Indian science museum movement: the early years post independence

Wednesday, 27 April 2016

Concurrent sessions

10:45 am – 12:00 noon

Digital age - Room: Sevilla

Chair: Xuan Liu

- [Paper] **Michael Gastrow**: Science and the social media in an African context: the case of the Square Kilometre Array telescope
- [Paper] **Ines Domingues**: Research institutions and social media: Channels for engaging the public and scientists
- [Paper] **Saowanee Chinnalong**: Einstein: a challenge to Thai science communication?
- [Paper] **Jan Dook**: Informing the community about a native fauna threat: cane toad app

Digital age - Room: Madrid

- [Panel] **Juliana Botelho**, Adlane Vilas-Boas, Jennifer Metcalfe, Alicianne Gonçalves, Hauke Riesch, Jonathan Mendel: Are science blogs facing extinction?

Ethics and arts - Room: Mallorca

- [Panel] **Mary Chambers**, Gill Black, Alun Davis, Joanna Wheeler: Ethical considerations of using community-led media in engagement around biomedical research

Participation - Room: Kapadokya

- [Workshop] **Ronella Grootens-Wiegers**, Van Beusekom MM: Visual health information: participatory design with vulnerable target groups

Publics - Room: Truva

Chair: Sarah Davies

- [Paper] **Clare Wilkinson**: "I mean I left school at fourteen dear so I've never, you know, I'm not very well educated": Public Identities and Engagement
- [Paper] **Rebecca Carver**: Exploring the relationship between public knowledge and attitudes about genomics
- [Paper] **Cecilia Montero de Jesus**: NOÓSFERA: a science communication proposal for basic education level in Veracruz, Mexico.
- [Paper] **Andrew Pleasant**: Creating a scientific evidence-based integrative health program to successfully reach teenagers and their families in low-income communities

Scientists in PCST - Room: Efes

Chair: Hans Peter Peters

- [Paper] **Sevinc Gelmez Burakgazi**: Scientists` Views of Science Communication in Turkey
- [Paper] **Arko Olesk**: What makes a mediatized scientist?
- [Paper] **Cem Güzeloğlu**: "Scientist" From The Academician's Point of View: Perceptions, Images And Media
- [Paper] **Antoni Bennàssar-Roig**: Development of communication skills by editing a popular science magazine: The case of Naturalment

Wednesday, 27 April 2016

Concurrent sessions

Scientists in PCST - Room: Assos

- [Workshop] **Matteo Merzagora**: Blurring the frontiers between scientific research and science communication

Trends and policies - Room: Valencia

- [Panel] **Alexander Gerber**, Pádraig Murphy, Marina Joubert: Training the next generation of science communicators

1:15 pm – 2:30 pm

Digital age - Room: Sevilla

Chair: Lars Guenther

- [Paper] **Yin-Yueh Lo**: Blogging by scientists: a rare and peripheral activity
- [Paper] **Clementina Equihua**: Twitter: a useful tool to communicate science in University research centers
- [Paper] **Finarya Legoh**: Science Blog Competition to Encourage Young Students to Do Science Communication
- [Paper] **Fionnuala Murphy**: Micro-Blogging Science: An analysis of the @RealScientists twitter account

Ethics and arts - Room: Madrid

- [Panel] **Cristina Olivotto**, Oriol Marimon, Matteo Merzagora, Cristina Olivotto, Jen Wong: Spectacular science: a reflection about limits and opportunities

Media practices - Room: Kapadokya

- [Panel] **Petra Pansegrau**, Ahmet Suerdem, Martin W. Bauer, Federico Neresini: Framing and mapping science news in the long run (1990 - 2015)

Participation - Room: Assos

- [Workshop] **Balint BALAZS**, Atta Badii, Fernando Ferri, Tommaso Castellani, Franco Bagnoli, Balint Balazs, Patrizia Grifoni, Adriana Valente, Ovidiu Serban, Davide D'Orazio: Science cafe in a digital age

Participation - Room: Truva

Chair: Luisa Massarani

- [Paper] **Michelle Riedlinger**: Social representations of science at the commission hearings into the decline of sockeye salmon in British Columbia, Canada: Relying on good science or indulging in speculation?
- [Paper] **Angela Cassidy**: Building a public controversy: advocacy, media and politics in UK debates over bovine TB since 1971
- [Paper] **Padraig Murphy**: ANT with a bite?: debate, rhetoric and science conflict communication

Wednesday, 27 April 2016

Concurrent sessions

Publics - Room: Efes

Chair: Sedat Ucar

- [Paper] **Michael Ellis**: A second South African public perceptions survey on attitudes towards biotechnology
- [Paper] **Erika Szymanski**: Making "not the deficit model" specific: Rhetorical analysis to evaluate and design texts for research-industry collaboration
- [Paper] **Eric Jensen**: Critical Review of the UK's "Gold Standard" Survey of Public Attitudes to Science

Scientists in PCST - Room: Mallorca

- [Panel] **Marina Joubert**, Anusuya Chinsamy-Turan, Shirona Patel, Anthony Lelliott: Bringing ancient stories to life: Dinosaurs are cool, but no hominids please?

Scientists in PCST - Room: Barcelona

Chair: Jenni Metcalfe

- [Paper] **Paola Rodari**: Scientists involved in science communication activities: motivations, enablers and barriers
- [Paper] **Santiago Nicolas Canete**: University Researchers and Public Communication: What Influences their Intention to Engage with Non-Experts
- [Paper] **Richard Holliman**: An open research university

Trends and policies - Room: Valencia

- [Panel] **Sarah Davies**, Maja Horst, Ulrike Felt, Alan Irwin, Brian Trench: What's missing in science communication? New perspectives for practice and research

3:00 pm – 4:15 pm

Digital age - Room: Madrid

- [Panel] **Mohammed Yahia**, Alexis Gambis, Alyaa Gad: The digital age of science in the Middle East

Digital age - Room: Kapadokya

- [Workshop] **Marina Joubert**, Anne Grand and Elizabeth Stevenson: Digital Developments: Online science communication courses for training, professional development and life-long learning

Ethics and arts - Room: Assos

- [Workshop] **Wolfgang Chr. Goede**, Maren Schuepphaus, Satu Lipponen, Marc Denis Weitze, Jens Degett, Viola Egikova, Dino Trescher : How to Make Your Audience's Neurons ROCK!

Wednesday, 27 April 2016

Concurrent sessions

Participation and ***Publics*** - Room: Barcelona

Chair: Dietram Scheufele

- [Paper] **Steven Flipse**: Future Interactions: a serious board game for future technology assessment
- [Paper] **Luz Helena Oviedo**: Science communication for biodiversity conservation--Useful guidelines
- [Paper] **Esa Väliverronen**: Expanding expertise and public debates on health and nutrition
- [Paper] **Marjoleine Georgette van der Meij**: The Opinion Lab; prototyping science exhibits for next generation science communication

Participation - Room: Truva

- [Panel] **Bernard Schiele**, Hester du Plessis, Joëlle Le Marec, Martin Bauer: Participation and Democracy

Scientists in PCST - Room: Valencia

Chair: Sook-Kyoung Cho

- [Paper] **Adlane Vilas-Boas**: I don´t call myself a scientist: Understanding why self-denomination as "scientist" is avoided by university professors.
- [Paper] **Gareth Davies**: Collecting evidence from research-informed practices: the case of Floodplain Meadows
- [Paper] **Pedro Russo**: A Blueprint for Assessing Societal Impact Through Public Engagement
- [Paper] **Marta Condesso**: Newton liked to read: communicationg science while reading

Ethics and arts - Room: Mallorca

- [Panel] **Hauke Riesch**, Bruno Pinto, Matteo Merzagora, Rebekah Higgitt, Joan Leach: Humour in Science Communication

4:30 pm – 5:45 pm

Room: Kapadokya

- [Performance] **Federica Manzoli**: Jack is late. Air pollution and health at a bus stop

Room: Assos

- [Performance] **Patricia Magana**: Three decades of science communication in Mexico: a Professional Network called Somedicyt

Room: Efes

- [Performance] **Oriol Marimon:** BigVan: Scientists on the road (1' 30")

4:30 pm – 5:45 pm

Ball Room

- **PCST ANNUAL MEETING**

Thursday, 28 April 2016

Concurrent sessions

10:45 am – 12:00 noon

Digital age - Room: Sevilla

Chair: Dominique Brossard

- [Paper] **Doris Asakly**: Characteristics of an authentic scientific discourse in social networks: The case of drinking water fluoridation
- [Paper] **Bienvenido Leon**: Science and technology as a popular participatory content. A study of the "Popular on Youtube" channel
- [Paper] **Lucia Martinelli**: The discourse of medical science in the WEB: the narrative of assisted reproduction technologies (ARTs)

Ethics and arts - Room: Mallorca

- [Workshop] **Kenneth Skeldon**, Prof. Alexander Gerber (Germany), Dr Heather Doran (UK), Shadrack Mkansi (South Africa): What do YOU think makes for responsible science and its communication?

Ethics and arts - Room: Aspendos

Chair: Andrew Pleasant

- [Paper] **Fabien Medvecky**: Science communication and epistemic justice.
- [Paper] **Jesse Bering**: Scientists Behaving Badly
- [Paper] **Marzia Mazzonetto**: Responsible Research and Innovation (RRI): what role for public engagement institutions?

Media practices - Room: Valencia

Chair: Erkan Yuksel

- [Paper] **Yael Barel-Ben David**: Consolidated vs. fragile science communication culture: a comparison of science coverage of the BBC and Israeli media
- [Paper] **Lars Guenther**: Scientific Evidence and the Media: Investigating the Journalistic Intention to Represent Scientific Uncertainty.
- [Paper] **Markus Lehmkuhl**: Dealing with Uncertainty in the Reporting on Neuroscience: a Study of Journalistic Decision-making
- [Paper] **Alexandre Schiele**: Pseudo/science communication in mass media

Participation - Room: Barcelona

Chair: Jenni Metcalfe

- [Paper] **Federica Manzoli**: GIOCONDA: involving the youth in environmental and health policies
- [Paper] **Lotta Tomasson**: Mass experiments in Swedish schools – encouraging scientific citizenship in future generations
- [Paper] **Alexandra Schebesta**: Research competence and scientific literacy in a digital age

Thursday, 28 April 2016

Concurrent sessions

Scientists in PCST - Room: Efes

- [Panel] **Shane McCracken**, Tristan MacLean, Alun Davis: Online engagement across five continents. How does I'm a Scientist compare and contrast around the world?

Publics - Room: Assos

Chair: Betul Hekimoglu Balkan

- [Paper] **Maria Lindholm**: Public confidence in science - what does it mean?
- [Paper] **Anthony Lelliott**: Visitors to the 'Cradle of Humankind', South Africa: motivations and 'take home messages'
- [Paper] **Anne M. Dijkstra**: Participation and dialogue in Dutch Science Cafés. Perspectives from participants and organisers
- [Paper] **Bernardo Jefferson Oliveira**: Sense of birth: A itinerant interactive exhibition for social engagement and public health changing.

Publics - Room: Truva

- [Panel] **Martin Bauer**, Ahmet Suerdem (Bilgi University); Rajesh Shukla (Delhi); Li Yuh-Yuh Luke (Taiwan): Attitudes to science EAST and WEST – structures and changes in the long run

Trends and policies - Room: Kapadokya

- [Workshop] **Tiffany Lohwater**, John Besley, Michigan State University: Practical Considerations: Research Informing Practice in Public Engagement (and vice versa)

Trends and policies - Room: Madrid

- [Panel] **Brian Trench**, Declan Fahy, Alan Irwin, Michelle Riedlinger: Science criticism - what is it, and why do we need it?

12:30 pm – 1:00 pm

Room: Valencia

- [Performance] **Toss Gascoigne**: The Two Cultures, and science communication

1:15 pm – 2:30 pm

Digital age - Room: Assos

Chair: Xuan Lin

- [Paper] **Adan Lerma**: Questioning the cyber-utopia: Skepticism in Digital Social Networks
- [Paper] **Boulila Mustapha**: Pcst In The Arab World: The Rationality War Online
- [Paper] **Arnon Hershkovitz**: Social Variables and Credibility Assessment of Scientific Content on Social Networking Sites
- [Paper] **Petra Nieckchen**: Singing from the same sheet – Social networks for fusion communication

Thursday, 28 April 2016

Concurrent sessions

Media practices - Room: Efes

Chair: Hans Peter Peters

- [Paper] **Julia Serong**: Evaluating health news in a digital world. Quality assessment in science journalism and science communication.
- [Paper] **Bankole Falade**: Evaluating public communication of science and technology: The case of the Ebola virus
- [Paper] **Declan Fahy**: Knowledge-based reporting of global infectious diseases: The pioneering journalism of Laurie Garrett
- [Paper] **Evgeniya Boklage**: Dealing with scientific uncertainty: coverage of antibiotic resistance in the German press 1993-2013

Participation - Room: Kapadokya

- [Workshop] **Andrew Pleasant**, Richard Carmona: Theater for Health: Using the arts to deliver science to low-income communities

Participation - Room: Valencia

Chair: Brian Trench

- [Paper] **Núria Saladie**: How to tackle stakeholders' lack of participation in public engagement activities
- [Paper] **Hester du Plessis**: The changing role of Public Participation in Science Communication
- [Paper] **Marc-Denis Weitze**: Artificial Photosynthesis – Developing Technology Futures

Publics - Room: Truva

Chair: Padraig Murphy

- [Paper] **Erkan Yüksel**: What Do People Do with the Health Content of the Media?
- [Paper] **Mara van Beusekom**: Medical pictograms for low-literate patients: transparency and translucency
- [Paper] **Sheryl Hamilton**: Hands as Media of Contamination: Reading Public Health Handwashing Posters
- [Paper] **Ronella Grootens-Wiegers**: Understanding minors as a target group in health communication: the neuroscience of adolescence and implications for medical decision-making

Scientists in PCST - Room: Madrid

- [Panel] **Tiffany Lohwater,** Director of Meetings, AAAS, Kevin Burchell, University of Westminster, John Besley, Michigan State University, Rosalba Namihira, Universidad Nacional Autonoma de Mexico: International Trends in Researchers› Participation In and Attitudes Towards Public Engagement

Trends and policies - Room: Sevilla

Chair: Toss Gascoigne

- [Paper] **Jorge Padilla**: Diagnosis Of The Public Communication Of Science And Technology In Mexico: A Method

Thursday, 28 April 2016

Concurrent sessions

- [Paper] **Miguel Garcia-Guerrero**: Strategies for the public communication of nanotechnologies: a three country comparative study
- [Paper] **Jawhar Cholakkathodi**: Mapping the Shift from Public Understanding of Science to Public Engagement with Science"; the case of Kerala Sasthra Sashithya Parishath.
- [Paper] **Jelle Maas**: Science from one-way to two-way communication

Trends and policies* + *Ethics and Arts - Room: Barcelona

Chair: Manoj Patariya

- [Paper] **Wiebke Finkler**: Using SciCommercials to Save the Whales: lessons from social marketing for better science communication
- [Paper] **Elaine Reynoso-Haynes**: Different Approaches to Public Communication of Science
- [Paper] **Luisa Massarani**: Science in Brazilian popular literature
- [Paper] **Maria Eugenia Fazio**, Carolina Moreno Castro: The narratives in science communication

Trends and policies - Room: Mallorca

- [Workshop] **Maarten van der Sanden**, Steven M. Flipse, Caroline Wehrmann: Design for practice: combine theoretical and intuitive thinking in science communication practice

3:00 pm – 4:15 pm

Digital age - Room: Kapadokya

- [Workshop] **Trevor Collins**, Heather Doran, Jamie Dorey, Ann Grand, Kenneth Skeldon: Appropriating social media – public engagement with science and technology online

Ethics and arts - Room: Assos

- [Workshop] **Frank Kupper**, Marjoleine van der Meij: Discover your views in the Frame Reflection Lab

Media practices - Room: Valencia

Chair: Declan Fahy

- [Paper] **Gunver Vestergaard**: Science Coverage in Popular and Elite Newspapers
- [Paper] **Cheng Xi**: Cover image of Science: research on 56 years history of development
- [Paper] **Ivonne Lujano-Vilchis**: Evaluating Mexican Scientific Magazines in the Digital Age

Trends and policies - Room: Barcelona

Chair: Jeni Metcalfe

- [Paper] **Maria Lindholm**: How to influence Horizon 2020 SwafS work programme - the Swedish advocacy platform
- [Paper] **Manoj Kumar Patairiya**: Leadership patterns in science communication: Significance of 'domain area leadership'

- [Paper] **Cristina Rueda**: The Colombian Annual Report on the Status and Trends of Biodiversity: Science Communication Innovations to Influence Environmental Management
- [Paper] **Andrew Pleasant**: CRI PRIMES: Learn how to apply a proven model to fund and create meaningful scientific-based partnerships that accomplish public good

Participation - Room: Madrid

- [Panel] **Chris Gary**, Paola Rodari (SISSA Medialab, Italy), Débora d'Ávila Reis (Universidade Federal de Minas Gerais, Brazil), Chris Gary (European Children's Universities Network EUCU.NET, Austria):Children's Universities: The evolution of this successful model for promoting children's participation in the dialogue between science and society

Publics - Room: Sevilla

Chair:

- [Paper] **Sophie Shauli**: Interactions between science knowledge and advocacy skills among parents of hearing- impaired children
- [Paper] **Carolina Moreno Castro**: Comparative study of the frequency of use of natural therapies among the Spanish population and their public image on digital media
- [Paper] **Bernhard Goodwin**: The influence of environmental perception and media coverage upon risk perception and pro-environmental engagement - a case study by the horse chestnut leafminer

Participation - Room: Mallorca

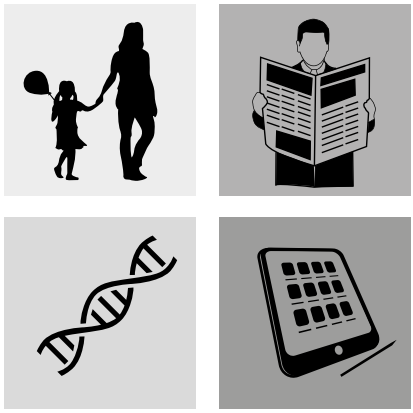
- [Panel] **Eduardo Saenz de Cabezon**, Claudia Aguirre, Mariana Carnalla Cortés, Helena González, Xavier Luri, Oriol Marimón, Ana Payo, Irene Puerto, Javier Santaolalla: Science at the margins

Trends and policies - Room: Efes

- [Panel] **Padraig Murphy**, Clare Wilkinson, Maarten van Sanden, and Gema Revuelta: Tracking the careers of science communication postgraduates

Participation - Room: Truva

- [Workshop] **Alex Verkade**: "What question would you want science to answer?" - A Dutch experiment in involving audiences in formulating a National Research Agenda



PCST 2016

Public Communication of Science and Technology

April 26-28, 2016 / Istanbul - Turkey

POSTER LIST

The presenters of selected three 'best in show' posters will be given free registration for the PCST 2018 conference in Dunedin, New Zealand.

The presenters of posters are asked to take note of the following:

- Posters will be displayed through the full conference; presenters are asked to put them in place at latest by lunch-time on the first day.
- Posters should be max. 70 cm Width and 100 cm Height.
- Posters will be displayed in groups, according to their theme (Digital Age, Ethics and Arts, etc.)
- Posters can be accompanied by a screen-based display; for this purpose, presenters will need to bring their own laptops.
- Presenters should always have a note displayed with their poster stating when they will next be physically present to discuss it.
- At the poster session in the programme – Tuesday, 16.30 – ten presenters will be given the opportunity to talk briefly (3 minutes) about their posters. These ten will be notified at lunch-time on that day.

On the final day of the conference, three posters will be selected as the 'best in show'. The presenters of these three posters will be given free registration for the PCST 2018 conference in Dunedin, New Zealand.

Digital age - Foyer/Main Hall

- P01 - [Poster] **Chris Gary**: SciChallenge - Project presentation
- P02 - [Poster] **Guoyan Wang**: Einstein vs. Newton: the historical in uence of great scientists based on big data analysis
- P03 - [Poster] **Klaus Rümmele**: What's up with crossmedia? – How to meet diverse information needs and communication preferences
- P04 - [Poster] **Javier Santaolalla**: YouTube your science: science to reach students of twenty first century
- P05 - [Poster] **Heather Doran**: Connecting scientists and the public in global online dialogues about science
- P06 - [Poster] **Joao Fernandes**, Fernandes, Luis Barbeiro, Ana Rita Claro Rodrigues: Digital Research Notebooks – a tool for communicating the products and processes of research
- P07 - [Poster] **Meghie Rodrigues**, Germana Barata, Rafael Evangelista, Carina Garroti, Daniela Klebis, Maisa Oliveira, Marcela Salazar, Graziele Scalfi, Sarah Schmidt, Giselle Soares: e use of social media at the PCST2014 – a case study

Ethics and arts - Foyer/Main Hall

- P08 - [Poster] **Tiziana Lanza**, Giuliana Rubbia, Aquiles Negrete: Pioneering Art for the planet sustainability in the widest community of Earth Scientists in Europe: our experience at EGU 2015

Media practices - Foyer/Main Hall

- P09 - [Poster] **Patricia Magana**: Science culture magazines. Where are they headed in Mexico?
- P10 - [Poster] **Emilia Hermelinda Lopera Pareja**: Beyond the news content: Exploring the relationship between online sources of information and perception of CAM therapies among digital natives in Spain
- P11 - [Poster] **Lutz Peschke**: e media functions of informational pictures in science communication
- P12 - [Poster] **Viviana Márquez**: Radio Broadcasting Strategies to popularize Mathematics and Astronomy
- P13 - [Poster] **Anton Binneman**: e quality of science communication, in South Africa, throu- gh the media 2014 to 2015
- P14 - [Poster] **Denisse Flores**: Coverage analysis of COP 16 and pandemic in uenza A (H1N1) in mexican television news: an approach from science journalism.
- P15 - [Poster] **Aleida Rueda**: How journalists ask scientists? e interview as an object of study
- P16 - [Poster] **Dyah Ratna Permatasari**: Science Talkshow on Radio Project
- P17 - [Poster] **Alan Sales Barbosa**: "Science in the air": Old-fashioned media meet digital tools for Science Communication

Museums and centres - Foyer/Main Hall

- P18 - [Poster] **Aiying Liang**: Smart Science Center
- P19 - [Poster] **Anne Land-Zandstra**: Object-centered learning in science museums: A systematic literature review
- P20 - [Poster] **Luis Azevedo Rodrigues**: Urban Geology and Paleontology – examples and opportunities in Science Centres
- P21 - [Poster] **Jessica Norberto Rocha**: Travelling science museums: challenges and experiences in science communication in Brazil
- P22 - [Poster] Ece Özdoğan Özbal: Science Centers and Operations in Turkey

Participation - Foyer/Main Hall

- P23 - [Poster] **Eric Jensen**: Preaching to the economically advantaged, educated and scientifically converted: UK science festivals as a method of public science communication
- P24 - [Poster] **Pedro Russo**: Gender-biased Content in Science Education Resources
- P25 - [Poster] **Sarah Duit**: Water@School - enganging young students in a research project
- P26 - [Poster] **Robert Inglis**: Agent Zee - Role modelling agency by women in science
- P27 - [Poster] **Claudia Goebel**: Citizen science associations and networks as agents of professionalization - from loose practitioner networks to knowledge hubs
- P28 - [Poster] **Marcela Angola Bañuelos Cedano**: A Sight of the Life Molecule

- P29 - [Poster] **Gokhan KAYA**: STEM & Makers Fest/Expo for Public Engagement
- P30 - [Poster] **Ricardo Andrés Triana Gonzalez**: Ideas For Change (Ideas Para El Cambio)

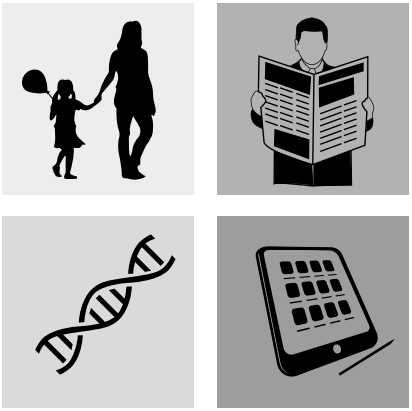
Publics - Foyer/Main Hall

- P31 - [Poster] **Chiara Ceci**: Public attitudes to chemistry in the UK
- P32 - [Poster] **Paloma Zubieta**: Assessing di iculties of mirror re ection activities from a Math festival
- P33 - [Poster] **Bernardo Gontıjo**: GAIA Project Centre: An experience report on science communication about the Biosphere Reserve of Espinhaço Mountains Range – Minas Gerais/ Brazil
- P34 - [Poster] **Andreea Moldovan**: Educational Disparities, Biomedical E icacy and Science Knowledge Gaps: can the Internet help us reduce these inequalities?
- P35 - [Poster] **Enrico Catalano**: e cultural importance of science communication and disclosure

Scientists in PCST - Foyer/Main Hall

- P6 - [Poster] **Victoria Pearson**, Trevor Collins, Gareth Davies, Simon Sheridan, Richard Holliman, Helen Brown, Mark Russell, Jenny Hallam: Labcasts: Bringing Cutting Edge Science to the Classroom
- P37 - [Poster] **Silvia Lazzarino**: Divergence between what Chilean environmental scientists and their publics think about science communication
- P38 - [Poster] **Monica Bucciarelli Rodriguez**: Another face of the Biological Sciences: investigating the outcomes of working on Science Popularization projects as an undergraduate student in the professional choice.
- P39 - [Poster] **Finarya Legoh**: Developing Science and Technology Communication Value of Researchers through Marketing Concepts
- P40 - [Poster] **Erik Arends**: Case Study: Building a Physics Institute's Outreach Programme from Scratch
- P41 - [Poster] **Vinidhra Mani**: SITN Harvard: Molding the next generation of scientists to build an e ective public interface
- P42 - [Poster] **Eric Kennedy**: Climate, Floods, and Forest Fires: Expert Communication About Uncertainty & Complexity
- P43 - [Poster] **Joana Lobo Antunes**: Improving social media skills for scientists and institutions in Portugal
- P44 - [Poster] **Zahra Ojagh**: Style of public science communication in Iran
- P45 - [Poster] **Clare Wilkinson**: Creative Research Communication: Theory and Practice
- P46 - [Poster] **Ben Creagh**: e tools and tactics of elective science communication in an issues rich environment

- P47 - [Poster] **Emiko Tayanagi**: From science PR to corporate science communication: Within the CSR context of Japanese manufactures
- P48 - [Poster] **Angela Cassidy**: Science in Public Research Network
- P49 - [Poster] **Ana Fukui**: Contributions of Linguistics for Science Communication
- P50 - [Poster] **Ana Paula Soares Veiga**: Digital Public Communication and Science Popularizati- on: the Ministry of Science, Technology and Innovation of Brazil and its Research Institutes
- P51 - [Poster] **Alexander Gerber**: Bridging the gap! How young African and European scientists are trying to end the dichotomy in approaching science communication
- P52 - [Poster] **Juan Tonda**: Latin American Network of Public Communication of Science
- P53 - [Poster] **Sofia Otero**: Science, art and culture merge to disseminate the Chilean hottest heritage
- P54 - [Poster] **Matteo Merzagora,** Vanessa Mignan, Meriem Fresson: Mainstreaming Responsible research and innovation in science education
- P55 - [Poster] **Juliana Botelho,** Rosa Pereira, Marco Anacleto, Enaile Siffert: Biological scientific illustration: a career on the making
- P56 - [Poster] **Manuela Ringbauer**, Karin Garber: How to train Science Communicators and Explainers in the Digital Age



PCST 2016

Public Communication of Science and Technology

April 26-28, 2016 / Istanbul - Turkey

ABSTRACTS

Tuesday, 26 April 2016

Strand: Digital age
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 42

Knowledge deficit or public engagement? Conceptualizing Polio Vaccination debates on Facebook

Daniela Orr
Technion institute of technology, Israel

Co-authors: Ayelet Baram-Tsabari

The ways in which the two prominent science communication models - the deficit Model and the dialogical/engagement with science model - can contribute to an understanding of the sociological aspects of decision-making in social media context have rarely been studied so far. According to the first model, the public lacks sufficient information. According to the second, the public brings many different arguments to the decision-making process, out of which only few are scientific. This paper quantitatively examines how each of these models can contribute to an understanding of debates on Polio vaccination, carried out in a Facebook group called 'Parents talk about the Polio vaccination'. A content analysis of about 1800 items sampled from discussions in the group authored by 321 commentators, out of which 22 were M.D.'s, Reveals that the largest share of items (60%) addressed scientific or medical content. However even a greater majority of items (89%) did not present any evidence at all to support their arguments. While most items did not employ any evidence, a significant connection has been found between the position held toward Polio vaccination and the use of evidence. The topic of the discussion was not significantly associated with the use of evidence.

The findings raise important questions regarding the relevance of both models in to the debates on Polio vaccination on Facebook. The clear presence of scientific topics leads us to the conclusion that the commentators are interested or preoccupied with scientific topics. On the other hand, our findings do emphasize the epistemological breadth of public decision-making regarding vaccinations when taken in a social media environment.

We hence propose an original conceptualization to account for scientific debates in social media contexts: the broad justification, according to which, scientific character of debates does not necessarily go hand in hand with empirical justification.

Strand: Digital age
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 347

The experience of using Facebook in PCST events in Brazil: Rio + 20 and IYL 2015

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The use of social networks for PCST activities has grown considerably in the last years. Little is known about the usage profile of these tools, and major challenges are to expand their scope, to increase the involvement of the participants and how to measure their impacts.. In this paper we present an analysis of the Facebook pages used for two major events in Brazil. Rio+20, the United Nations Conference on Sustainable Development took place in Rio de Janeiro, in June 2012, twenty years after the landmark 1992 Earth Summit in Rio. Many PCST activities were organized throughout the week of the event in Rio. A large warehouse in the port was used for these activities, which encompassed exhibitions, science fairs, debates, etc. They reached an estimated audience of 100,000 people, of which the majority was made up of children and young people. A FB page was used to report on the event and present topics related to science and environmental issues. A second experience occurred with the FB page of the International Year of Light in 2015 in Brazil. In this case, with about 3,000 participants, the page has had a growing impact with a large number of threads being tanned and shared. In this communication we analyze the profile of the participants of this community and their involvement with the FB page. Emphasis will be given to posts related to: (i) general information on events, competitions, etc; (ii) history of science topics on light; (iii) new researches about light and its applications; (iv) history of S&T in Brazil. On each of these themes we will analyze the content posted, the degree of involvement of the participants, and comments and questions made by them.

Strand: Digital age
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 358

Evolving germs - Communicating evolution through animations of antibiotic resistance

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Evolution is at the very core of biology, with broad ranging implications. These include societal issues such as microbial resistance to antibiotics and organisms' adaptations to climate change. Previous research suggests that evolutionary knowledge may aid citizens in making informed decisions. For example, causes for antibiotic resistance, as well as recommended countermeasures, can be derived and justified through the application of evolutionary reasoning. Therefore, citizens' knowledge of evolution forms a crucial part of scientific literacy as well as public understanding of science. Unfortunately, public understanding of evolutionary mechanisms, such as those underlying antibiotic resistance, is rudimental and associated with many misconceptions. The aim of the present study was to explore how the context of antibiotic resistance can be used to help students and members of the public to understand and apply evolutionary theory. We have developed a digital environment where one can interact with a series of animations that illustrate how antibiotic resistance arises through evolutionary mechanisms. Methodologically, we followed a qualitative approach using focus groups and observations. The main data used for analysis consist of transcripts from discussions and follow-up interviews as well as written responses to both closed and open items. The final analysis will be completed during spring, but preliminary results show that the context of antibiotic resistance facilitates volunteers' ability to use evolutionary reasoning in several ways. These include compressing spatial and temporal scales, clarifying the role of random factors, as well as providing incentives for learning a subject that is sometimes perceived as being of little importance for contemporary societal issues. Apart from the study results, we will share useful experiences from design choices in animation-based science communication. We see implications in many PCST-related areas where informal learning is considered. These include web-based campaigns, healthcare events and science center exhibits.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Valencia
Paper ID: 114

Doctor Atomic: Science Communication in Modern Opera

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The opera, as an undoubtedly a large-scale artistic and cultural event, which portrays social behavior patterns and often criticizes a number of sociopolitical issues. Furthermore, as a popular spectacle nowadays through digital technology (online streaming and live in HD), the lyric art and great opera productions can reach the most remote corner of the planet.

In this paper, we consider issues about the public image of scientist in the opera of contemporary American composer John Adams, in libretto of Peter Sellars, called Doctor Atomic (2005). The opera focuses on the great stress and anxiety experienced by those at Los Alamos while the test of the first atomic bomb (the "Trinity" test) was being prepared. Doctor Atomic concerns the final hours leading up to the first atomic bomb explosion at the Alamagordo test site in New Mexico in July of 1945. The focal characters are the physicist and Manhattan Project director, Dr. J. Robert Oppenheimer; his wife Kitty; Edward Teller; and General Leslie Groves, the US Army commander of the project.

More specific, we shall attempt to examine the following issues in the opera Doctor Atomic and in connection to recent developments in STS scholarship and Science Communication. First, we are interested in the shaping of the public image of a famous scientist in a modern opera which is available online. Second, we pay special attention to the directing of opera and how this contributes in the shaping of a public imaginary about the nuclear bomb and its creators. Finally, we are focusing on the official website of the opera and in which way the informative content that provides for the first atomic bomb constructs a public image for this. We believe that Doctor Atomic provides us with interesting insights on contemporary questions regarding public communication of science and technology.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Valencia
Paper ID: 192

Morphogenesis of a project towards better science communication

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Co-authors: Alexandra Paio, Luís Rocha, Manuel Marques-Pita, Maria de Assis

Science and Art projects can address difficult scientific messages, resulting in enriching experiences to the visitors. But how easy is it to create a multidisciplinary project with a strong scientific message? The interactive installation "Musical Morphogenesis" is a multidisciplinary project based on 6 main disciplines: complex systems, computational biology, music, architecture, robotics, and science communication. The implementation of all components of the installation had to take into consideration the specificities of each discipline, turning this into an extremely challenging project.

The main objective of "Musical Morphogenesis" was to take visitors in a sensorial journey to explore the dynamic interactions of genes and proteins during the development of an organ. Such biological processes are highly complex, with the same set of genes controlling the morphology of different organs depending on when they are activated. Taking advantage of a mathematical model of the gene-regulatory network responsible for the development of Arabidopsis thaliana flowers, the interdisciplinary team joined hands to create an installation whereby users can explore and play with the development of flowers at a human scale. The installation is composed of a robotic flower, whose kinetics reflects the temporal progression of the genetic network as it controls flower development, as well as of an interface to interact with the installation. Visitors can turn on or off one or more genes, steering the network towards the formation of different mutant organs. Finally, to facilitate the comprehension of the network, each gene has specific sound.

During the first public exhibition, the installation was highly appreciated as a piece of art and entertainment, but the scientific message was perhaps not conveyed as clearly as desirable. Based on this feedback, the installation has been remodeled. In this presentation, I will reflect on the challenges that were raised and solutions found to better convey the message.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Valencia
Paper ID: 258

"If You Can't Explain It to a Six-Year-Old": Communicating Quantum Physics to Children

Kanta Dihal
University of Oxford, United Kingdom

If communicating the concepts of quantum physics to adults proves a struggle, how could a children's book approach the topic? Children's popularizations of science are known for the inclusion of practical, tangible experiments which children can perform themselves, an approach that dramatically increases the affective bond with the child. In works on quantum physics, however, it becomes much more difficult to create experiments that can be performed by children, with safe tools that can be found at home. In children's books that cover quantum physics, such experiments are to a large extent abandoned in favour of a science fiction-like or fantastical story that excludes the reader as an active agent: examples are Lucy and Stephen Hawking's George series (2009-2016), Russell Stannard's Uncle Albert and the Quantum Quest (2005), and Robert Gilmore's Alice in Quantumland (1995). The fictional and the fantastical are used extendedly in all of these works, to the point where science and fiction are no longer distinguishable, turning the work into a 'scientific fantasy'.

Too often, studies of literature and science (Sleigh, Clarke and Rossini, Willis) or of science fiction (Latham, Bould et al, Garnett and Ellis, Roberts) omit works for children. This paper, which is part of the author's doctoral research project (2014-2017), will address this gap, looking at the communication of quantum physics to children via two genres, science fiction and popularization, and the ways in which a crossover between the two can be made in order to communicate the concepts from modern physics. Where Melanie Keene in Science in Wonderland (2015) discussed the use of fantasy elements in science writing for children to show that science was stranger and more amazing than fiction, I will show to what extent this discourse continued to be used in the twentieth and twenty-first century.

Strand: Media practices
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Mallorca
Paper ID: 265

Reception Practices of Turkish Newspaper Readers on Science, Technology and Innovation News in Turkey

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Reading practices of readers and their understandings of newspaper is a very important part of science journalism studies in general. This study presents first comprehensive analysis on reading habits and signification practices of Turkish readers in Turkey. This research is funded by Turkish Scientific and Technological Research Council in Turkey between 2011-2013. Research approach is based on social constructivist perspective and uses audience reception analysis. Having a social constructivist approach, it is assumed that producing a meaning of a text is a process in which both social reality and identity of people are produced. Therefore we can both infer some certain ways of reality production of individuals and can understand experiences of social agents and their definitions of situations in social process. Focus group analysis is the techniqe that is used for gathering interpretations of the Turkish readers on science news. Newspaper readers are categorised according to their age, wage and education and 6 different and genderly balanced groups were asked on structured questions about three different kinds of news: organ trasplantation, physics (specifically CERN experiment) and computer innovation. Some questions were also asked written to get their free associations on the news. Study shows us that there are some differences as well as similarities of their reading preferences and habits on STI news. Differences result mostly from the education and age differences. According to the theme of the news, organ transplantation news and medical news are most understandable for all readers in terms of their presupposed affects on readers daily life. Detailed findings of the audience research will be displayed.

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Mallorca
Paper ID: 50

Mitigating school dropout with science

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Co-authors: Simona Cerrato, Elena Canel

Higher education institutions can have a major role in changing the life perspectives and improving the science capital of many children and young people who are kept at the margin of the educational system, as experienced during the Sis Catalyst project. In this paper we present a case study of the Children University Programme at SISSA (Trieste, Italy) run with a small group of teenagers who have interrupted the school before the terms of the obligation. The aim of the project was exploring the potential of science to mitigate school drop out and facilitate social inclusion. It was done in collaboration with the SMAC School, an alternative school that helps young people at risk of marginalization and deviance to complied with the compulsory school.

After a preliminary period of mutual understanding and aquaintance with the research activities of SISSA, we carried out three workshops on coding using Scratch! the software developed by MIT to introduce children to programming. Eventually the SMAC pupils were invited to become mentors of a CoderDojo event organized at SISSA with a group of 30 children aged 9-11. They participated to the briefing before the meeting with the other experienced mentors, and then took care of the children with utmost care and responsibility, sharing with them their expertise, helping and encouraging when there were difficulties.

A series of in-depth interviews have been conducted with the educators and the facilitators of the workshops, and two focus groups have been carried out with the young participants. The preliminary outcomes are very encouraging: through the active engagement, the young participants have succeeded in completing a complex project, taking responsibility, dealing with other people external to their usual circle (both children and adults), in a context in which they have been valued and respected.

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Mallorca
Paper ID: 168

Between Fantasy and Reality: Early Childhoold's Conceptions About the Antarctic Continent

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Co-author: Lara Mucci Poenaru

This paper is a result of a didactic sequence placed in a science museum, about the Antarctic continent. It aimed to recreate, from students previous conceptions, physical conditions, weather and animals that live there, considering the human presence in the continent. The sequence was developed in Itinerant Museum Ponto UFMG for over six months, with students between 6 and 7 years old. In the hopes of making evident how children build their own conceptions about the Antarctic, we have focused our analysis in written activities and drawings; audiovisual recordings and fieldwork notebook registers. The data was analyzed according to Vigotsky's Imaginative Play Theory (2004) and Piaget's Semiotic Function (1973). It was noticed that, first, the students' conceptions were pervaded by fantastic elements related to imagination and fantasy, expressed as drawings of penguins riding a bicycle, or polar bears with crab claws. It was also found that some visual elements and previous experiences from the students with movie histories (such as: "Ice Age" and "Happy Feet") merged. When we compare the children's drawings made in the first couple of months and those made during the last month, it was evident the transition process from fantasy to reality. This process happened after the students were presented with scientific documentaries about the polar continent, travelling and literature books and group discussions. From the semiotic analysis of the last drawings it was noticed new elements, such as a military base, ships and human constructions. Therefore, it was possible to conclude that the children creative repertory was zoomed. The results of this research points out the importance of fantasy and imagination in the process of learning in the early childhood, and a start point to reframe the students' misconceptions and to reinforce the relevance of drawing as an interpretative tool for the children's creative process.

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Mallorca
Paper ID: 337

Public Attitudes Towards Biotechnology In Argentina

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Centro Redes, Argentina

Co-authors: Myriam García Rodríguez

The importance of biotechnology in the economy and society is growing an its social effects more visible. Argentina has a strong scientific and technological tradition in biotechnology as well as agro-biotechnology quickly allowed the development of a new economic agricultural paradigm. The country is for example one of the major producers of transgenic soybean in the world. However, there is little actualized empirical evidence about the public acceptance of biotechnology in general, and on genetically modified organisms in particular. This presentation focuses on the structure of public attitudes regarding different applications of food biotechnology from a recent nationally representative survey of the urban adult population. We evaluate news sources and trust in different social agents. We also examine the perceived benefits and risks of biotechnology applied to food and study the composition of attitudes with respect to the development of specific biotechnological applications used in vegetables and animals. We analyze eventual public attitudes on buying genetically modified food as well. Through multivariate models we segment the population into groups of acceptance-rejection and study the effect of socio-demographic variables as predictors of these attitudes.

Strand: Publics
Type: Panel
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Madrid
Paper ID: 15

The Chemistry of Public Perception

Chiara Ceci
Royal Society for the Protection of Birds (RSPB), United Kingdom

Co-authors: Massimiano Bucchi, Martin W Bauer

Chiara Ceci (PR Executive, Royal Society for the Protection of Birds) kiaraceci@gmail.com

Public attitudes to chemistry in the UK

In June 2015 the Royal Society of Chemistry published the results of study on what the UK public thinks and feels about chemists, chemistry and chemicals. It is a qualitative and quantitative research, including a national public survey, with 2,104 face-to-face interviews with UK adults (16+). I'll look at the top line results and highlight how they show that chemistry may have an image problem but it's not the one chemists thought it had.

Massimiano Bucchi (Science and Technology in Society, Uni Trento) massimiano.bucchi@unitn.it

A chemist is not really a chemist (and a hostile public is not really a hostile public)

What do the results of the Royal Society Chemistry survey suggest in terms of public perception of scientists and their social roles? How can science communication build on common sense stereotypes and how can surveys of public perceptions challenge the stereotypes of the public held by scientists and communicators?

Martin W Bauer (Social psychology, LSE) m.bauer@lse.ac.uk

How special is the public perception of chemistry in the societal conversation of science?

In early 2015, the Royal Society of Chemistry conducted a national survey of public perceptions. Many items used were adapted version from general science attitudes. I will compare responses on items that are similar worded, but replace the word 'science' by 'chemistry'. This comparison should throw some light on how the perception of chemistry differs or not from the perception of science in Britain of 2015.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Truva
Paper ID: 158

University Outreach as a Means of Science Communication: Evaluating its Effectiveness

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Centre for Science Communication, New Zealand

Universities engage in outreach activities about science for a variety of reasons, including enhancing their reputation, recruitment and the personal satisfaction of those involved. Such activities are typically portrayed as a form of science communication whereby the public is informed about science. Outreach activities may be classified according to their costs, their reach (i.e. the audience size) and their persistence (i.e. the duration of the activity and how long it is available to the public). When costs of many activities traditionally favoured by universities as outreach for science are weighed against their reach and persistence, they prove not to be the most effective forms of outreach in terms of the value they provide. Encouraging and facilitating staff (and, where appropriate, students) to engage in interviews about science with the media as well as to popularise science - through writing books and articles for the popular press and, where possible, being involved in documentaries about science - are amongst the most effective means by which universities can communicate science to the public. Enhancing such practices will require universities to recognise and reward staff for popularising science, rather than rewarding only publications and citations in scientific journals. Online outreach activities are also an area of great potential when it comes to persistence and the size of the audience. When using more traditional forms of outreach - such as public talks, café scientifiques and U3A - their effectiveness may be enhanced if they occur regularly or are packaged as a group of activities in a way that the public can subscribe to them. Finally, there may be social reasons favouring outreach activities by universities that go beyond a simple cost-benefit analysis, such as engaging indigenous peoples in science.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Truva
Paper ID: 292

Attitudes Towards Outreach within the Particle-Physics Research Community

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This paper will present early results from research into the attitudes of the particle-physics community towards science communication (specifically, towards "public engagement" or "outreach"). The project explores this community's motivations for, and barriers to, participating in science-communication activities, and how the attitudes, motivations and barriers vary across age, nationality, gender and academic position.

Much research into the attitudes of scientists towards public engagement has involved fields of research with either a direct or an immediate impact to human life and society (e.g. climate change, genetically modified organisms, nuclear power), but the literature is lacking when it comes to fields that are less accessible or "every-day" to a lay public, such as particle physics.

To represent the population of particle-physics researchers, the sample chosen is the CMS Collaboration, which discovered the Higgs boson in 2012 at the Large Hadron Collider located at CERN, the European laboratory for particle physics. Named after the Compact Muon Solenoid particle detector, the collaboration counts among its members over 4000 scientists and engineers from nearly 200 institutes representing more than 40 countries. The international but close-knit nature of the collaboration makes CMS a unique source of rich, novel data into cross-national and cross-cultural attitudes towards science communication.

The paper will focus on analysis of quantitative data, which were collected via an in-depth online survey distributed to the entire CMS Collaboration in early 2015. Over the four-month data-collection period, 374 members of the collaboration responded to the survey. Analysis of these data will address the conference theme "Evaluating public communication of science and technology".

The project is part of the author's research towards a PhD in Science Communication.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Truva
Paper ID: 299

Scientists Performing Online.TED Talks as a Means of Engaging the Public with Fundamental Physics

Mircea Sava
University of Bucharest, Romania

Online media provides science communication with valuable tools which enrich the complex transmedial web of popular science, not only with the new social networks for public engagement, but also with updated, mixed forms of the traditional ways of communicating science. Public lectures held by scientists for non-specialists are one kind of such traditional endeavours which have nowadays been modelled by digital media. This paper aims to analyse how classical public lectures have been transformed in online media, by referring to some specific TED talks (Technology Entertainment Design) given by or starred by physicists Stephen Hawking and Brian Greene: Questioning the Universe, Making Sense of String Theory, Is Our Universe the Only Universe and Stephen Hawking's Zero G Flight. The performative events of traditional conferences intended for the general audience are associated with elements of show and entertainment in a unique way in these TED talks. This metamorphosis is possible due to a negotiation process through which scientists accept to mix scientific information with entertainment, often with the help of professional science communicators, in order to reach a greater audience and to engage the public with science. From their research interests and their popular physics books, the two scientists preserve in their TED talks only the themes that are the closest to the public's daily concerns or the subjects which retain elements of an out of the ordinary nature. The combination of different media is an omnipresent element of these talks, making them an evocative illustration of the convergence specific to online media. The digital public lectures, exemplified by the TED talks of scientists Stephen Hawking and Brian Greene, are a new form of nodal points in the transmedial web of popular science, which offer a meaningful way to bring the public closer to the otherwise abstract science of physics.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Truva
Paper ID: 371

Out of the Woods: How Do (Forest) Scientists Perceive Science Communication

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Category: Evaluating public communication of science and technology

Out of the Woods: How Do (Forest) Scientists Perceive Science Communication

The present paper is about science communication from scientists' perspective on an individual level. It analyzes perceptions, motives and the environment of scientists and their communicational behavior. The study focuses on forest scientists as an example for scientists in general. In-depth interviews of different stakeholders of forest science (N=59) and a survey among German forest scientists (N=205, turnout 33.3 %) were used to collect data. This data is used to qualify and quantify perceptions, motives and relevant parts of the scientists' environments. Communicational styles are classified and their correlations to the other described aspects are analyzed.

The data shows that the scientists don't have a negative attitude towards science communication but deem it not very important among the different tasks they have to do. They have a heterogeneous image of media effects on their fellow scientists. For this reason they can't predict how own public appearances influence their reputation. They perceive media and journalists also heterogeneous - yet in the majority positive. Scientists (especially if they are of higher status) perceive science communication as part of their role, though they interpret it in a reactive communicational style. Scientists from disciplines which are more application-oriented regard science communication as more important.

The results lead to the following recommendations for those taking part in the process of science communication:

* Science journalists should keep in mind that there is a minority of experts on a certain topic in the audience who form their opinion about their competence based on the quality of their reporting.

* Specific positively evaluated experiences of a contact with a science journalist help to form a positive opinion. Science communicators should emphasize the positive outcome of science reporting - especially the distribution of knowledge, while countering a pessimistic view on the media with positive experiences and their positive outcomes for individual researchers.

* Additionally norms which are related to specific positive results of science communication should be reinforced in science education and through public visibility of role models.

* Improve scientist's perception, that public communication is part of their job.

* While improving on external motivation to do science communication it is important not to destroy intrinsic motivation. Use scientist's communications with practitioners to improve science communication in general.

Strand: Trends and policies
Type: Workshop
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Efes
Paper ID: 310

Becoming A Product-Placement: Science Communicators, Learn to Communicate on Your Own Behalf!

Alexander Gerber
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Co-authors: Ulrike Langer, Deborah Blum

Becoming a product-placement: science communicators, learn to communicate on your own behalf!

Science communicators in many parts of the world, particularly if they are freelance journalists, are facing existential challenges in an increasingly hostile work environment. In the digital media world, it is not sufficient anymore to be an expert a particular topical field. You must also be an expert in self-marketing your skills to potential clients. You know you have value to offer as a professional, but if you are not getting the jobs you want, you should start to think and act entrepreneurial! Your own successful blog, podcast, web video channel, Facebook page or Twitter feed will go a long way to demonstrate that you not only know your beat, but also how to get your message across in the relevant formats and on the relevant platforms of the digital age. Whom will scientific institutions in the future hire when looking for a communicator? Someone whose job ends when a press release is written up, or rather someone who communicates to his own following of multipliers and influencers around science?

The suggested workshop will demonstrate how successful communicators build their reputation and thereby score better jobs. Expect best cases as examples, guidelines for do's and don'ts, lots of opportunities for questions and first steps to get you on your way as an entrepreneurial-minded science communicator. //

Prof. Alexander Gerber, Director of a Science Communication degree programme which also includes half-year modules on the above-mentioned business skills ("Entrepreneurial Journalism" and "Multilancing") //

Ulrike Langer, digital media innovation journalist and correspondent, Seattle / USA, a long-term columnist and author focussing on the business prospects of using the new media environments to secure sustainable success as a freelance Communicator //

Prof. Deborah Blum, MIT

Strand: Trends and policies
Type: Panel
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Assos
Paper ID: 322

PhD-Research as a Marker of Science Communication's Development

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Co-authors: Emma Weitkamp, Charlotte Autzen, Brian Trench

PhD-research is important in many scientific domains as it represents early development of new ideas and methods. So what does a 15-year record of science communication PhD-theses (2000-2015, N=164) tell us about the development of ideas and methods in this field? PhD-research, as represented in the projects on which we have gathered information, analyses the real world of science communication from many angles, e.g. scientists, the role of the media, museums, engagement, and generally in a descriptive, sometimes experiential, manner. The dominant form of research explains and understands the reality of science communication through surveys, observations and interviews. This leads us to the idea that PhD-theses tend to be 'phenomenological' and developments in PhD-research follow and explicate developments in science communication practice. This does not mean that the PhD-research bridges the gap between theory and practice, since systematically testing new insights in practice is missing.

This panel session will start by explaining the phenomenological character of PhD-research in science communication. We will connect this record to other trend studies on science communication research (e.g. bibliographical). We will propose a 'topographical research activity' map of science communication that functions as a platform for discussion about scientific developments in science communication. The map is not intended to set a research agenda, but to make it easier for researchers, practitioners and students to reflect on developments and boundary issues.

A qualified PhD-researcher and science communication educator who has been studying trends in PhD theses (MvdS), a communication professional who is pursuing PhD research (CA), a PhD supervisor and research leader who is editor-in-chief of a science communication journal (EW), and a science communication researcher who has co-edited an anthology proposing a view of the best in science communication studies over five decades (BT) will consider the issues arising from these observations and analyses.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Kapadokya
Paper ID: 186

What Are We Trying To Teach? A Conceptually Based Approach to Science Communication Training

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Co-author: Bruce Lewenstein

The rapid growth in public communication of science and technology has led to a highly diverse and large number of training programs. Each of these programs engages in teaching. Where there is teaching, there are learners. That shift to learning-centered approach is the focus of our project, asking: what are the learning goals of science communication training?

As the PCST field matures, we believe it will be useful to identify a comprehensive set of learning goals for future trainings, ones that draw fully from the range of fields that comprise PCST. Learning goals identify what the teacher or trainer is trying to achieve. They provide a framework for deciding what will be counted as success and how evidence of learning will be gathered and analyzed at the individual level (assessment) and the course level (evaluation).

We base our work on a set of six strands of learning developed for "learning science in informal environments" (Bell et al. 2009). Our adapted list includes learning outcomes in affective issues, content knowledge, methods, reflection, participation, and identity.

We reviewed dozens of research articles describing and reviewing science communication training for scientists. From them we identified both explicit and implicit learning goals. These were classified according to the conceptual framework described above. We identified gaps in the outcomes especially in the areas of affective learning and identity formation. Ideas for evidence of success and items to evaluate them are suggested.

We do not expect that any one program would attempt to achieve all the learning goals. But we believe that conceptual coherence can help course designers identify important goals. Creating a common language will increase the ability to compare outcomes across courses and programs, identifying approaches that best fit particular education, training, and communication contexts.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Kapadokya
Paper ID: 202

Linking Theory And Practice Through Student Research in Informal Learning Environments

Anne Land-Zandstra
Leiden University, Netherlands

Co-author: Liesbeth de Bakker

In informal science education, as in any field, linking research to practice is a challenging endeavor. On the one hand, site-based evaluation reports often don't make it to the peer-reviewed journals, while on the other hand, many practitioners find it difficult to incorporate peer-reviewed research findings in their everyday practice.

One way to bridge this gap between research and practice may be the joint supervision of student research and/or development projects by practitioners and university supervisors. Student projects are often site-based and evolve from practitioner questions. At the same time, students' academic training ensures the theoretical background of their projects. In this way, students' site-based research and development resembles action research projects by pre-service teachers in the formal education system. Such educational action research projects comprise any systematic inquiry conducted in the teaching and learning environment and encourage reflective practice of teachers. Teachers find action research findings relevant, persuasive and accessible, which contrasts many of the barriers they encounter with educational research in general.

The goal of the current study is to investigate benefits and barriers of student research and development in informal science environments for practitioners as well as students. Online questionnaires will be distributed in the fall of 2015 among Dutch informal science practitioners and students who have conducted research and development at those institutions. A mix of open and closed questions will address their experiences, learning impacts, benefits and barriers. Data will be analyzed quantitatively as well as qualitatively. Based on the outcomes of this study (a.o. the perceived benefits by practitioners and students), suggestions will be given on how to benefit most from student research and development in informal science environments so that the exchange between theory and practice may be facilitated and improved.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Kapadokya
Paper ID: 14

'Popularization of Research' and 'Provision of Scientific Expertise': Consequences of Two Modes of Public Communication for the Interactions of Scientists and Journalists

Hans Peter Peters
Research Center Juelich, Germany

Two ideal types of public communication of scientific knowledge can be distinguished: popularization of research, triggered by a scientific publication or other event within science, and provision of scientific expertise, triggered by public demand to understand a social problem such as climate change and find a solution. The corresponding roles of scientists as public communicators are "science popularizer" and "scientific expert". The paper explores whether and how the relationship of scientists and journalists differs if scientists are interviewed by journalists as popularizers or experts.

Several surveys of scientists included a question on the thematic focus of the most recent interview with a journalist - actual research or expertise - as well as questions on the interaction and its assessment by the scientist. The analysis uses a German survey of 1,509 researchers from 16 academic disciplines covering hard sciences, social sciences and humanities. To assess whether the patterns found are specific for Germany or more universal, the German results are compared with results from other countries.

Interviews about actual research are more often initiated by the scientist or the public relations department than interviews focusing on expertise. Specialized science journalists are more involved in the popularization of research than in the communication of expertise. Researchers get more positive feedback by peers and by the management of their university or research institution for popularizing media stories than for being mentioned as experts in the media. Furthermore, they themselves rate media accounts of their research more often as professionally "useful" than media stories in which they are quoted as experts.

The paper concludes that popularization of research is stronger supported by communication activities initiated by science than the communication of expertise which depends more heavily on journalists' initiatives. A possible decline of journalism may thus particularly affect the public availability of scientific expertise.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 10

Science Communication and Performativity: How are We Talking About Synthetic Biology?

Britt Wray
University of Copenhagen, Denmark

This presentation is concerned with the use and influence of personal imagination in 'performative sentences' about synthetic biology, and how the role of the science communicator might be revitalized to nuance such imaginaries. The paper begins with an analysis of depictions of synthetic biology as a revolutionary field that allows scientists to "not only alter nature but guide human evolution as well," where life becomes more than "as it could be," transforming into "life as we could make it be" (Pauwels, 2013). Synthetic biology's 'economic calculus' that connects 'engineering practice to a plurality of life forms' has created the condition upon which it appears unprecedented (Mackenzie, 2013). But is this lack of precedents real, or imaginary? I will present my initial findings from an interactive science engagement project I've created that comprises my PhD, that involves the private thoughts and feelings of a group of practitioners who have been connected to synthetic biology through their work in recent years. It catalyzes experimental discussions and audio recordings between scientists, philosophers, anthropoligists, bioartists, bioethicists and entrepreneurs about the imaginaries that construct our understandings of 'neo-life' that synthetic biology brings forth. This is done in an attempt to generate experiments in knowledge production between scientists, social researchers and their publics that are "pluralist, reflexive, and promote mutual learning" (Rabinow & Bennet 2012, Fitzgerald 2014, Pauwels 2013, 225). The assemblage of the recordings I've collected through my research is being turned into an interactive documentary that embraces heterogenous and multi-voiced communication about this emerging technoscience in order to critique the reign of cohesive, specifically-angled narratives in science communication that connect to real people's lived experiences.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 249

All But Naive. On the Importance of Articulating Hidden Moralities in Public Discussions on Science

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Wageningen University, Netherlands

Co-author: Wytske Versteeg

This paper examines the role of 'hidden moralities' in public discussions, in which a scientific truth, such as what healthy food is or real ADHD, is juxtaposed against 'mere' belief or experience. On the basis of a discourse analysis of public radio debates on ADHD (UK) and the flu shot (Netherlands), we argue that this type of debate - which apparently only deals with contested knowledge - touches moral issues of identity that are just as essential for the course of the debate as they are hard to recognize.

It is shown that callers use their experience as entry ticket to the debates, and then position it as having relevance beyond their own, individual domain. Rather than directly rejecting these claims, the radio hosts undermine callers' experiential knowledge by portraying the callers as blindly trusting their own experience and therefore being naive. Callers subsequently use scientific knowledge, and allusions to scientific procedure in particular, to prove their 'epistemic vigilance'. The results suggest that it is not so much the callers' epistemic claims that are at stake here, but first and foremost their identity as a potentially gullible and non-rational person.

More broadly, the results provide a possible explanation for the frequent contestation of factual sources in public exchanges. If epistemic claims are tightly interwoven with identity work, such contestation might not be so much a matter of distrust in science, as is often argued, but a demonstration of one's critical attitude. 'Lay' participants use both science and experience to show that they are all but naive. If we want to conduct fruitful discussions and include non-scientists in a better way, uncovering this everyday moral dimension is crucial. Science communication research should therefore not restrict itself to organized debates on science and technology but also include real-life discussions on these matters.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 333

Scientists Joking on Social Media: An Empirical Analysis of #overlyhonestmethods

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Co-authors: Haley Madden, Leona Yi-Fan Su, David S. Lassen, Molly Simis, Dietram Scheufele, Michael Xenos

Humor's role in science communication has not often been studied. Researchers and practitioners have recently debated over the utility of humor and the ethical implications of its use in science communication. One popular humorous outlet in the scientific community is the Twitter hashtag #overlyhonestmethods, where (presumably) scientists discard the image of the infallible scientist, open the black box of conducting science, and share their methodological realities. To date, the conversations surrounding #overlyhonestmethods in the social science of science communication research have been primarily theoretical. Through a combination of human and machine coding, we offer an empirical analysis of the themes that emerge in this hashtag public and the kinds of humor that are employed, as well as an assessment the contributors to this discussion.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 446

Practice and Quantitative Study on Visualization of Cutting-Edge Science

Guoyan Wang
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Science and art, which like two sides of a coin are often combined together since the development of technology on computer graph since 1970s. For some top scientific journals such as Nature, Science and Cell (CNS), the images used on the cover are not only a display of the journal's creation style, but also a visualized carrier of the scientific results, which are often submitted by the research team themselves and created by some artists. After published on academic journals, the image and the science achievements then become sci-tech news to the public via mass media.

The author has worked on more than twenty forefront science achievements, created vivid images for cover story of Nature, Science and scientific news image. According to our statistical analysis, the impact of the cover story article is much higher than that of the common articles in the same journal according to five-year citations, which may come from both the editor's excellent judgement about the most significant paper and the alert of value by its appearance as a cover story. The degree of visualization used for top journals is generally higher than that used for regular journals. Furthermore, quantitative analysis also supports that significant differences do exist in visualization among various disciplines in both top20 journals in Journal Citation Reports (JCR) and all scientific journals in the National Library of China. Some disciplines are more likely to express the substance and thus have higher degrees of visibility, while some others are more abstract and could only be expressed from the perspective of attribute and relationship, thus showing lower degrees of visualization.

Supported by the Chinese National Fund of Social Science: Visual communication research on cutting-edge science achievements, (grant 14CXW011); Science Communication Program of the Chinese Academy of Sciences: Beautiful cutting-edge science (grants KP2015A12).

Strand: Publics
Type: Workshop
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Mallorca
Paper ID: 138

Using Surveys in Science Communication Evaluation: A Very Brief Introduction to the State of the Art

Eric Jensen
University of Warwick, United Kingdom

Are you feeling uncertain about how to set up a survey-based evaluation of science communication events, exhibitions or activities, or looking to explore your options? Surveys can be a great tool for learning about science communication audience expectations, quality of experience and impact. However, accurate measurement of audience outcomes requires following principles of survey research methodology that have been developed over decades of research in the social sciences. This workshop presents some of the highlights from this existing body of knowledge, identifying the strengths and weaknesses of different options. This event includes presentations some 'top tips' on how to design good questionnaires and observation-based evaluations, as well as time for discussion to address the specific challenges that attendees are facing. This practical workshop offers a very brief introduction to good practice in questionnaire design for science communication evaluation. This includes how to evaluate existing survey questions and develop new ones for quantitative evaluations. The workshop will be delivered by Dr Eric Jensen (Associate Professor, Department of Sociology, University of Warwick), a social scientist specializing in impact evaluation of science communication in a variety of settings, including science festivals, science centers, natural history museums, zoos and aquariums. He has numerous publications in journals such as Public Understanding of Science and Conservation Biology. His forthcoming books include 'Doing Real Research' (SAGE, 2016) and 'Making the Most of Public Engagement Events and Festivals' (Cambridge University Press, 2016). Jensen's PhD is in Sociology from the University of Cambridge (UK). He teaches quantitative, qualitative and mixed methods social research. He has led several groundbreaking projects on the value of new social research technologies for evaluating cultural and informal learning experiences, funded by the National Endowment for Science, Technology and the Arts (Nesta), the Arts and Humanities Research Council (AHRC) and the European Commission (Horizon2020).

Strand: Digital Age
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Valencia
Paper ID: 113

Beyond the News Content: Exploring The Relationship Between Online Sources Of Information And Perception Of CAM Therapies Among Digital Natives In Spain

Emilia Hermelinda Lopera Pareja
CIEMAT, Spain

Co-author: Carolina Moreno Castro

Theme: Trends in public communication of science and technology

The media panorama in the Spanish society has changed dramatically over the last decade. The current situation is characterized by an overlapping of news "containers" where traditional printed and audiovisual news outlets coexist with an ever increasing use of exclusive online sources, such as digital versions of traditional media, social networks, blogs and search engines. In the light of this changing context, research on science and technology communication has to go beyond the news content and pay attention to the implications and consequences of these new trends in information source, which might be the case of possible effects on public attitude and perception on controverted and socially debated subjects. The main objective of this paper is therefore to explore the possible relationships between the use of certain sources of information and the perceived effectiveness of complementary and alternative medicine (CAM). This research was carried out through the statistical analysis of the data obtained from PIKA Online Survey on Science. PIKA means Perception, Information, Knowledge and Attitudes. The PIKA questionnaire was applied to a sample of 2,138 Spanish college students from March 18 to May 4 in 2014. The questionnaire featured on purpose a specific section to measure perception on pseudoscientific issues and CAM therapies along with another set of questions aimed at further knowing about the consumption of news outlets among digital natives in Spain. After applying different SPSS procedures such as Crosstabs and Standardized Adjusted Residuals, the results show that there is a positive association between higher consumption of certain sources of information, such as internet or TV, and a positive attitude towards the most popular CAM therapies. With respect to online sources, individuals that trust the most popular CAM admitted an extensive use of search engines when looking for information about interesting and scientific topics or technological risk.

Strand: Digital age
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Valencia
Paper ID: 306

Science Communication Impact on Journals Visibility in Brazil

Germana Barata
UNICAMP, Brazil

Co-authors: Carolina Medeiros, Katia Kishi

Some prestigious science journals have invested in science communication strategies to boost readership and to share results with society. Although Brazilian journals have improved their quality within the last decade, their visibility and quality perception still remains limited. On one hand, the national media underestimate the importance of Brazilian journals (some with international standards and others with great national performances), and on the other hand science policy remains focused on international publications. Meanwhile, international science policy has paid attention towards alternative indicators of science impact on society - as Altmetrics that evaluates papers appearance in blogs, News, social media etc. This paper aims to enrich and strengthen the evidence that communication strategies in Brazilian science journals can contribute to change the current overview. We have analysed the ten most popular posts about papers published in Brazilian journals through Facebook, the most used social media in Brazil. The fanpages of 4 Brazilian journals with good performance (up to 1,000 likes each) and weekly activity at Facebook were selected: Revista Brasileira de Educação Física e Esportes-RBEFE (Physical Education); Revista de Medicina (Medicine); História, Ciências, Saúde de Manguinhos (History) and Psicologia USP (Psicology). The same analysis was done in Divulga Ciência fanpage, a project dedicated to the science communication of Brazilian journals. The papers downloads were then analysed in the months previous and after communication on Facebook. The results show a direct impact of social media communication in the papers visibility, with a clear increase on downloads in the month of Facebook communication. For instance, a post about a RBEFE paper jumped from 51 downloads monthly on average to 397 in the post month. This research highlights Brazilian journals potential to draw public interest, which could be enhanced by investing in communication strategies to increment journals value and visibility.

Strand: Digital age
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Valencia
Paper ID: 485

Scientific communication in different contexts and media

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Co-authors: Renata Maria Abrantes Baracho

The purpose of this article is to show how to develop information strategies in different contexts and media in the environment of scientific communication in the digital age, particularly, under the conditions of web media and its role in museum activities that can influence the decisions made to promote the democratization of knowledge and to support lasting relationships among science, technology and society. It is argued that the construction of communication and the use of information in different contexts and media requires organizational communication strategies. These are able to manage and to make the information available in different media, in the analyzed case, the museums.

These are also able to establish relationships between motivation and the interest in information retrieval. These technologies include virtual reality, virtual spaces, database, information systems, graphic computer, digital image processing, expert systems, knowledge representation, information organization and information retrieval.

Considering the scientific communication, this paper aims to reflect on the information strategies of appropriation in the context of site media museums. This depends not only on coordinated work between computer professionals (from different areas?) for the implementation of systems, but also on the capacity of professionals of information science and applied social sciences to overcome differences and to find solutions on the role of technology in creating processes and the use of information in the cultural background. This proposal includes revealing how the images of widespread spaces by virtual means, through social networks can minimize such disagreements.

Strand: Digital age
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Valencia
Paper ID: 157

Footprints of Fascination: Digital Traces of Public Engagement with Particle Physics on Social Media

Achintya Rao
CERN, Switzerland

Co-authors: Kate Kahle, Ayelet Baram-Tsabari, Aviv J. Sharon, Lauren Biron

Particle physics provides an especially challenging topic for science communication: It is abstract, esoteric and dependent on massive and publicly-funded machines, yet it can be uniquely awe-inspiring.

Physicists and physics institutes are increasingly being called upon to engage with the public through social media. However, little is known about the ways in which lay audiences interact with physics content on these media. Open questions include: What do social media users want to know about particle physics? How does social media shape public engagement with physics? This paper explains how an in-depth analysis of CERN social media grew from CERN's communication strategy. It examines the characteristics of scientific items on social media that attracted high engagement and draws conclusions for shaping future content.

Strand: Media practices
Type: Workshop
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Truva
Paper ID: 351

How the Science-Media Gap is Managed in Practice? The Use of News Interviews in Science Communication Trainings

Rony Armon
King's College London, United Kingdom

Though new media channels offer new venues for open and dialogical science communication (Trench, 2012, Liang, 2014), the news media remains is a major source of scientific information to the general public. As science coverage is largely attuned to traditional news values and news frames (Nisbet & Huge, 2006, Verhoeven, 2010), scientists are often trained to frame their research as engaging and clear accounts (Baram-Tsabari, & Lewenstein, 2013).

Rather than focusing on packaging science for popular consumption this workshop focuses on the interactional dynamics in which these accounts need to be embedded. While science communicating training makes a broad use of role-play scenarios this workshop exploits naturally occurring media interactions as a way of capturing potential sources of trouble and their handling by scientific experts (Stokoe, 2014). A focused and detailed examination of such interactions enables the tracing of how participants analyse, interpret and reference each other's stories (Georgakopoulou, 2007), contend over their respective agendas as the interaction progresses.

The workshop will be based on the presentation of news interviews engaging health risks in which scientists were found to disagree with interviewers' assessments. Workshop participants will be asked to discuss in small groups what the interviewer's questions were implying and how they would respond. After obtaining feedback from the group the responses that experts actually provided will be presented and evaluated for their handling of these particular interactions. The workshop is geared at preparing researchers to their interactions with journalists. However, this training could also be useful for communicating science in the conversational web media, where discussions are often steered by other agendas and claims (Laslo, Baram-Tsabari, & Lewenstein, 2011) or contestations of scientists' credibility (Trench, 2012).

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Efes
Paper ID: 83

Credibility and Climate Change: Perceived Credibility of Policy and Science Experts in Visual Media

Sara Yeo
University of Utah, United States

Co-authors: Andrew R. Binder, Michael F. Dahlstrom, Dominique Brossard

The partisan divide in U.S. public opinion on climate change has far-reaching effects on a variety of social aspects of global warming, ranging from attitudes toward climate change to climate-related government policies. Opinions are often shaped by media content and online media have increasingly become primary sources of scientific information for many non-expert audiences (National Science Board, 2014). The present study focuses on visual media in the online environment and audience perceptions of credibility in the context of climate change. A long-standing axiom in communication scholarship holds that the purpose of a specific communication message is in the eye of the beholder. Much research has followed this tradition by focusing on the influences of different types of sources, various types of message attributes, and the micro-level effects of information processing. Yet, elements concerning specific visual characteristics of messages and how they impact audiences have been overlooked. Here, we empirically test the interaction of visual aspects of multimedia messages with more traditional source factors on judgments of credibility. This line of inquiry is directly applicable to the changing contemporary media environment, where individuals of different backgrounds and perspectives are able to broadcast their opinions through user-generated content delivered online. In our investigation, we systematically vary the source and setting of a visual stimulus about climate change. Results find that the source of information, labeled as either a scientist or a politician, has implications for perceptions of credibility given the polarized opinions on the issue. With respect to the visual stimulus, we manipulate the apparent reach and congruency between the message and its source. Our findings suggest that differences all three factors play a role in perceived credibility. The implications of our findings are discussed.

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Efes
Paper ID: 314

Laypeople's Inferences About a Science Blogger's Trustworthiness: Two Experimental Studies

Friederike Hendriks
University of Muenster, Germany

Co-authors: Dorothe Kienhues, Rainer Bromme

A digitized knowledge society is not only marked by easy access to scientific information, also the public is increasingly challenged to deal with science-based information (Bindé, 2005). For laypeople, due to limited background knowledge, dealing with science-based information may be challenging. However, judgements about an expert's epistemic trustworthiness (Origgi, 2014) may guide laypeople's' reasoning about scientific information (Bromme, Kienhues, & Porsch, 2010).

While traditionally, science journalists would rehash scientific information for the public's use, nowadays information stemming directly from scientists is easily accessible to laypeople online. For example, experts engage in discussion with other experts in science blogs (Batts, Anthis, & Smith, 2008). Comments added to blog entries may entail critiques about the content (flaws, limitations) as well as contextual information (political or ethical considerations). The aim of the two studies was to determine if scientific flaws or ethical aspects, added in comments to science blog entries by further experts or bloggers themselves, influence laypeople's judgments of a science blogger's trustworthiness (i.e. expertise, integrity, and benevolence).

In study 1, it was found that if another expert's comment pointing to a scientific flaw was added, it diminished perceptions of a science blogger's expertise. However, if the blogger admitted this flaw herself, it was beneficial for participants' judgments about her benevolence and integrity.

Study 2 scrutinized how comments entailing ethical aspects affected a science blogger's epistemic trustworthiness. It was found that especially another expert's comment entailing ethical concerns (instead of advantages) induced vigilance towards a blogger's benevolence and integrity, while benevolence and integrity ratings were not negatively affected by comments pointing out ethical concerns or advantages, when authored by the science blogger herself.

These results show how laypeople calibrate judgements of trustworthiness, depending on the information accessible to them, and hence, give insights into how laypeople deal with science-based information online.

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Efes
Paper ID: 372

Building Trust and Countering Misinformation through Science Communication

Liezel Gouws
Biosafety SA, South Africa

Co-authors: Jan-Hendrik Groenewald

Risk communication is increasingly being identified as one of the most neglected aspects of the risk analysis process for genetically modified organisms (GMOs), which requires urgent investment and development. Therefore, Biosafety South Africa has embarked on a science communication project in order to communicate biosafety related issues more effectively in South Africa and to stimulate interest in science, specifically the biotechnology sector.

To date the project was successful in developing a proficient and science-based biosafety communications strategy with a national focus that will: a) Develop awareness of the regulatory systems that are in place to ensure the safe and sustainable research, development, and commercialisation of GM technologies (b) Encourage confidence in these systems (c) Increase the general awareness and consumer confidence in science and the role of South Africa's scientists and science institutions

The following projects will be initiated in order to stimulate interest and communicate the scientific facts around GMOs: a) The launch of a national video clip competition to inspire post-graduate students to communicate biosafety related messages via this popular medium. (b) Develop training resources, train and encourage post-graduate students to participate more actively in biosafety communication. With special emphasis on black South African students who speak one of the official languages to improve access to rural communities (c) Develop specific lessons and resources for teachers to teach at schools, distributed amongst schools for free. Other strategies include telling inspiring stories about the successful implementation of the GM technology by female, small scale farmers, involving the broadcast media and researchers, accessing social networks for science communication and public engagement strategies.

Essentially, this presentation will show how Biosafety South Africa developed and approached the challenge of communicating the science around GMOs and the regulation thereof in a novel and strategic way in order to build trust and counter misinformation.

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 10:45-12:00 / Efes
Paper ID: 145

Perception and Practices of Turkish Journalists on Science, Technology and Innovation News

Sema Becerikli
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Co-author: Ciler Dursun

The purpose of this paper is to try to understand science technology and innovation journalism practices in Turkey.Paper is based on the survey and deeply interview studies. Studies were conducted with 75 reporters attended to the three workshops in Ankara, İstanbul and İzmir.

The survey basically consists of two main parts. The first part consists of the participants' socio-demographic characteristics (age, sex, education level, previous profession, seniority) in order to analyze the information was compiled. Science, technology and innovation journalism practices of production processes and structure of news reporters and institutions to understand their attitude towards this issue has been addressed with 15 questions in the second part. In-depth interviews were carried out in this section. The questionnaire was evaluated in SPSS 16. The interview data were interpreted to be decoded.

The survey data are analyzed, a field of science, technology and innovation journalism is not yet specialized and we can say that journalists have several difficulties in the process of making news.

Strand: Scientists in PCST
Type: Panel
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Madrid
Paper ID: 29

Research Press Offices as Hubs of Science Communication: Envisioning Future Roles

Emma Weitkamp
University of the West of England, United Kingdom

Co-authors: Rebecca BruuCarver, Charlotte Autzen, Jamie Dorey

There is growing interest in the role that press offices and officers play in the way that research emerges from research and academic institutions. This panel explore the current activities of press offices and envisage how they could better serve the media, research institutions, and improve access to new research.

Dr Emma Weitkamp, The University of the West of England, UK, discusses the largely unacknowledged gatekeeping role played by press offices in relation to media access to research and researchers. Similar to the gatekeeping role of journalists, press officers broker access to the media by selecting research stories, but also through their choice of researchers for media activities.

Rebecca Bruu Carver, Norwegian Institute of Public Health, Norway, argues that if a piece of research is likely to be of interest and/or importance to the general public, then it should be made public. However, simply writing a press release about the results of a single study is not enough; more effort should be made to put new research into the context of the topic as a whole.

Jamie Dorey, Open University, UK, argues that Press Offices play a crucial role in the mediation of scientific information. However, this process can create numerous tensions between scientists, PR Groups and the media. Jamie will use the CERN Press Office to demonstrate how these tensions can manifest themselves and their implications for the dissemination of scientific information.

Charlotte Autzen, University of Southern Denmark, Denmark, suggests that lack of reflection on roles among university press officers influences the science communication process in problematic ways. What and how information emerges depends on both professional backgrounds, which level in the organization the press officer is employed and how information flows are managed and negotiated internally.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Assos
Paper ID: 248

Mobilisation for Public Engagement: Benchmarking the Practices of Research Institutes in Different Scientific Areas

Marta Entradas
ISCTE-IUL, Portugal

Co-author: Martin Bauer

Studies on scientists' practices of Public Engagement (PE) have pointed to variations in PE between disciplines. If variations at the individual level are reflected at the institutional level, then research institutes (RIs) in Social Sciences (and Humanities) should perform higher in PE and be more involved in dialogue with the public. Using a nearly complete sample of RIs in Portugal 2014 (n=234, 61% response rate), we investigate how PE varies in intensity, type of activities and target audiences across scientific areas. Three benchmark findings emerge. Firstly, the Social Sciences and the Humanities profile differently in PE between themselves and from other sciences. Secondly, the Social Sciences overall perform more PE activities, but the Natural Sciences mobilise more effort for PE. Thirdly, while the Social Sciences play a greater role in civic PE, the Natural Sciences are more likely to perform educational activities. Finally, this study shows that the overall size of RIs, available PE funding and PE staffing are contributing factors to the culture of PE at institutions.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Assos
Paper ID: 453

Scientists as Social Change Agents? Tweeting Science Issues into the Canadian Election of 2015.

Kathryn OHara
Professor Carleton, Canada

Co-author: Paul Dufour

Can scientists taking on an activist role in politics make a difference and do they sideswipe their scientific training to do so?

Evidence for Democracy started up three years ago with previously non-politicized scientists who were deeply concerned about the Canadian Conservative government's treatment of science and lack of evidence in policy making. Now the group has organized a campaign around the upcoming Canadian election to get science on the agenda for the four political leadership candidates. In examining the leaders debates during campaigns from 1968-2011, E4D discovered not one question was raised about science policy. Through an assiduous use of social media, the group in its campaign Science Pledge has rallied some of the electorate to ask candidates about 'smart decision making' the need for an independent science advisor, the return of the long form census, and open and transparent access to federal scientists. Margaret Atwood is a supporter. Will this flash of energy make a real difference to an electorate that may be concerned about health, climate and the environment but past research suggests it doesn't translate in the polls?

My research involves a study of the strategy of this group based on the election outcome and a companion survey of scientists to explore the attitudes towards this public form of scientist engagement in politics and if this has any measurable effect on the scientists' perception of what public engagement and outreach mean to them and what would motivate them to action. Are activists scientists needed as socially informed citizens of the world. Follow up and funded research from a previous paper that explored the new roots of Evidence for Democracy. And a published peer reviewed book chapter examining ten years of Harper government science policies and the 'muzzling' of Canadian federal scientists.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Assos
Paper ID: 365

Revisiting the Web Model of Science Communication: How to Deal with Information Instability, Diversity and Controversy

Kristian H. Nielsen
Aarhus University, Denmark

More than twenty years ago Bruce Lewenstein, based on his study of the cold fusion controversy, proposed a web model of science communication. Today, in a networked world of web-based communication, Lewenstein's original idea that "the complexity of interactions among all media" must be taken into account seems almost "too obvious" as Alice Bell recently noted. This paper reflects on Lewenstein's model and raises questions about its current implications for the world of science communication.

Lewenstein suggested that the emergence of electronic media and the permeable boundaries between traditional and non-traditional modes of science communication would have ambiguous effects. The surfeit of information made possible by new and more channels for science communication would produce added complexity and confusion. It would lead to increased information instability and potentially to misjudgments in science and the public sphere. Conversely, the scientists involved in the cold fusion saga seemed to make good use of many different sources of information, and, Lewenstein added, easy access to all sorts of information could have hastened the time needed to form sound scientific judgments.

Lewenstein's web model depicts communication in science and public communication as relatively haphazard and highly interconnected processes. Still after twenty years, this idea merits recognition. It also means that science communication researchers should strive to make all links in the web of science communication amenable to research, not just those that are being enforced strategically by scientists, public information officers and reporters. As important as studies of science communication in the mass media and social media are, they need to be complemented by more research into the more peripheral corners of the web. For science communicators, the web model encourage emphasis on the diversity (and controversy) involved in scientific communication.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Assos
Paper ID: 368

Climate Champion Farmers: Integrating Deficit, Dialogue and Participative Science Engagement

Jenni Metcalfe
University of Queensland/Econnect Communication, Australia

My paper explores the Climate Champion program of farmers to look at the relationships between the farmers, scientists, and the representatives from research and development institution who participate in or support the program. I examine the discourse of these participants during an interactive workshop to determine the styles of science engagement that are taking place.

I used a thematic content analysis of the data to determine the nature of engagement between the three groups compared to science communication models of deficit, dialogue and participatory engagement. For major themes emerging, I used a lexical qualitative analysis to look at how patterns of words and phrases describe the motivations, nature and type of engagement. Further, my paper examines how each group of actors (farmers, scientists, R&D funding agency representatives) perceives the other and whether there is also any reciprocity in perspectives.

Strand: Trends and policies
Type: Panel
Date / Time / Room : 26-04-2016 / 13:15-14:30 / Kapadokya
Paper ID: 134

Providing a Knowledge Base for a Science Communication Curriculum

Frans van Dam
Utrecht University, Netherlands

Co-authors: Anne Dijkstra, Liesbeth de Bakker, Lloyd Spencer Davis

What would be the perfect book for an introductory masters course on science communication? What are the relevant chapters, how should theory and practice be balanced, and which related disciplines must be included? Which audience(s) should science communication address? These are the type of questions that one encounters while designing a full science communication curriculum, as well as an individual masters course. It is a complicated task to decide on the size and content of the knowledge base necessary for students to develop into the science communication professionals of the future.

In this interactive session, you will have the opportunity to explore what such a science communication knowledge base ideally should entail for your own national context. We will start with the example of an attempt at constructing a national curriculum. The recently published book 'Science communication, a knowledge base' (2014, for bachelors and masters, in the Dutch language, translated in English) represents a Dutch, academic curriculum for science communication. By way of contrast, a New Zealand curriculum will be presented as well.

Participants will be stimulated to share their vision regarding a science communication curriculum and an inventory will be made of possible overlaps and differences. By comparing curricula (in different national contexts), lecturers in science communication can further build and improve their teaching. During the session, Anne Dijkstra, Liesbeth de Bakker and Lloyd Spencer Davis will give short presentations.

At the venue, an English language synopsis of the (Dutch) book will be available.

Contributors:

- Frans van Dam, Netherlands, chair
- Anne Dijkstra, Netherlands: 'A Dutch curriculum in science communication'
- Liesbeth de Bakker, Netherlands: Pedagogy for teaching science communication
- Lloyd Spencer Davis, New Zealand: 'The science communication curriculum in New Zealand'
- Examples of didactics by authors of 'Science communication, a knowledge base'.

Strand: Digital age
Type: Workshop
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Mallorca
Paper ID: 141

Networking Over Digital Divide

Satu Lipponen
EUSJA, Finland

Co-authors: Alexander Gerber, Wolfgang Goede

Science journalists need new ways to transfer ethical principles crucial in their everyday work. Earlier, experienced colleagues could offer their advice in the newsroom. In addition to guidelines and professional associations, tacit knowledge in the workplace was very important.

Now most science journalists are freelancers. They do journalism and science communications. Supporting environment is missing when dealing with ethics. European science journalists are building now a new network with the theme of responsible research and innovation (RRI). One aim of the new network is to build a digital toolbox - a practical solution of sharing knowledge about ethics.

The workshop is hands on learning event for all participants, aiming at engagement, dialogue and co-creation. It is a part of network building process. European Union of Science JournalistsÂ´ Associations (EUSJA) is participating in an EU funded Nucleus project. One of the outcomes is the EUSJA network within Nucleus and beyond.

Main goal is to discuss the dynamics of science journalism network - the interaction face to face and at major events and conferences like PCST - and developing ideas of collaboration. Then we will look into ethical themes, especially future qualifications in science journalism from ethical perspective.

Working method:

1.pre-workshop discussion (online) identifies discussion areas

2.moderated discussion and online reporting are tools for engaging audience

4.short talks enable discussion

3.outcomes of this session are clearly reported and added to Nucleus network activity

Chair: Ulla Järvi, Finland

1.Berit Viuf and Gorm Palmgren(on video)How EUSJA Nucleus network contributes to quality science journalism

2.Wolfgang Goede, Germany, World Federation of Science Journalists: Global perspectives of science journalism and ethics

3.Satu Lipponen, EUSJA, Finland: Twitter frames in communicating science

4.Professor Alexander Gerber, Germany, Rhine Waal University of Applied Science

Survival skills for future science communicators

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Sevilla
Paper ID: 160

BigVan- Scientists on the Road. Participatory Science Education Approaches Based on Performing Arts

Oriol Marimon
Researcher and Science Communicator, Spain

Co-authors: Helena González, Ana Payo, Irene Puerto, Manuel Tardáguila

Young people disenchantment with STEM represents a critical limitation for the European society. The use of performing arts in science education is an under-explored field of practice and research. In this sense, the scientific stand-up comedy Spanish group BigVan- scientists on the road mingles science, humour, education and social media to engage secondary school students in STEM.

The Spanish national project "Crazy for Science (#locosXciencia)" is a scientific stand-up comedy contest addressed to students aged 14-16. Teenagers are encouraged to create and represent their own scientific monologues after attending to scientific stand-up comedy shows performed by young researchers. Researchers maintain long-term interaction with young people through social media (Twitter, Facebook and Instagram) answering their questions about science and technology.

The project was assessed through pre- and post- formularies (under analysis) and the final of the contest was video-taped. Quantitative and qualitative results will be correlated to assess the effect of direct interaction -trough social media and on live- between young researchers and students in young people engagement with STEM.

In 2015, BigVan and eight other European entities created PERFORM, a three years European project funded by H2020-SWAFS program. PERFORM will investigate the effects of high-school students and young researchers interaction in the promotion of young people's engagement in STEM. PERFORM is a multicultural and interdisciplinary project that follows Responsible Research and Innovation guidelines using a participatory educational process based on performing arts.

PERFORM will systematically evaluate the quality and quantity of social media-based impacts stemming from the students' participation in the performance events on their feelings, perceptions and attitudes towards science and researchers.

Thus, this paper will show results and challenges of active research in science education through performing arts and including social media to promote the engagement of young people in STEM careers at local and European level.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Sevilla
Paper ID: 381

Hip Hop Health - Research, Rhythm and Rhyme for Healthy Communities

Robert Inglis
The Yazi Centre for Science and Society in Africa, South Africa

Co-author: Hilary Kromberg

Themes: Science communication in a digital age, Science communication for social inclusion and political engagement, Ethics and aesthetics of science communication, Evaluating public communication of science and technology

How can we grow appreciation of the power of scientific research to transform lives among audiences who have little or no lived experience of science culture?

The Hip Hop Science Spaza programme uses local interpretations of Hip Hop and Rap to create an engagement space which includes young people, musicians and scientists. Youth engage with scientists and conduct research projects in order to create and perform songs which are recorded and shared via digital media. The results: a showcase of science communication products; increased sense of agency among youth; and increased skills for science engagement among scientists.

This discussion arises from projects implemented by Science Spaza (a "spaza" is an informal corner shop) during 2015 in South Africa. Science Spaza supports self-initiated science clubs with activity based science and mathematics learning resources. Hip Hop Science Spaza supports learners to participate in creating media for sharing within (and beyond) the Science Spaza network.

The programme provides input into various discussions: co-creation of science communication products by members of the target audiences; possibilities for integrating evaluation directly into science communication processes; and the power of music to increase agency of young people to create messages which can speak directly into society, and even to politicians and policy makers. (Since the initiative requests have been received for the participants to present their songs at conferences on science engagement and on public health.)

Drawing on the hip hop movement, a "voice of the marginalised", Hip Hop Science Spaza creates songs which are messaging and advocacy tools, empower new audiences into active roles as scientists in society, and involve young people in public communication of science.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Sevilla
Paper ID: 166

"It's all so very normal": visitors' experiences of engaging with science at an arts festival

Ann Grand
University of Western Australia, Australia

Co-author: Margarida Sardo

Even in a digital age, the physical venues used for public engagement with science are many and various. One increasingly common route for public engagement is the inclusion of science-based activities in cultural festivals of arts, music, comedy and theatre.

Festivals have become a ubiquitous component of the summer scene, ranging in size from small, local events that attract audiences in the hundreds to sprawling, city-wide international events that attract hundreds of thousands. While festivals are certainly celebrations of a common culture, there are also places where people meet, interact and exchange ideas and thus where new thinking can emerge. Festivals are locations for 'serious leisure' as well as dabbling and serendipity.

The inclusion of science in arts festivals poses interesting questions for organisers: should they posit science as an alien visitor, with its attendant science-y tropes of white coats, explosions and fizzing glassware, or as a natural cog in the cultural mill; something that is "so very normal"?

In 2014 and 2015 the Latitude Festival, a three-day festival of music, literature, poetry, theatre and comedy, held in the summer in parkland in the east of England, included a strand of science-themed events, in collaboration with the Wellcome Trust. This paper presents the findings of the evaluations (conducted by the authors) of the science strand, focussing on audiences' engagement with the events and the presenters' motivations for participating, the challenges they faced and the value of including science in an arts festival, such as Latitude.

Strand: Media practices
Type: Panel
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Madrid
Paper ID: 7

Gender and Science Coverage: Does it Really Matter?

Luisa Massarani
SciDev.Net and Museu da Vida, Brazil

Co-authors: Marina Joubert, Deborah Blum, Richard Holliman

Studies in different countries have shown that the most prominent face of science in the mainstream science coverage is that of white senior male scientists, suggesting a stereotyped image of the male and female working in science. Other studies try to understand how much these representations of science may be (or not) shaping the image of science across audiences. this session aims to put in a deeper perspective such issues of "science, mass media and gender", discussing why they matter and the challenges of gender-balanced science coverage.

Participants are from four continents (North America, Latin America, Africa and Europe), as following:

Marina Joubert, Stellenbosch University, South Africa

Deborah Blum, Massachusetts Institute of Technology, United States

Richard Holliman, Open University, England

Luisa Massarani, SciDev.Net, Museu da Vida/Casa de Oswaldo Cruz/Fiocruz (Brazil), RedPOP, the network for science communication in Latin America and the Caribbean

Joining both research and practical approaches, the participants will present results of studies in US, Brazil, UK and South Africa and will discuss some practical tips on how to cover science in a balanced way under the perspective of gender.

Strand: Participation
Type: Panel
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Valencia
Paper ID: 78

Citizen Science in a Global Perspective

Simone Roedder
University of Hamburg, Berlin, Germany

Co-author: Bruce V. Lewenstein

Citizen Science has become an umbrella term for a variety of forms of public participation in scientific research. This participation ranges from data gathering to more collaborative and community-led forms. Distinct national traditions shape how and in what fields nonscientists get involved with scientific projects. While public participation is not new, the recent trend to label many activities as "Citizen Science" raises important questions: Who brings what to Citizen Science projects? What relationships develop between experts, communities and policymakers? Where is the line between empowerment and exploitation? Do Citizen Science practices challenge or support communication models such as the deficit model? This session aims to contribute to a more reflexive understanding of Citizen Science with global examples. We hope to advance a comparative understanding of the practice of Citizen Science.

Geoff Haines-Stiles, a producer of Carl Sagan's original COSMOS

Co-Creating Science and Co-Producing Solutions to Community, National and Global Challenges

Haines-Stiles will share stories and video from his new THE CROWD & THE CLOUD project (premiering 2017), featuring case studies from North America, Kenya and China, where citizens capture data that empowers them to confront authorities.

Yaela Golumbic and Ayelet Baram-Tsabari (Technion - Israel Institute of Technology)

Science from the Bottom Up

Golumbic and Baram-Tsabari will examine what citizens want to know and do about air quality in a local community. They will present data from an ongoing environmental monitoring project in Haifa, Israel. The analysis uses a user-centered approach for citizen science design and practice, involving participants form diverse backgrounds.

Claudia Göbel, Museum für Naturkunde, Berlin, Germany (presenter), Greg Newman, Colorado State University, USA, Jessie Cappadonna, Queensland University of Technology, Brisbane, Australia, Jian Zhang, Aarhus University, Denmark, Katrin Vohland, Museum für Naturkunde, Berlin, Germany

Citizen science associations and networks as agents of professionalization - from loose practitioner networks to knowledge hubs

Simone Rödder, University of Hamburg, Germany

Participation goes Political: Trends in Citizen Science in Germany

Rödder will diagnose a recent politicization of the already political rhetoric of Citizen Science in Germany and discuss its implications for relations amongst project participants.

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Truva
Paper ID: 123

Science Communications for the Real General Public

Erez Garty
PhD, Israel

Many people consider science to be hard to understand, boring and irrelevant. In some cases people just accept for granted the phenomena that operate the world and our bodies, and in worse cases they misinterpret basic scientific evidence. We see the results in people's irrational fear of vaccines, GMO's, and even evolution studies in middle school. For children we have science education, but in order to reach the general public we need a different strategy. For the past two years the Davidson Institute of Science Education has been actively promoting science in Israel's leading TV, radio shows, and news websites. We aim at what we call "the real general public" people who are not necessarily interested in science, or don't know they are interested in science. We use general media as an educational tool to reach them. Our involvement includes weekly items on different radio shows, items on the Sports Channel, collaborations with news websites and even with the Jewish TV channel. We publish popular science articles written by scientists, and publish them in non-scientific media.

Since we began this popular media strategy we have witnessed a greater hunger for science among the general public. The snowball we created has led to more and more scientific collaborations between science communicators and the media. In order to evaluate our pioneering work we are now in the process of a mixed-methods study to try and evaluate the impact of our efforts. We are using both qualitative and quantitative analysis such as the portion of scientific items in the media, the interest of the public in these items, and their impact on public opinions. In the conference we will present our science communication strategy and the findings from our study.

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Truva
Paper ID: 315

The Many Failures of Modern Science Shows

Joseph Roche
Trinity College Dublin, Ireland

Science shows are a form of science communication that are often provided for large audiences but generally lack a research-informed approach to their production. These shows have the potential to engage diverse audiences in novel ways that are free of the constraints of a formal learning environment, but are consistently produced and performed by practitioners that do not have expertise in the fields of science, education, communication or other research discipline. In order for this form of science communication to find a place in 21st century education it requires a comprehensive upgrade to embrace modern pedagogical approaches. We wish to explore the benefits and barriers to producing science shows that are produced and performed by experts in the areas of science, communication and education. Using interactive technology to provide new methods for science show performers to engage with audiences and collect opinions and feedback directly, we will present a paper on the learnings from our investigation of a number of trends relating to public performances of science shows. We will also present the results of a modern research-informed science show. Our discussion of the failures of modern science shows will take the form of an oral presentation of a paper and is suggested for the Conference Theme: "Evaluating public communication of science and technology".

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Truva
Paper ID: 353

How Much Science does a Citizen Need to Know?

Toss Gascoigne
Australia

How much science does an ordinary citizen need to function in modern society?

How important is it for them to know whether the sun goes round the Earth, or vice versa? To understand the difference between a bacterium and a virus? To be able to explain how aeroplanes fly, or the causes of climate change? Or to know the Second Law of Thermodynamics (as CP Snow suggested)?

Do they need to know facts, understand processes, or be good at using Google? In selecting numbers in a lottery, is it important for people to know that the chance of five consecutive numbers being drawn from the barrel is exactly the same as five random numbers?

Is an appreciation of the scientific method enough?

Is ignorance of basic science and the way scientists operate causing resistance to the introduction of policies on climate change, vaccination and fluoridisation of water?

The session will be in two parts:

a. the presentation of results of a survey conducted at local, national and international levels; and

b. A discussion among participants to tease out the ideas presented in the results, and attempt to arrive at a consensus decision.

The survey will use a questionnaire and focus groups. It will be conducted so the responses of different audiences can be distinguished (eg school-age children, scientists, members of the public, science communicators etc).

Strand: Publics
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Truva
Paper ID: 326

A study on visitors' identity-related motivations at science museums in China

Huiping Chu
Department of Science and Technology Studies, UCL, United Kingdom

In 2009, John H Falk published his book Identity and the Museum Visitor Experience. In this book, he introduces the concept of the "the Museum Visitor Experience Model" and categorises visitors into five groups: Explorer, Facilitator, Experience seeker, Professional/Hobbyists, and Recharger. (Falk, 2009, p. 158) This theoretical model is the result of empirical work arising from his research, based mostly in the US. There is no relevant research on this topic conducted under other cultural and social backgrounds, especially in China.

By questionnaire survey and face-to-face interview, my project is conducted to find out what are the identity-related motivations (or categories) of visitors at China's science museums, and what are the connections or relationships between visitors' demographics (and other features) and their motivations.

I have done more than 1200 questionnaires in three science museums in China to collect enough statistically significant data and all interview work also has been done. Now I am working on data processing and I am sure all work will be completed before the PCST conference 2016. I also have confidence in the interesting findings to come. Based on the existing results, it is clear that female visitors have advantages both in numbers and education levels.

My project can be an attempt to explore how to apply this western science communication theory in Chinese cultural background, and it can contribute to the science museum study in China by introducing a new theoretical model and help the English science communication world know the situation of China's science museums.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Efes
Paper ID: 59

Scientists' Attitudes in Consolidated and Fragile Science Communication Cultures

Noa Reis
Technion, Israel

Co-authors: Ayelet Baram-Tsabari, Hans Peter Peters

Mejlgaard et al. (2012) clustered European countries as having a consolidated, developing or fragile 'science communication culture'. Here we compare scientists' attitudes in two countries with a similar level of high quality science, but different science communication culture: Germany (consolidated) and Israel (fragile). This comparison looks at scientists as key actors in the science communication arena, their attitudes and relations with other actors such as journalist, organizations and the public.

An online survey was conducted among active scientists from natural sciences, engineering and life sciences using the same sampling and recruiting method in both countries. This yielded a sample of 464 Israeli and 975 German active scientists (response rate: 21% and 34%, respectively). The survey included a module focusing on scientists' perceptions and experience in science communication in general, and media contacts in particular, as well as their perceptions of the general public's ability to understand and evaluated scientific issues. A 'knowledge module' was developed by the authors in order to answer the question "how well do scientists know their audience's level of science knowledge?" This module was piloted only in Israel.

The countries differ in many respects. For example, German scientists are more willing to spend time with journalists, and more of them don't consider it improper to initiate the contact with the media. German scientists are more willing than Israeli ones to communicate their work in accessible ways, using catchy and entertaining phrases, relating to everyday life. Most importantly - German scientists are more willing to use their expertise to criticize political decisions affecting society, or make practical suggestions for actions: 75% of the Germans vs. 46% of the Israelis.

Other differences as well as profound similarities between the communities of scientists will be discussed in the context of the countries' development of science communication culture.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Efes
Paper ID: 155

Five Ways to Sell The Tsetse Fly: How Both Science and Institutions are Sold in Press Releases

Charlotte Autzen
University of Southern Denmark, Denmark

In their daily hunt for a good news story journalists subscribing to the international online media platform for research news EurekAlert! have a lot of readymade science news to choose from. On an average day more than 100 different press releases on newly published research is posted by universities, scientific associations, societies, journals and PR companies. Sometimes the journalists can even choose between several versions of the same research story. One could therefore have the hypothesis, that institutions have more reasons for sending out press releases than just making sure the press is well informed about the newest research achievements. By applying a discourse text analyze to these press releases one extra reason turns out to be 'communicating the institutions' who took part in the research. This paper investigates a handful of cases where up to five different press releases are published about the same research result, all posted on EurekAlert! in 2014. By comparing the different press release texts on the exact same research result this paper shows how the way 'the science' and 'the institution' are sold to the news media is showing both similarities and differences dependent of who submitted the press release. The differences are seen in positioning, voices and who gets to run with the credit for the results presented, while the overall manuscript for communicating science in the news media turns out to be very similar and more independent of the sender of the press release. Effects of and reasons for this observed practice of multiple press release postings is discussed by including a media search from the online media database Meltwater to show how many online news stories were generated in the news media, who was cited and how, all related to the chosen cases.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Efes
Paper ID: 156

Social science communication policies, social scientists' communication strategies, and crises journalism

Corinna Lüthje
University of Rostock, Germany

Co-author: Birte Fähnrich

Journalism and social sciences vary in their modes of orientation and social interaction. Especially, the complexity and long term perspectives of science do not cope well with time pressure and news factor orientation of journalists (Klimmt & Sowka, 2013). Although fields such as psychology, policy analysis or education seem to be very present in mass media, socials sciences often struggle with the public communication about their findings. They are regarded as less authoritive as natural sciences, have difficulties "with the epistemological status of their disciplines" (Cassidy, 2014) and also fail to explain their workings and criteria of knowledge production (Fähnrich et al., 2015).

The aim of this contribution is to analyze the public communication of social scientists by using the example of the German PEGIDA movement. The outbreak of right wing activism in October 2014 in Dresden and other German cities led to intensive mass media reporting. But, the members of PEGIDA refused to communicate with journalists and even disparaged media as "Lügenpresse" (a term from Nazi terminology). The spontaneity of developments led to a constant lack of information and almost synchronized news, symptoms known as "disaster mode" of journalism (Weichert, 2006). With the movement evolving so tremendously, journalists were in almost desperate need for new information. Especially, the expertise of social scientists was demanded to explain the sociopolitical backgrounds of PEGIDA, its reasons for success and its general impact on the German society. Social scientists were as surprised by the emergence and dynamics of the movement as media and politics but failed to deliver profound explanations. Several scholars tried to fill the news vacuum, presented quickly conducted surveys and claimed the validity and generalizability of results. Other scholars were accused for "stealth issue advocacy" (Pielke jr., 2007). Their attempts to advance the political agenda were even more perceived as offence on the public credibility of social sciences.

Based on the outline so far our contribution aims to answer the following questions: What role do social scientists and social sciences play in the media discourse about PEGIDA? How is social scientific research represented within the media discourse? Which strategies do social scientists apply to gain representation and media attention? We will present results of an intra-extra-media-comparison of scientific sources (press releases, research reports) and coverage in German newspapers, which show the media strategies of social scientists on the one and the processing of scientific information by journalists on the other hand. Finally we want to give some initial suggestions for social scientists (which for shure might be adapted by natural scientist) how to interact with media in acute crises: Withstand media pressure! Withstand the seduction of mediahype and thrill marketing - no rat race for public attention! No quick-and-dirty data-collection! No media effective presentation of questionable data!

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Efes
Paper ID: 393

Crossing the Boundary While Sustain the Borderline: The Story-Worlds of Scientific Experts

Rony Armon
King's College London, United Kingdom

Science popularization is conventionally viewed as external to the world of practicing researchers and to the production and validation of scientific knowledge (Whitley, 1985). Yet sociologists of science demonstrated that scientists communicate research via a plethora of scientific and popular channels in order to gain public recognition and support (Whitley, 1985, Lewenstein, 1995, Allan, et al., 2010). But while the narrative strategies of media actors and professional popularizers have been widely explored (Scott, 2007, Mellor 2012, Journet, 2010, Kirby, 2011, Gouyon, 2015) scientific rhetoric is examined primarily as drawing a boundary between science and popular culture (Gieryn, 1999, Hilgartner, 1990, Myers 2003). More needs to be done in examining how 'ordinary' scientists engaging the public link their research with prevalent social and cultural contexts.

Rather than focusing on selected cases this paper explores a broad corpus of televised interviews broadcasted live in the Israeli media for the story-worlds that experts rely upon in constructing their narratives. The findings indicate that interviewees use and intercalate the story worlds of the laboratory (Latour, 1987), the clinic (Atkinson, 1995), the natural environment (Myers, 1990), and draw upon science fiction as well as current affairs (Haran et al., 2008). But rather than blurring the boundaries between science and popular understanding (Myers 2003) their narratives align with professional norms of the communication of scientific results. A detailed analysis of their narratives (Georgakopoulou, 2007) reveals their structuring as highlighting the generality of the events narrated rather than their idiosyncratic and particular characteristics. Scientists communicating with the mass media are advised to package their research as a compelling story, avoid technical descriptions and the contingencies they encountered (Gregory and Miller, 1998, Baram-Tsabari and Lewenstein, 2013). These recommendations will be discussed in light of the media practices that this paper will report.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Assos
Paper ID: 31

Science Communication, the Chilean Way

Sofía Otero
Andean Geothermal Centre of Excellence (CEGA), Chile

Co-author: Luz Fariña

The National Commission for Scientific and Technological Research (CONICYT) its an advisory body to the Chilean Presidency, whose mission is to promote human capital training and to develop and disseminate scientific and technological research. One of its main research funds is called Fondecyt, a program that distributes around US$107 million each year for almost 600 individual science research proposals that will be developed over three years. The application form for these projects includes an outreach proposal for the researcher's plan, but this proposal is not compulsory to fill in, and it also does not add any extra points for the final project evaluation. In summary, it is an extra job that does not report greater benefits in terms of greater chances to win the fund. Most CONICYT programs do stipulate in their regulations that a percentage of the funds must be invested in outreach efforts, so, do researchers bother to outreach when their financier does not obligate them to do so like in the Fondecyt program? Our proposed presentation contains an analysis of the outreach proposals from the awarded Fondecyt projects between 2012-2014, in terms of how many researchers decided to present an outreach proposal on their application forms; what kind of activities or products were proposed; and type of audience they targeted. The analysis reveals that scientists from the Fondecyt program mostly prefer traditional outreach activities such as talks and press releases, maintaining vertical relations with their audiences (deficit model), and selecting school students as their favorite public along with the less specific "general public".

Strand: Trends and policies
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Assos
Paper ID: 122

The Structure of Scientific Communication

Marlit Hayslett
University of Georgia, United States

This paper examines science communication within a public policy setting from the critical theory of structuralism. After reviewing the existing theoretical grounding for communicating science, I propose a five-dimensional structural analysis of science communication: 1) the structure of the relationship between the scientist and the policymaker; 2) the structure of the message purpose; 3) the structure of the communication experience; 4) the structure of the message form; and 5) the structure of the message itself. If these structures are honored, likelihood of successful scientific communication with the policymaking audience is high. If these structures are violated, it is unlikely that successful scientific communication with the policymaking will be achieved. Employing Dr. Albert Einstein's 1939 letter to U.S. President Franklin Delano Roosevelt as an example, I argue that meaning is created as a function of structure rather than content. I conclude with a critique of the limitations of this analysis and suggestions for future research.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Assos
Paper ID: 183

Social Disciplines and Science Communication Studies

Semati Rodríguez Ríos
Estudiante de posgrado, Mexico

Co-author: Aquiles Negrete

Within Public Communication of Science and Technology Studies certain subjects have been overlooked. This is the case of social sciences. Possibly because when science is mentioned, we are more likely to think about natural sciences or disciplines such as medicine, mathematics, engineering or technology. However, the discussion of the basis of social sciences as well as the relevance of its public communication prevails and constitutes a potential field of research in PCST.

There is already interest in the subject, especially in disciplines such as psychology or, in the case of countries like Mexico, archeology. Also, research has been conducted on areas like visual anthropology or studies of media uses in humanities such as history. It would be very interesting to connect this work with research in PCST because, in my opinion, it would benefit science communication studies, on the one hand, and it would help to increase public understanding of social sciences, on the other.

This paper aims to offer a broad outline of communication studies in social sciences, as well as some potential research areas in PCST.

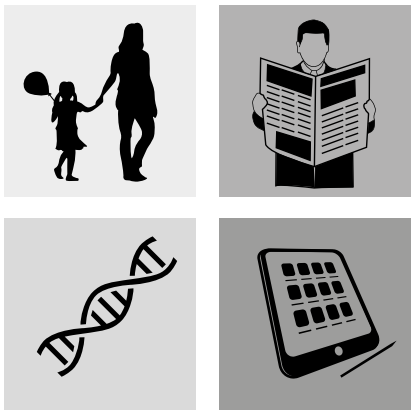
Strand: Trends and policies
Type: Paper
Date / Time / Room : 26-04-2016 / 15:00-16:15 / Assos
Paper ID: 197

Changing Perspectives in Indian Science Museum Movement: The Early Years Post Independence

Anwesha Chakraborty
University of Bologna, Italy

Science popularization has gained significant momentum in India as evident in the setting up of more than forty science centres in the last three decades. National Council of Science Museums (NCSM hereafter) which is accountable to the Indian Ministry of Culture for funding purposes, manages this network of museums and centres not only in cities and urban zones, but also in rural areas. The pace at which India is addressing the need of science popularization is, however, not new. The first scientific and technological museum in Kolkata was established in 1959, about a decade after India's independence (1947), to preserve significant objects of national scientific heritage. Soon though, state science policies were geared towards promotion of self-sufficiency in fields of science and technology, hence the interest shifted from traditional science museums to science centres whose purpose was promotion of scientific literacy and inclusive scientific education. The NCSM was thus born in 1978 and was provided complete government support. The focus of science communication in India was firmly on science teaching and not science appreciation, resulting in the creation of a number of new centres. Saroj Ghose, the erstwhile director of NCSM and ICOM ascertains, India had already positioned herself at the forefront of the global science centre movement.

The paper, designed as an introduction to science communication in India, seeks to critically examine the role of NCSM with respect to the changing interests of the state in the content of science which was to be popularized and the global transformation of the traditional science museum space to include the hands-on approach of science centres. To support the arguments, the paper will use interviews already carried out with the top management and senior officials, annual reports, budgets and the digital archives of the NCSM and the central government.



PCST 2016

Public Communication of Science and Technology

April 26-28, 2016 / Istanbul - Turkey

ABSTRACTS

Wednesday, 27 April 2016

Strand: Digital age
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 66

Science and the social media in an African context: the case of the Square Kilometre Array telescope

Michael Gastrow
Human Sciences Research Council, South Africa

Research focussed on Africa is a critical gap in the science communication literature. This paper presents a media content analysis of representations of the Square Kilometre Array (SKA) telescope on Twitter by South African users. On this basis it explores how representations of the SKA have been constructed by public and private actors to frame the project as a symbol in the public sphere.

The analysis of information flows reveals that proactive social media campaigns led to significantly higher profiles on Twitter. However, the overall composition of messages is dominated by large media firms, indicating that integration between traditional and online media plays a key role in shaping representations of the SKA on Twitter. On the other hand, there remains substantial scope for individual agency in shaping the discourse, particularly for high-profile users and leading science journalists. Micro-determinants played a key role in shaping the virality of messages. The influence of other social media platforms, as well as conferences, symposia, celebrity personalities, and positions of political influence, all strongly shaped the extent to which messages from individual users were re-tweeted.

The SKA is largely represented as a validation of African and South African science and technology capabilities, with a focus on the competitive bidding process against a rival Australian site. This formed a proxy discourse for politico-symbolic themes that framed the project as essentially African: as a symbol of African achievement, as an affirmation and validation of African capabilities, and as a symbol of modernity and membership of the global scientific and technological community. On the other hand, there is little detailed representation of the science and technology aspects of the project. The roles of individuals and institutions in framing the project are explored in light of key themes and the viral propagation of messages through the social media.

Strand: Digital age
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 291

Research Institutions and Social Media: Channels for Engaging the Public and Scientists

Ines Domingues
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Co-author: Ana Mena

Over the last few years, social media have been progressively introduced in many institutions as a PR strategy to reach different audiences, particularly in Western countries. For scientific institutions, such as universities or research centres, social networks provide a fast and simple way to reach different publics to share scientific results, to inform about news, events or job positions and for a variety of other purposes. Facebook (FB) pages are among the social media platforms most widely adopted by scientific institutions as part of their outreach programmes. An institutional FB page may follow different communication strategies. For instance, it can be used to increase the institution's visibility in society, as a tool for internal communication, or to engage citizens in science. Here, we will present the FB page of Instituto Gulbenkian de Ciencia (IGC) as a case study and will discuss how to go from a PR strategy to an engaging science communication project. IGC is a life sciences' research institute, based in Oeiras, Portugal. In 2009, the IGC launched a FB page, aiming to communicate the science being developed at the institute and to boost the visibility of in-house scientists. In the mean time IGC's FB page has reached more than 28 000 organic followers. Different strategies have been implemented in the past 3 years in order to reach and engage general public in science, both nationally and internationally, and to involve scientists in the digital science communication programme. To better understand the interests and expectations of all our followers we have recently conducted online surveys. Our results showed that the heterogeneous public that follows IGC is mostly interested in more interactive approaches to science communication covering a wider range of different scientific fields.

Strand: Digital age
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 354

Einstein: a challenge to Thai science communication?

Saowanee Chinnalong
a PhD student in science communication, Thailand

Pantip.com is one of the oldest online forums in Thailand. Established in 1996, it remains popular today with one million members and seven million page views per day. Using digital technology has clearly made it easy for the Thai middle class to join in discussions on Pantip.com. This study analyses Pantip.com's role as a platform specifically for science discussion in Thai culture. I focus on the discussion of Einstein in particular, since my preliminary survey drawing on the print media shows that the middle class expresses an extraordinarily high level of interest in Einstein. My presentation explores popular depictions of Einstein in terms of indigenous Thai appropriations of Einstein as a Buddhist thinker. From this I develop an understanding of his broader symbolic role in the Thai public view of science as a mode of passive contemplation rather than economically productive investigation.

Strand: Digital Age
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 246

Informing the Community About a Native Fauna Threat: Cane Toad App

Jan E. Dook
The University of Western Australia, Australia

Co-author: C. Everitt

Cane toads, Rhinella marina, were introduced to Australia in 1935 in an attempt to control cane crop pests. Although unsuccessful in controlling pests, they have become extremely successful, steadily expanding their range and reaching the Kimberley region of Western Australia (WA) in 2009.

Curtailing the spread of cane toads is difficult and various methods have been employed such as building toad proof fences around water holes and physically trapping animals. Unfortunately a significant number of animals that are trapped are not cane toads but instead are native frogs.

While mature cane toads are easily identified, juvenile and small metamorphs are difficult to distinguish from native frogs. To assist identification an app has been developed at The University of Western Australia (UWA) in partnership with WA Department of Parks and Wildlife (DPaw). The app is freely available and allows users to determine "Is it a cane toad".

The first edition featured 7 Kimberley native frogs that were commonly mistaken with cane toads while the second edition included a further 5 native frogs from south-west WA. People in metropolitan Perth were ringing the cane toad hotline worried that a frog in their yard was a hitch-hiker toad from the Kimberley. Parks and Wildlife staff direct people to the app as a first step.

Evaluation of the app as an effective communication tool demonstrated that while many people still prefer to text or email images to a Parks and Wildlife officer, the app has been successful in informing and empowering the community in native frog identification. The app (the first of its kind in Australia for this kind of service) has also been successful in delivering the message about hitchhiker cane toads in WA and provided another mechanism for the general public to learn about threats to native fauna.

Strand: Digital age
Type: Panel
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Madrid
Paper ID: 296

Are Science Blogs Facing Extinction?

Juliana Botelho
Pegasus Scientificus, Brazil

Co-authors: Adlane Vilas-Boas, Jennifer Metcalfe, Alicianne Gonçalves, Hauke Riesch, Jonathan Mendel

Since their first boom about ten years ago, science blogs were believed to offer new possibilities of writing about scientific issues for a lay audience. Seen either as open, democratic forum or a new mode of scientific writing and reading - more fluid, conversational, trustworthy and editorially independent in character - science blogs raised many expectations since their emergence.

Yet, many scholars argue that some of these expectations were rarely, if ever, met. And even if most scholarly reviews account for a diversity of science blogging initiatives, a number of them have come to the conclusion that these platforms have left behind the golden days.

In this panel participants are invited to question the survival of blogs, by bringing forth the following contributions:

1. "Dialogues with science: what makes a blog last?", by Juliana Botelho and Adlane Vilas-Boas. This work is an attempt to reflect on the challenges of both science blogging and blog evaluation, by examining a particular case study - a Brazilian blog called "Diálogos c/ Ciência".

2. "Climate change on the internet soapbox: Preaching to the converted", by Jenni Metcalfe. This presentation will compare the comments from two prominent climate blogs in Australia: one from a climate sceptic and one from a supporter of anthropogenic-climate change.

3. "A political and scientific issue: discourses about racial diversity in science blogs", by Alicianne Gonçalves. This communication analyzes the discourses employed on two Darwinist Brazilian blogs: "Darwin e Deus" and "Haeckeliano".

4. "Science communication and teh internets: tricksters, trolls and rhizomes", by Hauke Riesch and Jonathan Mendel. Large-scale online science communication projects often construct very ordered, controlled spaces for discussion. However, we draw on Deleuze and Guattari's work to argue that this is rather dull compared to the pleasures of more rhizomatic, less centralised approaches to public engagement.

Strand: Ethics and arts
Type: Panel
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Mallorca
Paper ID: 241

Ethical Considerations of Using Community-Led Media in Engagement Around Biomedical Research

Mary Chambers
Oxford University Clinical Research Unit, Vietnam

Co-authors: Gill Black, Alun Davis, Joanna Wheeler

Participatory methods are regularly employed in development and engagement activities because they are accepted to be sensitive to the needs of communities whilst promoting their deeper involvement and a sense of ownership of issues and solutions being addressed. Community generated, or led, media (CLM) such as photo voice, participatory film and video diaries, has been used within the development sector for well over 30 years. Recently we are seeing it used increasingly within engagement with health research programmes in developing country contexts. Despite wide use of participatory community media the conversation around ethics and the use of these methods is still young. Bringing these methods into the context of health research raises further ethical questions.

CLM is said to enable the ex<x>pression of opinion and sharing of experiences. This is assumed to be empowering, particularly when used with vulnerable groups who may not have a voice in their communities. Apart from the assumed cathartic and empowering benefits of the process, CLM may also be used as an advocacy tool, since the media outputs, in the form of photographs, photo stories or film, can portray personal stories in a more emotive and meaningful manner than text perhaps can.

Despite its potential, the use of CLM for social research or engagement raises fundamental ethical questions especially around anonymity and consent.

Through this discussion a group of practitioners and academics will explore the ethical issues that arise when communities generate media to tell their stories, and share examples and practice from a range of research settings. The panel will describe a diverse use of participatory digital approaches including: Participatory video in evaluating engagement between researchers and schools in Kenya; Consent in CLM processes: an ongoing issue viewed from a South African perspective; Ethical issues in the use of CLM in a Vietnamese context.

Strand: Participation
Type: Workshop
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Kapadokya
Paper ID: 488

Visual Health Information: Participatory Design with Vulnerable Target Groups

Ronella Grootens-Wiegers
Science Communcation & Society, Netherlands

Co-author: Van Beusekom MM

Introduction/objectives

To improve the chance of successful communication, the intended audience can be involved as co-creators in the design process. However, it is often unclear which level of participation in co-creating the design is optimal under which circumstance. As an example, interventions in patient information as a means to increase social inclusion in healthcare are received with varying success. This workshop aims to provide insight in how to use co-creation, and the opportunities and challenges of including vulnerable audiences in the development of visual information.

Methods

The facilitators of this workshop lead projects in which visual information has been developed and evaluated with sometimes vulnerable end-users, i.e. children and people with low (health) literacy. The design process comprized methods with various levels of participation, ranging from end-users as a subject to end-users as partners - in the form of surveys, interviews, pre-design and evaluative focus group discussions to interactive exercises.

Results

Without doubt, the target groups provided unique insights into their visual needs, preferences and perceptions. More interactive approaches led to design solutions coming directly from the target group. Each evaluation round in the iterative design process showed improvement of the materials. At the same time, there was a limit to the cognitive load that could be placed on the participants during the process. Also, sometimes design decisions needed to be taken by the researchers and designers, either for practical purposes or to guarantee the quality of the content.

Discussion/implications

Contributions to the design process of visual information by the intended audience are indispensable for the development of well-targeted materials. However, the highest level of target group participation may prove to be unattainable: some stages of the design still require the expertise of communication and/or design professionals, especially when dealing with vulnerable target groups. It therefore should be carefully considered which design decisions require more, and which require less participatory approaches to optimize the success of this strategy.

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Truva
Paper ID: 73

"I mean I left school at fourteen dear so I've never, you know, I›m not very well educated": Public Identities and Engagement

Clare Wilkinson
University of the West of England, Bristol, United Kingdom

Public engagement brings new responsibilities to citizens that are involved to be 'representative' and yet we rarely consider it from their perspective, instead often focussing on it from a practitioner perspective in considering how to target, design and evaluate public engagement exercises for the 'right' mix of participants.

Yet at the same time as we have a desire for public representation it appears that many public participants may in fact work to conceptualise themselves as 'unique'. When compared to 'other people' who they see as unconcerned, misinformed or relatively ignorant, or as possessing knowledge and understanding over and above their own.

When compared to our understanding of the motivations and aims of scientists and engagement practitioners involved in such procedures (Martín-Sempere, Garzon-García, and Rey-Rocha, 2008; Poliakoff and Webb, 2007; Pearson, 2001) research on the attitudes of publics themselves and their contributions to it are relatively lacking (Felt and Fochler, 2008). In addition whilst there are many practical resources on dialogues benefits and outcomes from a researchers and/or communicators perspective, few start from the perspective of the public voice.

This paper via exploration of three projects, considering subjects as diverse medical genetics, robotics and infant weaning will consider how public participants frame and represent their own contributions, in contrast to that of 'others'?

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Truva
Paper ID: 153

Exploring the Relationship Between Public Knowledge and Attitudes About Genomics

Rebecca Carver
The Norwegian Institute of Public Health, Norway

Whilst research over the past fifty years has shown there is a link between knowledge and attitudes in science in general, there is little consensus as to whether more knowledge in science leads to more positive or negative attitudes. Previous polls about public understanding of genetics reveal a variety of trends; some have shown that people with higher levels of understanding about genetics also have more opposition towards genetic technologies, whereas other studies showed no relationship between genetic understanding and attitude (Condit 2001).

Very little is known about how knowledge and attitudes interact in the realm of genomics. Genomics adopts a more systemic understanding of genetics than earlier genetics, taking into account that environmental and epigenetic factors play a more important role in the development of traits and diseases (Moore 2013; Kendler 2005). Genomic-based technologies such as gene therapy, prenatal genetic testing, personalized medicine and pharmacogenomics are starting to become more relevant for people's lives. The key questions that shall be addressed in this paper are:

1.How much does the general public know about "modern" concepts and principles within genomics, such as the genome, gene ex<x>pression, and epigenetics?

2.Is higher knowledge about genomics related to more positive or negative attitudes towards genomic-based technologies?

To answer these questions, I will present key finding from the "Public Understanding of Genetics and Genomics Project" (PUGGS project), which is a questionnaire study investigating three components: belief in genetic determinism, knowledge of modern genetics, and attitudes towards modern genomic-based technologies. The project is based in Brazil, where the questionnaire has been developed, piloted and applied to over 400 students at the Federal University of Bahia. The data for this paper was collected in March 2015 and the results will be presented at the conference.

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Truva
Paper ID: 200

NOÓSFERA: A Science Communication Proposal for Basic Education Level in Veracruz, Mexico.

Cecilia Montero de Jesus
Centro de Investigaciones Atmosféricas y Ecologicas, Xalapa, Veracruz, Mexico

Co-author: Jorge Benitez-Rodriguez

In Mexico, as other latin american countries, science communication faces constrains because of unavailability of spaces and media bearing information to many society levels. One of the most fundamental questions about this subject is: how to reach children and teenagers, and include them in a scientific knowledge? Challenges are related with generate in youth a genuine interest about scientific themes, to do that we need efficient communication channels and strategies. In order to enhance science communication channels with mexican young from basic educational levels, we edit Noosfera magazine (ISSN 2395-9096), a three-monthly publication focused originally to environmental issues, a space for researchers and journalists with original products in many knowledge areas. As a strategic activity, we develop "Noosfera in your school", a program which main aim is to bring the authors of articles directly to students of basic education levels in Veracruz state. Through simple presentations in their schools, students can talk with local scientists and open a true window to science, in a process ranging from read a magazine, meet a scientist, and search for more information in digital media. We evaluated receptivity and response of students (15-17 years old) to this process in schools from Xalapa-Coatepec influence area, our results show a significant increase in both the declared interest by students, and their subsequent internet search activity.

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Truva
Paper ID: 330

Creating a Scientific Evidence-Based Integrative Health Program to Successfully Reach Teenagers and Their Families in Low-Income Communities

Andrew Pleasant
Canyon Ranch Institute, United States

Co-authors: Jennifer Cabe, Richard Carmona

This presentation will detail the formative research process, scientific literature review outcomes, conclusions and recommendations that underpin a process to create and implement an evidence-based program to improve the health and well-being of teenagers and their families living in low-income communities in the United States.

The Canyon Ranch Institute Life Enhancement Program for Teens is being piloted in two communities - the results of those pilot program efforts will be available and shared for this presentation.

The program draws on a successful history of the Canyon Ranch Institute Life Enhancement Program that targets solely adults, but has been translated and adapted to address the health and wellness issues not only of teenagers (13-18 years old) but also their parents and caregivers. Topics include human relationships and sexuality, oral health, healthy cooking demonstrations, physical activity, goal setting, finding joy in your life, etc.

Each session is led by a qualified health care professional who has experienced a unique training program created just for this program. The training focuses on healthcare professional's speaking skills, health literacy skills, and ability to carefully and accurately convey an evidence-based message about health and well-being in an understandable and effective manner. The health care professionals that make up the core team that gives the program at each site includes an integrative health specialist, teen health specialist, nutritionist, exercise physiologist, behavioral health professional, oral health specialist, and a spirituality professional.

The Canyon Ranch Institute Life Enhancement Program for teens is an evidence-based program that demonstrates how scientific knowledge can be turned into action and informed behavior change for participants - health literacy in action.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Efes
Paper ID: 49

Scientists` Views of Science Communication in Turkey

Sevinc Gelmez Burakgazi
Hacettepe University, Turkey

Co-author: Bruce Lewenstein

This qualitative phenomenological study seeks to explore how scientists perceive science communication in Turkey. Data will be gathered from scientists (both social scientists and natural scientists). In addition to that, the researchers aim (1) to understand what Turkish scholars know about science communication (2) to establish the importance of science communication to Turkish scholars (3) to investigate the amount of science communication activities carried out by Turkish scholars (4) to explore factors that may facilitate or inhibit science communication (5) to understand the extent to which scholars may willing to undertake further science communication (6) to identify the position of scientists in science communication activities in Turkey.

The reason why we mainly focus on scientists is that we believe scientists are important for the world as they help people to understand what is happening around the world they live in. Therefore their engagement to science communication activities would make sense in order to access the scientific information people needed.

Interview protocol was developed by the researchers. Purposive sampling strategy is used in this research. Sampling will continue until no new themes emerge from the data. In other words, researchers will try to involve the richest possible source of information to answer the research question. Up to now, three interviews were conducted, more interview appointments will be made.

The analysis process will pursue the following steps (1) close reading, (2) coding, (3) thematizing, (4) exploring patterns, (5) description and interpretation. The research will be completed by the time of the conference.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Efes
Paper ID: 142

What Makes a Mediatized Scientist?

Arko Olesk
Tallinn University, Estonia

Mediatization is often described as the adaptation of different social fields or systems to the institutionalized rules of the media, the so-called â€žmedia logic" (Couldry & Hepp 2013). In science, the process is encouraged by the motivation of scientists and research organizations to increase their public visibility and use media as a legitimation tool for

This paper is based on the study of the research group behind EstCube-1, Estonian first satellite. Achieving substantial media coverage throughout the course of the project (2008-2015) they have become a success story of science communication. Eight interviews were conducted with the team members to map their media activities, learning process and attitudes towards media. The results show that the interviewees perceived the media as having a distinct logic which they need to adopt in order to get their message across. The expressed attitudes and adopted practices such as proactivity towards media were used to build a set of indicators to indicate different levels of mediatization.

Reflections on personal experiences, special media training and encouragement from colleagues combine to give researchers media confidence and the perceived sense of mastering media logic. The results, however, also reveal that the effects are not uniform across the research group, showing the enhancing role of media trainings.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Efes
Paper ID: 364

"Scientist" From The Academician's Point of View: Perceptions, Images and Media

Cem Güzeloğlu
Assist. Prof. Dr. (Izmir University), Turkey

Co-authors: Ebru Belkis Güzeloğlu, Elif Üstündağlı Erten, Emel Kuşku Özdemir

Authorities are stipulating; correcting wrong image of science which is perceived to be distant from public and wrong image of scientists which is perceived to be disconnected and isolated from public, showing science in everything and understanding nature and science of technologies to be able to strengthen public-science cohesion. Image of scientists the source of scientific knowledge and their presentation are the key factors that will provide interest and familiarity in terms of cohesion of science with public. For this reason to be able to provide science-public interaction, scientist image which is in the minds of academicians who has the role of science producer in Turkey; management of this image and the role of media context in science communication have been the issues for research.

This study is constituted as a phenomenological research in qualitative design. Among the academicians of Ä°zmir universities, 40 academicians were selected as sample depending on selection criteria of major field studies (social, medical, nature, engineering and art sciences), titles and gender providing maximum diversity. Draw a Scientist Test - DAST and semi-structured interviews were used to determine 'scientist' images, underlying motivations of these images; visibility and image in media; sharing dynamics of scientific knowledge with target groups. Drawings and interview data were analyzed with content analysis.

In findings, while the effect of environment outshined in visual images, typologies different than cliché images were reached. It is observed that scientists are mostly drawing images close their own major fields and they also equate these typologies' emotional and personage characteristics to their own moods. Participants' willingness to share and target groups that they care are varying on major study fields and titles in terms of disseminating the science they produced. In science communication, participants are giving more importance to traditional media than social media because of cultural structure, privacy and trust issues. It is also observed that participants are thinking public belief of cliché scientist image is not reflecting reality and the efforts to reflect real image to media are limited.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Efes
Paper ID: 445

Development of communication skills by editing a popular science magazine: The case of Naturalment

Antoni Bennàssar-Roig
Universitat Illes Balears, Spain

Co-authors: María-Antonia Manassero-Mas, Àngel Vázquez-Alonso

The paper presents the case of a popular science magazine (Naturalment) that was monthly elaborated by the Biology freshman students at the University of the Balearic Islands (Spain) with the guidance of a team of teachers of the Biology, Chemistry, Physics and Psychology Departments. The focus of the magazine project was the development of the students' communication skills at the beginning of their higher education scientific studies.

Each number of the magazine displayed the following contents on a monographic scientific issue: An article of popularization on a scientific issue, an interview with a researcher in the same field of knowledge, an annotated list of websites linked to the issue, and some commentaries on the journals Nature, Science, Scientific American and The Scientist. The number was completed with notes on books, movies or any other materials selected by the students. Some edition aspects, such as the magazine layout, the use of languages, the choice of images, the correct use of citations, the respect for intellectual property and attention to epistemological, social and institutional aspects of science were particularly cared.

The students worked in small groups along 2013 to publish the online magazine in the two official languages (Spanish and Catalan) at http://naturalment.uib.es. The students received specific training for the preparation of the magazine contents in reviewing popular journals and publications, using appropriately the language, presenting contents in two languages, using scientific databases, intellectual property, using popular edition programs and dissemination of the magazine in the web.

This activity about popularization and dissemination of science allows the students getting the following benefits: learning scientific knowledge about the issues they elaborated on, improving their scientific communication skills, understanding many features of the nature of science and an especial contact with the science-technology-society relationships.

Strand: Scientists in PCST
Type: Workshop
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Assos
Paper ID: 379

Blurring the Frontiers Between Scientific Research and Science Communication

Matteo Merzagora
TRACES - ESPGG, France

We believe that one of the great challenges of science communication today is to be able to be fully integrated in the post-academic system of production of scientific knowledge. In other words, the public science communication community should move on from a position of defining its independence from the scientific community in order to exerce a necessary role of constructive criticism, to a situation where this independence is defined de facto by the recognition of a structural role of science communication within the system of organised knowledge production. In fact, post-academic science and the now mature culture of participatory governance (including citizen science approaches) allow to conceive experiences where the moment of knowledge production and the moment in which this knowledge is shared in a wider context coincide. That is, activities in which the interests and the needs of the researchers and the interests and the needs of the public, although they are not necessarily the same, can be satisfied at the same time. Starting form a series of case studies, including the French Researchers' Night "great participatory experiment" and the "Living lab of scientific culture" under development at Espace des Sciences Pierre-Gilles de Gennes of ESPCI Paristech - PSL, in Paris, and using an experimented world-café like activity, examples will be collected from the audience. A discussion will be sparked on how to renovate a full integration of public science communication within science itself, without falling back in an old fashioned, service oriented role of science communication.

Strand: Trends and policies
Type: Panel
Date / Time / Room : 27-04-2016 / 10:45-12:00 / Valencia
Paper ID: 323

Training the Next Generation of Science Communicators

Alexander Gerber
Rhine-Waal University / INSCICO, Germany

Co-authors: Pádraig Murphy, Marina Joubert

In an increasingly digitised, commercialised, and politicised scientific environment, communication practise has changed more dramatically in the past few years than in the decades before. Being Head of a science communication department with dozens of employees, now requires management and leadership skills, communication governance and controlling, public affairs and diplomacy, risk and crisis management, etc.

The proposed panel intends to discuss how the concepts and contents of training programmes have changed alongside these seismic shifts in our profession. How do we prepare the next generation of science communicators? Which lessons have we learned from offering Bachelors and Masters's degrees or PGDs in different countries, full- or part-time, on campus, entirely virtual or blended? What are the obstacles in updating curricula? Which methodological skill-set will professionals need?

Students at Rhine-Waal have just launched the beta-version of a global search engine for young people to identify the programme which fits best to their needs: http://www.scicommfinder.info/map-2 (please note that this is an early beta version which is just about to be shared with the other course leaders).

By the end of 2015, the platform will be launched properly. A team of students will then produce video interviews with course leaders from around the world to showcase the variety of approaches and explain the differences between courses. These statements could effectively be used in the proposed conference session to represent those institutions which cannot be present in Istanbul.

If considered a valuable contribution to the PCST conference, this session could possibly be scheduled back-to-back with the "Careers" session which Pádraig Murphy has proposed. //

Prof. Alexander Gerber, Rhine-Waal

Dr Will J. Grant, Australian National University

Dr. Simon J. Lock, University College London

Marina Joubert, Stellenbosch

Dr. Pádraig Murphy, Dublin City University

Prof. David Pearson, Laurentian

Strand: Digital age
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 8

Blogging by Scientists: A Rare and Peripheral Activity

Yin-Yueh Lo
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Co-author: Hans Peter Peters

For a long time, scientists appeared in the public sphere mainly as "media sources" quoted in stories written by journalists. The rise of the new online media, in particular the spread of science blogs, has created more options for scientists addressing a broader public directly, though. While the group of science bloggers has received scholarly attention in several studies already, the significance of blogging compared to other means of public communication, and perceptions, preferences and attitudes towards blogging within the scientific community at large are less well studied.

In an online survey of 815 scientists from Taiwan, Germany and the United States the prevalence and practice of blogging among scientists in the respective countries as well as related perceptions, beliefs and attitudes of bloggers and non-bloggers were investigated. Study participants were randomly selected from a list of authors of scientific articles according to a stratified sampling scheme. Response rates were 21-23%.

The proportion of scientists reporting active blogging ranged from 4% in Germany and Taiwan to 8% in the United States. Almost 80% of the blogging scientists publish new posts only every few weeks or less often. The vast majority of blogging scientists spend only 2 hours or less per week on blogging. Still, the belief that "blogging wastes time that would better be used for research" is prevalent in all three countries and one of the main concerns regarding blogging. German scientists perceive least often a positive attitude towards blogging of their colleagues and organizational management. Blogging scientists consider members of the public an important audience besides their peers and students. However, the low frequency of publishing new posts and the limited time devoted to blogging activities indicate that blogging remains a peripheral activity for most scientists who blog.

Strand: Digital age
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 147

Twitter: A Useful Tool to Communicate Science in University Research Centers

Clementina Equihua
Instituto de Ecología, UNA;, Mexico

Co-author: Paloma Zubieta

Twitter is a Web 2.0 microblogging tool that improves public engagement with science. It is useful to explore and measure the dynamics of every content. It also acts as a public voice for sciences, enhancing communication between scientists and the general public.

The Institutes of Ecology and of Mathematics from the National Autonomous University of Mexico (UNAM) have communicators managing Twitter accounts since 2012. In both cases, the Twitter strategy fits the model of public engagement with science.

The aim of this paper is to assess public acceptance of science information delivered as microblogs from research centers, its social impact and its role in facilitating wide public participation.

We analyze both Twitter accounts and compare our results with other research centers, from UNAM and abroad, with similar communication objectives. We identify subjects that are favored by the public, determine how much people interact and try to estimate their interest on science.

We found that for their audience impact, both centers are positioned in Twitter as important accounts in Mexico and other countries. We measure this impact by the constant increase in followers and their nationality, amount of "favorites", "retweets" and visits to the institutional profile pages. With their public visibility, accounts are becoming a confiable source of information and their reputation is increasing and recognized by the public, media, institutions and even politicians. This benefits both research centers in particular and science in general.

This paper provides some criteria for understanding how do similar institutions might use Twitter as a tool in order to not just post updates of academic events, but by popularizing science in several ways. We show the importance of social media for contributing to the knowledge society, an objective of public universities.

Strand: Digital age
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 180

Science Blog Competition to Encourage Young Students to Do Science Communication

Finarya Legoh
the Agency for Assessment & Application of Technology, Indonesia

Co-author: Dyah Ratna Permatasari

There are several articles pointed out that scientists should increase their science communication skill. Hayden (Nature, 29 January 2015) revealed a research that there was a large gap between scientists and public when it comes to their opinion about hot debated issues.

Young students are our source of future scientists. We have to prepare them to be noble scientists with better science communication skill. There are many science competitions for young gifted students in nationwide or international levels. However, almost all are only focused on the scientific knowledge. They are not enhancing the science communication skill of students.

ASEAN+3 Center for Gifted in Science has elected Indonesia as the host of the 4th ASEAN+3 Junior Science Odyssey 2015, a science competition for junior high school gifted students in ASEAN countries plus Korea, Japan, and China. The competition held in August 2015, it was divided into : poster presentation, laboratory skill assessment, and team project presentation categories. For the team project, there were 10 teams consisted of participants from mixed countries. It came an initiative to assign the students to develop science blog. The content should include their ideas on protecting the marine and coastal environment, in order to preserve biodiversity ecosystem, and how to communicate the content to public. They previously visited Indonesian research vessel, called Baruna Jaya IV, in order to comprehend what research and development that scientists have done for marine and coastal environment.

The result of the assignment was remarkable. The students could express their ideas in the blogs informatively. The juries were also amazed that all ten teams offered different novel ideas with a high standard quality.

Strand: Digital age
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 277

Micro-Blogging Science: An Analysis of the @RealScientists Twitter Account

Fionnuala Murphy
DCU, Ireland

In the age of social media, science communication has become more complex and interactive. The immediacy of the platform allows for people from different strata in life to interact and engage with each other in 'Mode- 2' frame, with relative ease in what have become playful 'third spaces'. Scientists and researchers have traditionally not been seen to actively engage with the public outside of designated 'science outreach'. But with research funding increasingly awarded with an obligation to communicate findings, this separation of public from science is disappearing. Social media, in allowing people to interact daily, is speeding up this merging of audiences.

This study takes an in depth look at the @RealScientists Twitter account: the curators, the followers and the administrators. The account was chosen as it reflects many different strands of science and science communication. A quantitative and qualitative analysis was performed on the Twitter archive of the account to discover how scientists approached curating an account with a different network to their own. A study of the account's followers was also undertaken to discover who they were and why they followed the account.

We demonstrate that there is an appetite amongst non-scientists (and other disciplines) to peek into the working day of researchers. Former curators acknowledged potential professional benefits to being active on Twitter. The research also shows that in the case of curated Twitter accounts, the followers have considerable control over the conversation and the information disseminated.

Strand: Ethics and arts
Type: Panel
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Madrid
Paper ID: 55

Spectacular Science: A Reflection About Limits and Opportunities

Cristina Olivotto
Sterrenlab, Netherlands

Co-authors: Oriol Marimon, Matteo Merzagora, Cristina Olivotto, Jen Wong

Shows, spectacular events, mysteries, performances, buskingâ€¦ are instruments often used to engage the public in face to face science communication (in particular in science festivals, science events, but also in the outreach strategy of research institutions). They can be on one side a mean to reach underserved audiences, but on the other side they can just be used as a way to make the pill easier to swallow, reflecting an old fashioned view of science communication. Several recent projects are trying to clarify what are the opportunities and the limits of such approaches, reviewing them under a critical light. TEMI is developing a training model for teachers based on the use of mysteries and showmanship, but linking them to a more articulated scheme involving an apprenticeship-like model - the GRR - gradual release of responsibility approach - that appears as a promising link between formal and informal science education practices. PERFORM is analysing how Responsible Research and Innovation concepts, and more generally socially relevant science based issued, can be introduced to all type of audience - including high school students and museum visitors - through different type of performing arts (from street science and science shows to clowning). Guerilla Science is an organisation that revolutionises how audiences experience science through live events which aim to spark curiosity and inspire wonder in adults with little background in or experience of science. These examples will be used to spark a discussion on an issue - the controversial use of spectacular, mysterious trick to engage the public with science live and online - that is in fact not new, but needs to be constantly re-actualised and necessitates a constant reflection to overcome stereotypes and blind adhesion to mainstream paradigma.

Strand: Media practices
Type: Panel
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Kapadokya
Paper ID: 117

Framing and Mapping Science News in The Long Run (1990 - 2015)

Petra Pansegrau
Bielefeld University, Germany

Co-authors: Ahmet Suerdem, Martin W. Bauer, Federico Neresini

This session will be a panel session and fit in the theme 'Trends in public communication of science and technology'.

Patterns of science news are a feature of the modern public sphere, and print media are now easy accessible in complete (digital) archives. The bottleneck of research has moved from corpus construction to the analysis. The challenge is to map the discourse of science and to compare tools for doing so.

The session will focus on the media mapping of science coverage in the news in different countries. Based on some of the results of the international research network MACAS - 'Mapping the Cultural Authority of Science' (2012-2016) we will compare and discuss the media discourses about science in Turkey, Germany, Uk and Italy in qualitative and quantitative ways. The members of MACAS constructed comparable and tagged data corpus of mass media discourse in different countries over a time span of 25 years (1990 - 2015) and conducted systematic longitudinal analysis of the trends in the public discourse of science, which will be presented in this session by 15 min statements and one following discussion by

Petra Pansegrau (Germany) and Gergana Popova(UK)

Qualitative frame analysis of science and scientists in Germany and the UK

Ahmet Suerdem (Turkey)

Science in the turkish media

Federico Neresini (Italy)

Mapping controversies of science in different countries

Bankole Falade (UK / Germany) and Martin Bauer (UK)

Quantitative frame analysis of science in the news

Strand: Participation
Type: Workshop
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Assos
Paper ID: 251

Science Cafe in a Digital Age

Balint Balazs
ESSRG, Hungary

Co-authors: Atta Badii, Fernando Ferri, Tommaso Castellani, Franco Bagnoli, Balint Balazs, Patrizia Grifoni, Adriana Valente, Ovidiu Serban, Davide D'Orazio,

The SciCafe 2.0 Consortium and the European Observatory for Crowdsourcing proposes to hold this workshop for exchanging insights on approaches to social innovation community support management. The SciCafe 2.0 project has aimed to support a social engagement eco-system with an adaptive participative engagement platform plus community management support providing specific observatory services for Best Practice sharing on Community Engagement Support amongst real communities with real societal challenges and specific problems to resolve.

The SciCafe2.0 Platform as integrated with Citizens' Say knowledge exchange tool was adapted to serve the specific engagement requirements of two communities: the Municipality of Rome Second district ("Osservatorio Scienza per la Società del Municipio 2 di Roma) and the Florence Science Cafe Network. Some of our results have already been reported in our Handbook of Online Participatory Methodologies: Analysis of Community Network Interactivity and Participative Engagement Models and Methods available online (www.SciCafe2-0.eu).

We invite participants to an open setting to freely drop in and out of the session and benefit from an informal style of interaction and discussions inviting contributions on the topic from all participants. As a start we will outline the SciCafe 2.0 mission and its achievements to-date essentially as promoting and facilitating the uptake and customisation of the SciCafe 2.0 platform to suit the preferred modes of participative engagement of various communities.

We will also present the SciCafe2.0 Platform in action through a quick online demonstration. After the demonstration we will discuss the practical issues of building and maintaining social engagement communities and the scale up challenges e.g. privacy protection, flexibility in engagement modes (offline, online), transparency of proceedings, raising the floor for the ICT-non-savvy to be able to have access to the session reports and contribute as they wish.

Strand: Participation
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Truva
Paper ID: 150

Social Representations of Science at the Commission Hearings into The Decline of Sockeye Salmon in British Columbia, Canada: Relying on Good Science or Indulging in Speculation?

Michelle Riedlinger
University of the Fraser Valley, Canada

This study draws on the theory of social representations (Moscovici, 1961/2008; Moscovici, 2001; Jovchelovitch, 2006; Wagner and Haynes, 2005) and corpus-supported methods of analysis to examine the testimonies of researchers and invested others (e.g. resource managers and environmental groups) at the 2011-2012 Cohen Commission of Inquiry into the Decline of Sockeye Salmon in the Fraser River, BC. An examination of participants' testimonies associated with risks to sockeye salmon populations revealed that participants both mobilise and resist particular common sense research frames. For example, government research managers attributed a lack of ecosystems science to the complexity of the science and a lack of adequate resourcing. Conservation representatives resisted these common sense framings and instead appealed to frames associated with a lack of Indigenous community engagement and the "politicisation" of science.

Science communication was also a key concern. Some participants considered science communication efforts valuable for translating knowledge, improving transparency and being accountable, while other participants expressed concern with creating public fear and interference in current salmon management efforts. Researchers stating a commitment to furthering scientific knowledge made sense of preliminary research findings related to salmon anaemia virus genetics in terms of the precautionary principle and the need for public communication. In contrast, researchers stating a commitment to environmental management support for the salmon industries spoke about the same research findings in terms of their concerns with "speculative science" and the need to manage public concern. Common sense representations supported attempts to shape (and exclude) participation in public discussions of salmon risks and involvement in risk-related research. This project contributes to science and society risk research and the mobilisation of knowledge related to social inclusion and political engagement. Researchers could consider commission hearing testimonies and their uptake in recommendation reports as useful data sources for uncovering important socio-psychological dimensions of science communication.

Strand: Participation
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Truva
Paper ID: 263

Building a Public Controversy: Advocacy, Media and Politics in UK Debates over Bovine TB since 1971

Angela Cassidy
King's College London, United Kingdom

This paper will explore the escalation and polarisation of public debates in the UK over government policies to cull wild badgers (Meles meles) in order to control bovine tuberculosis (bTB) in domestic cattle herds, which have been ongoing since the discovery of bTB infections in badgers during the early 1970s. Over the past forty years, the UK has seen a repeating cycle of policymaking, research, controversy, expert-led policy review, and escalating disease rates. It has also transitioned from a localised and/or specialist policy debate into a highly polarised public controversy attracting widespread media coverage, particularly since 2010. Science has played a central role in these debates - as one of several core sources of knowledge about badgers/bTB, but also as a rhetorical resource mobilised by all sides in these debates. This paper will present work in progress exploring the contrasting and frequently unfounded expectations that actors in badgers/bTB have made - about science (that it would easily resolve the problem); about policy (that it would be directed by 'the evidence'); about publics and about animals (that they would lack agency and sociality). I argue that these persisting expectations, combined with legitimacy struggles over expertise, have contributed to the long-term continuation of this cycle, a breakdown of relationships between key actors and ongoing policy failure. I also present data on how the badger/bTB issue has been covered in the UK media, illustrating the roles of specialist journalists and audiences, non-governmental campaigners and party politicians in driving the further polarisation and public visibility of the debate. This case study can inform wider questions of how public scientific controversies come about, by identifying the factors driving change over time and precipitating the movement and uptake of an issue into the wider public sphere.

Strand: Participation
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Truva
Paper ID: 390

ANT with a Bite?: Debate, Rhetoric and Science Conflict Communication

Padraig Murphy
Dublin City University, Ireland

Co-author: Stephen Hughes

What does it mean to communicate a science controversy? It may be dispassionately, using historical or journalistic processes, from the outside. Within the controversy, there are sides taken, rhetorical devices to be employed, whether by speech or focus group. But contemporary STS, particularly actor-network (ANT) and composition theories, are showing how controversies in eg emerging technologies combine, grow, become part of the system. It may seem that the cut and thrust, the bite, characterising popular communication of science , or STEM outreach, or the rhetoric of communications from TED talks or Famelab, are missing. We have yet to identify the language and mode of argument between these actors.

We explore in this paper the gap that exists between a communication of emerging sciences and technologies and the representation of objects, ideas and talk in ANT, as an ongoing project to establish connections between science communication and the concepts of STS. It involves engagement of actors, human and non-human, while simultaneously communicating between and outwards, on the controversy within the sociotechnical issue itself.

We present empirical data from four fields in which debate or conflict is played out either wholly online, or sometimes online with corresponding face-to-face debate : 1)'Evolution debates', focusing on the rhetoric of the Hamm v Pye debate 2) GM potato project in Ireland 3) online nanotechnology knowledge debates and 4) controversy mapping using specially constructed software by Medialab, Paris.

Taking an STS approach, these fields challenge the whole notion of what we mean by 'debate' - or perhaps there is an inherent warning. How can actors, humans and non-humans, 'argue with each other' in the network? How do we communicate this level of complexity in conflict?

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Efes
Paper ID: 18

A Second South African Public Perceptions Survey on Attitudes Towards Biotechnology

Michael Ellis
NRF SAASTA, South Africa

Co-author: A. Binneman

Nurturing a constructive relationship between the public and the institutions of science has numerous benefits. By making more informed decisions regarding scientific topics, individuals can improve their quality of life, and better contribute to social development. A more engaged public may be better positioned to adapt to changes in the science and technology environment and exploit new technologies. Greater engagement with the sciences can lead to a more highly skilled workforce and consequent economic development.

Elam and Bertilsson (2002) frame science engagement as a process of deliberative democracy that requires the establishment of equality between the public and the science establishment in order to create socially sustainable policies. Overall, such engagement makes the government and scientific institutions more accountable to the public, and improves the transparency and legitimacy of the science policy process.

Biotechnology is an ongoing focus area for the South African Department of Science and Technology (DST). The Bio-economy Strategy of 2014 represents an advance from the 2001 National Biotechnology Strategy, and also includes support for initiatives to promote public understanding of the technologies underpinning the bio-economy.

The Public Understanding of Biotechnology (PUB) programme, an initiative of the DST which is implemented by the South African Agency for Science and Technology Advancement (SAASTA) has commissioned a research project to undertake a national survey of the South African public's perceptions of biotechnology.

This includes perceptions of biotechnology in general, of biotechnology-related applications, and of sub-fields within the broader field of biotechnology, including controversial aspects, such as the genetic modification of agricultural products. The overarching aim of the project is to provide data and analysis that will inform evidence-based policies and strategies related to biotechnology, particularly in terms of science advancement, awareness, and communication strategies.

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Efes
Paper ID: 124

Making "Not The Deficit Model" Specific: Rhetorical Analysis to Evaluate and Design Texts for Research-Industry Collaboration

Erika Szymanski
University of Otago, New Zealand

Written texts, in all their various physical and digital modes, remain key elements of science communication in an era of increasing digital publication. Reading texts not only as delivering content but as structuring relationships, I consider how rhetorical elements of science communication writing promote or work against collaboration amongst scientific researchers and industry members expected to benefit from their work. The New World wine industry offers a case study in which applied scientific research is expected to have direct implications for practicing winemakers and grape growers, and where industry members have expertise making their participation in many stages of the scientific process possible. Through a rhetorical and critical discourse analysis of wine science communication texts, I first document how those texts currently enact research-industry collaboration, then suggest rhetorical strategies for more purposefully aligning what those texts do with larger organizational goals. Beyond implications for the specific case, this study points to the value of analyzing how written texts function as relationship-mediators and how rhetorical features can be manipulated to promote collaboration amongst authors and audiences. It also revisits the methodological contributions of rhetorical theory to science communication and suggests attention to texts, beyond content analysis, as a tool for evaluating, understanding, and facilitating relationships in our motion toward increasingly participatory and democratic science practices. This study will be complete by the time it is presented.

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Efes
Paper ID: 174

Critical Review of the UK's "Gold Standard" Survey of Public Attitudes to Science

Eric Jensen
University of Warwick, United Kingdom

Co-author: Benjamin K. Smith

Since 2000, the UK government has funded surveys aimed at understanding the UK public's attitudes toward science, scientists and science policy. Known as the Public Attitudes to Science (PAS) series, these surveys and their predecessors have long been used in UK science communication policy, practice and scholarship as a source of authoritative knowledge about science-related attitudes and behaviors. Given their importance, and the significant public funding investment they represent, detailed academic scrutiny of the studies is needed. In this essay, we critically review the most recently published PAS survey (2014), assessing the robustness of its methods and claims. Ultimately, this review aims to bring the influential PAS 2014 survey results into the peer-reviewed academic literature by evaluating which findings should be accepted or rejected in light of established principles of good practice in quantitative social research. The review casts doubt on the quality of key elements of the PAS 2014 survey data and analysis, while highlighting the importance of robust quantitative social research methodology and probability-based sampling. The implications for the current status of knowledge about public attitudes to science are discussed, suggesting that some of this social scientific 'knowledge' rests on a weak methodological foundation.

Strand: Publics
Type: Panel
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Mallorca
Paper ID: 555

Bringing ancient stories to life: Dinosaurs are cool, but no hominids please?

Marina Joubert
Stellenbosch University, South Africa

Panelists: Prof Anusuya Chinsamy-Turan, University of Cape Town; Shirona Patel, University of the Witwatersrand; Prof Anthony Lelliott, University of the Witwatersrand

South Africa's rich palaeontological heritage puts the country in a world-leading position this research field and presents unparalleled opportunities for public communication and engagement. This panel discussion will present three case studies to contrast the challenges in communicating about human ancestors vs dinosaurs.

The announcement of the Homo naledi fossils (from the Cradle of Humankind World Heritage site), a collection of 15 individuals and 1 500 fossils, described as a new species of human relative by Professor Lee Berger from the University of the Witwatersrand and his team, made international headlines in September 2015. The research demonstrated that Homo naledi intentionally deposited bodies of its dead in a remote cave chamber, a behaviour previously thought limited to humans. A global campaign was launched on a very limited budget; the strategy relied on the combination of a great story, magnificent story-tellers, adoption of the principles of open access and the use of new technologies to ensure its success. It was also met with fierce criticism from some quarters. The planning, challenges, successes and impact of this campaign will be presented and discussed.

In 2013, a questionnaire was administered to 810 members of the general public visiting the Cradle of Humankind. The survey included questions on why they visited the site and whether their visit made them think differently. Visitors' impressions of their visit, and the 'take home' messages they acquired will be discussed.

Anusuya Chinsamy-Turan, a dinosaur palaeontologist, will reflect on engaging public audiences via dinosaur discoveries. While people are mostly eager to learn about these amazing creatures that dominated our planet for about 160 million years, many grapple with understanding the immense scale of geological time and the process of evolution. Social inequality and negative perceptions and stereotypes around science, as well as beliefs about who "can or cannot do" science, are further major obstacles.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Barcelona
Paper ID: 48

Scientists Involved in Science Communication Activities: Motivations, Enablers and Barriers

Paola Rodari
SISSA Medialab, Italy

Co-authors: Simona Cerrato, Valentina Daelli, Helena Pertot, Olga Puccioni

Why do scientists volunteer to be involved in the engagement of the public in science? What are the barriers that can prevent them from participating in the dialogue with society? What can be done to facilitate their participation? In this paper we present a case study of the Children University Programme at SISSA (Trieste, Italy), discussing the three years of experience and reporting the outcomes of a series of focus groups conducted with the young scientists who volunteered with the programme. Two types of motivations have arisen. The first is more personal, e.g. the desire to improve their own communication abilities or the mere curiosity for a new activity. The second is related to the perceived role of scientists in society: many volunteers feel the need to promote science and its importance in society, to have an impact on the public perception of science, and to plant the love of science in young people. After the experience, volunteers expressed the need to continue to improve their communication skills by participating in professional training courses, and agreed that science communication should become a standard part of all PhD training programmes . In order for the outreach to become more than a sporadic experience, a strong institutional commitment to promote, recruit, encourage, and support those who decide to commit is essential.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Barcelona
Paper ID: 107

University Researchers and Public Communication: What Influences their Intention to Engage with Non-Experts

Santiago Nicolas Canete
Paraguay

Co-authos: Andrew R. Binder

There have been many calls to the mobilization of scientists to engage meaningful interactions with non-experts, but research seeking to explain and predict participation in science communication is still developing. This project used an expanded version of the theory of planned behavior as a model to examine whether determined demographic, institutional and cognitive factors influence researchers' intention to participate in public engagement with science activities, such as giving public talks, writing popular science articles or talking to young students in schools. Data from a stratified random sample of researchers at North Carolina State University (n=404) were collected and subsequently analyzed through hierarchical multiple regression. Findings indicate that there are six significant independent predictors of scientists' intentions to engage with the public: past training, past participation, attitude, moral norm, managerial norm and role in a funded project. Based on these results, it is concluded that experience, liking, and accountability are the major factors influencing this type of behavior. Implications of these results for initiatives aiming at stimulating researchers' participation in public communication are discussed and overall recommendations are provided.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Barcelona
Paper ID: 169

An Open Research University

Richard Holliman
The Open University, UK, United Kingdom

Co-authors: Anne Adams, Tim Blackman, Trevor Collins, Gareth Davies, Sally Dibb, Ann Grand, Richard Holti, Fiona McKerlie, Nick Mahony, Astrid Wissenburg

In this paper I will discuss the findings from the Open University's RCUK-funded Public Engagement with Research Catalyst, 'An open research university', a project designed to create the conditions in which engaged research can flourish. The presentation will describe an evidence-based strategy designed to embed engaged research within the Open University's strategic planning for research and the operational practices of researchers. This programme of organisational change was informed by action research, working collaboratively with researchers at all levels across the institution to identify and implement strategies that work for them and the stakeholders, user communities and members of the public that engage with their research. Through a combination of surveys, interviews and interventions, we identified a number of challenges and proposed solutions to address them. For example, we found that researchers have a relatively narrow view of engaged research and the communities with which they interact and very few researchers strategically evaluate their engaged research activities. The presentation will document some of the interventions we introduced with the aim of broadening and deepening future researcher engagement, including a definition of engaged research and revised promotion criteria that include knowledge exchange profiles. In conclusion, I will argue that there is still a battle to be won for open and engaged research. For a culture of engaged research to be sustainable in the medium to long-term requires ongoing recognition and acceptance of its progressive value(s) by researchers, universities, funders and ultimately, policy-makers.

Strand: Trends and policies
Type: Panel
Date / Time / Room : 27-04-2016 / 13:15-14:30 / Valencia
Paper ID: 56

What's Missing in Science Communication? New Perspectives for Practice and Research

Sarah Davies
University of Copenhagen, Denmark

Co-authors: Maja Horst, Ulrike Felt, Alan Irwin, Brian Trench

Science communication is at an interesting moment. As science and technology are framed as the means that societies can innovate their way out of economic crisis, governments are investing more in communication activities that will, it is hoped, recruit workers into science, develop educated and supportive publics, and smooth relations between science and society. At the same time, European and national initiatives continue to emphasise the need for responsibility, responsiveness, and care in technoscientific development.

The key argument of this panel is that this period of growth and change in science communication requires similar renewal in the theoretical and conceptual approaches we bring to its analysis. Back in 2002, Mike Michael argued that even the most theoretically divergent scholarship of PUS tended to draw on the same basic concepts, including "humanism (an emphasis on the pure person), incorporeality (a neglect of embodiment), and discrete sites (science and the public are presupposed as separate entities)". Many years later, we think that science communication research could still benefit from an influx of different conceptual and disciplinary resources. How might the study of temporality, or futures, or organisations, or citizenship (for instance) help us critically analyse instances of science communication, and develop our activities as practitioners? What are the things our scholarship is not noticing, and how can we find methods to observe and reflect on these things?

The panel comprises four presentations, each reflecting on a particular perspective that is often 'missing' but which we think offers fruitful new lines of enquiry for research and practice:

Maja Horst: Organisations

Ulrike Felt: Time

Alan Irwin: Democracy

Sarah Davies: Silence

Brian Trench will then act as discussant, commenting on the themes and issues we have identified.

Strand: Digital age
Type: Panel
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Madrid
Paper ID: 60

The Digital Age of Science in the Middle East

Mohammed Yahia
Nature Publishing Group, Egypt

Co-authors: (proposed) Alexis Gambis, Alyaa Gad

Science has long been sidelined in most countries in the Middle East. However, a recent surge in interest in science has started, and science communicators are trying to capitalize on and support this. This can often be an uphill battle when the society has not been exposed to science for so long and when there is little support available to them from the public or private sector.

To overcome this, some science communicators are turning to the Internet to make use of the rapid rise of digital tools in the region, where the increase in Internet proliferation is one of the fastest in the world.

The session will explore the efforts of some science communicators to overcome different obstacles, ranging from social to cultural to economic, in order to communicate science to their audiences and do so in a format and way that is accessible to a general audience.

The proposed speakers are:

Alexis Gambis: The director of the successful Imagine Science Films in New York has brought the festival to the Middle East for the first time in February 2015 as Imagine Science Abu Dhabi. The festival highlights films and outreach efforts at the borderline between science and art.

Alyaa Gad: Based in Zurich, Switzerland, Alyaa is an Egyptian physician who has decided to turn to the Internet - using Twitter, Facebook and YouTube, to share medical information and break taboos by talking about culturally sensitive issues such as sexual health - attracting hundreds of thousands of followers and fans.

Mohammed Yahia: The executive editor of Nature Publishing Group will talk about NPG's efforts to spread science using the Internet. The portal uses professional science journalists to bring science to a wider audience, and uses multimedia tools - such as podcasts - to spread science in English and Arabic.

Strand: Digital age
Type: Workshop
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Kapadokya
Paper ID: 61

Digital Developments: Online Science Communication Courses for Training, Professional Development and Life-Long Learning

Marina Joubert
Stellenbosch University, South Africa

Co-authors: Anne Grand, Elizabeth Stevenson

This workshop will reflect on the opportunities and challenges of delivering online science communication courses for training, professional development and for the exploration of science communication as a life-long learning experience.

Universities are responding to the challenge of providing online education and professional development in the field of science communication in different ways. The University of Edinburgh offers an online MSc in Science Communication and Public Engagement; Stellenbosch University is pioneering online science communication teaching via short courses and the Science Communication Unit at the University of the West of England has recently completed the first online professional development course created to offer professional development for people new to science communication who want to develop their skills and knowledge in science communication practice.

These digital developments offer an exciting opportunity for science communication: What are the unique advantages of online science communication courses, how do we create appropriate and relevant content, how to deliver the content in novel, accessible and interesting ways, methods for marketing and recruitment of participants, participant retention, effective assessment and challenges for the future. Online education is a relatively youthful practice and its boundaries are more fluid unlike bricks-and-mortar education which are, to a very great extent, widely accepted across disciplinary and even geographical boundaries. It is highly likely that issues of quality - whether quality of design, materials, teaching or assessment - are important threads in the development of online courses.

Using materials and evaluation data from Stellenbosch, Edinburgh and UWE, this session will draw out the issues of learning to teach online, supporting online students and continuing to create new and the challenges of continuing to develop new and appealing courses and materials in an environment noted for rapid turnover and low boredom thresholds.

Strand: Ethics and arts
Type: Workshop
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Assos
Paper ID: 71

How to Make Your Audience's Neurons ROCK!

Wolfgang Chr. Goede
EUSJA, Germany

Co-authors: Maren Schuepphaus, Satu Lipponen, Marc Denis Weitze, Jens Degett, Viola Egikova, Dino Trescher

Scientific conferences are important international hubs for the exchange of new knowledge in research and technology. This requires high professional standards of science communication. However the majority of these conferences are being perceived as dull and little creative. Too monolithic with an emphasis on expert lectures and top-down panel communication, many times presented in loveless electronic formats with erratic data eruptions and information overkill.

As to an enhancement, especially in ever increasing cascades of digital applications, a new communication architecture is needed with more interactive formats, more humane touch and participants' inclusion. This session wants to help communicators and scientists, presenters and facilitators to inject more oxygenated blood into their public outreach acts.

We will show you around the whole canon of state of the art methods, where and how to apply and how to mix them in genuine dramaturgies and scenographies: storytelling and sociometric line-ups, fish bowls, world cafés, open space and barcamps, inverted panels, Pecha Kucha and speed dating, strategical murmur groups and science debates. The participants of this session will learn how to appreciate the audience as valuable resonators, useful pools of collective wisdom and helpful contributors with their own expertise.

If seminars and conferences want to be memorable and unique they empower the participants to become actors of their own, not by downloading the facilitators' or the participants own standard programs, but experimenting with new ones, "seeing, sensing, presencing and performing" (Otto C. Schamer). This, first of all, is an analogous challenge, but of course the session will also provide inspirations for the digital campus and thus fully zero in on the main focus of the PCST 2016!

A session organized by European Union of Science Journalists' Associations EUSJA, German Science Writers TELI, Network Public Spirit (Netzwerk Gemeinsinn)

Strand: Participation
Type: Paper
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Barcelona
Paper ID: 205

Future Interactions: A Serious Board Game for Future Technology Assessment

Steven Flipse
Delft University of Technology, Netherlands

Co-authors: Marco Rozendaal, Rienk Aalbers

Technology Assessment allows new technologies and innovations to be discussed by stakeholders from various domains (e.g. public, policy, science), usually in dialogue workshops with pre-determined future scenarios. This paper presents an evaluation study of a novel, enjoyable Technology Assessment (TA) tool in which (by contrast) we aimed to design a physical serious board game called 'Future Interactions,' in which scenarios are first built and subsequently discussed by participants.

In the physical game, stakeholders from various domains discuss values, opportunities and implications of future innovation during an afternoon session. Participants select sets of hexagonal 'play cards' from three stacks: technologies, areas of application, and societal values / issues. Participants can expand the existing set of cards on available empty play cards. By placing their unique set of connected cards in a beehive-shaped grid, participants present future technologies and discuss how these could interact with society.

We tested the game in three subsequent sessions: with students, to test the functionality of the tool; with technology and policy experts to see if discussions about future innovations occur; with experts only from the field of biotechnology, to see if the tool can be used to generate dialogue on a specific topic.

Results show that in all sessions, the future interactions of values, interfaces and technologies helped groups to create tangible common ground for a shared future vision of the development and implementation of innovations. The enjoyable story-telling approach of the participants helped to generate interesting discussions, relevant to all stakeholders, while all field experts allowed the discussion to remain realistic.

The game may have value in bringing together public stakeholders, scientists, policy makers and other non-governmental stakeholders in formal and informal settings, e.g. in public participation and engagement efforts, science policy agenda setting, and science cafes. We aim to further explore these possibilities.

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Barcelona
Paper ID: 182

Science Communication for Biodiversity Conservation-Useful Guidelines

Luz Helena Oviedo
Instituto Humboldt, Colombia

Colombia is one of 17 megadiverse countries in the world. Such biodiversity is associated to socio-cultural richness and current intense transformation processes. Given these complexities, it is suitable to ask; Are there any useful guidelines for communicating biodiversity conservation in a country like Colombia? What recommendations can be made for communication strategies aimed to foster biodiversity conservation? Alexander von Humboldt Biological Resources Research Institute presents communication insights to guide the design of communication products targeting non-scientific audiences. These products are intended to facilitate social appropriation of science focusing on biodiversity. Guidelines are established based on semi-structured interviews administered to researchers and collaborators, and theories from the emerging field of conservation psychology. Here we present four guidelines: a) connection, b) optimistic view, c) everyday life and d) human presence.

This is an ongoing research taking into account that communication for biodiversity is a long-term process and requires views from multiple angles. Research institutes and boundary organizations have plenty to contribute to science communicators (mass media, formal education, museums) based on their experiences and scientific knowledge on the current state of biodiversity. This proposal is a possibility to create networks on communication and biodiversity in megadiverse countries.

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Barcelona
Paper ID: 201

Expanding Expertise and Public Debates on Health and Nutrition

Esa Väliverronen
University of Helsinki, Finland

Science and technical expertise is challenged regularly in current debates on health and nutrition. Public debates on healthy living, lo-carb diet, fats and obesity involve new actors such as nutrition therapists, fitness coaches and lifestyle bloggers. These new actors present themselves as experience-based experts opposed to traditional scientific and technical experts.

Researchers in science and technology studies have analyzed this trend as the expansion of expertise. Expertise is evolving beyond traditional technically and professionally certified elites. These new, mainly experience-based experts do not always challenge the knowledge and instructions provided by professional science-based experts. However, they do challenge the knowledge basis and rhetoric of expertise. Through celebrating personal experience, individual choice and pleasure instead of population statistics and discipline they challenge the conventional argumentation used by scientific experts.

This paper draws on several recent case studies on health and nutrition including interviews, surveys and textual analysis of public discourse. These case studies focusing on science communication and dietary advice involve both health and food scientists and experience-based experts such as nutrition therapists, life style coaches and bloggers. The aim of the paper is to analyze the underlying mechanisms contributing to the expansion of expertise and particularly the role of the news media and social media in this process. Our preliminary argument is that the public media has become an important arena for the legitimation of these new forms of expertise.

Strand: Publics
Type: Paper
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Barcelona
Paper ID: 97

The Opinion Lab; Prototyping Science Exhibits for next Generation Science Communication

Marjoleine Georgette van der Meij
Drs. Ir., Netherlands

Co-authors: F. Kupper, J.E.W. Broerse

In the near future more dialogues between science and society are likely to take place. Therefore our next generation citizens need to feel equipped to engage in (amongst others) processes of deliberation on science and technology. Science learning spaces like science centers can take a role in preparing youngsters for this 'techno-scientifically deliberative citizenship'.

But what should the new informal science learning environments in the 'dialogue era' then look like? How to support young people in thinking and talking about technology, science, society, ethics and other complex topics in a profound yet low- or no-threshold manner?

In this session we present an original paper (submitted by spring 2016) about the Opinion Lab (OL). The OL is an exhibit prototype that supports parents and their children aged 8 to 12 in forming and opinion about synthetic biology, by means of several carefully designed playful tools such as a puzzle, audio, and visualizations. In the design we applied principles of frame reflection as well as opinions of synthetic biology that were found earlier in Dutch citizen dialogues on synthetic biology.

The paper to be presented in this session, is aimed at studying how the playful tools embedded in the informal science learning environment OL support parents and children in deliberation on synthetic biology, in order to inspire science learning environments of the future. In the session we therefore elaborate on the design principles of the OL as well as on findings of our prototype test sessions that were done at Nemo (Amsterdam) in 2015; we end with recommendations for other informal learning environment designers and learning facilitators on how to develop playful tools that prepare youngsters for deliberation and dialogues between science and society.

Strand: Participation
Type: Panel
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Truva
Paper ID: 335

Participation and Democracy

Bernard Schiele
University of Quebec at Montreal, Canada

Co-authors: Hester du Plessis, Joëlle Le Marec, Martin Bauer

The divulgation of the sciences has always been associated with the idea of the participation of the public. The first meaning of participate refers to a capacity - to possess a science culture - while the second signifies: "the act of participating". So it is a question of actions by the individual(s), a results-oriented recourse of means to an end. And hence the whole challenge of participation. The difficulty, in terms of mobilizing this science culture - namely, to draw on the potential of the knowledge and experience of participants - is that generally these competencies don't adhere to the same interests or attributes. This difficulty is exacerbated by the explosion of scientific knowledge, with its constellation of disciplines and generalized circulation of information.

These general questions only find their true answers in specific cultural and social contexts. In each, the concepts of "public", "divulgation", "participation", "perception", "competence" and "mobilization" must be rephrased in relation with the situations in which we try to apply them. This raises the question of the applicability of "universal" models to different contexts.

Thus, the aim of this session is to examine how are formulated and tackled with these questions in different socio-cultural contexts: Canada, South Africa, France and India. The proposed session will consist of four interventions, all of which, drawing from case studies, will present how are reformulated and problematized the questions of "information", "qualification" and "participation". This is why this session will not only aim to investigate, and thus to shine light upon, the structuring effect of the cultural and social context on the perception of the divulgation of the sciences, but also the gauging of the qualifications of social actors.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Valencia
Paper ID: 84

I don't Call Myself a Scientist: Understanding Why Self-Denomination as "Scientist" is Avoided by University Professors.

Adlane Vilas-Boas
Universidade Federal de Minas Gerais, Brazil

Co-authors: Tayline Silva Oliveira, Juliana Santos Botelho

One focus of surveys for public perception of science is the view about the profession of the scientist and how science is done. A recent survey in the US, for instance, has shown that under 40% of respondents know what scientists do. Several surveys in Brazil have also shown that only 12% of interviewees were able to point the name of a Brazilian scientist. The most cited names were of historically important scientists, such as Carlos Chagas and Oswaldo Cruz, revealing the public difficulty to recognize contemporary researchers.

Since, in Brazil, science is conducted mostly in universities, we speculated to what extent the academic community, by not coming forward as scientists for society, collaborates for persistency of this lack of information. In an attempt to evaluate whether the name "scientist" was used by university professors to introduce themselves, we conducted a survey with 20 professors from a Biology research institute, exploring forms of self-denomination in formal and informal situations. The results indicated that most of them do not make use of the term "scientist" to professional self-denomination.

In this work, we investigate the reasons why this occurs. In focal group discussions the use of 'university professor' instead of scientist was pointed as adequate since 1) that is the label of the position they were hired for; 2) 'scientist' is not a regulated job. As discussion progressed the impact of this attitude on the general public was recognized linking the lack of visibility of the scientist with low investments in science and technology in public communication of science. Other viewpoints and thoughts will be presented. Given that previous quality research in this subject is incipient, we believe that our study can shed light on the process of professionalization in science in emerging countries such as Brazil.

Travel grant by Fapemig to A. Vilas-Boas

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Valencia
Paper ID: 204

Collecting Evidence from Research-informed Practices: The Case of Floodplain Meadows

Gareth Davies
The Open University, United Kingdom

Co-authors: Emma Rothero, Richard Holliman, James McGinlay

We will report on our experiences of generating evidence of the impacts from engaged research and the import role played by 'blended professionals'. This reflects on participation in The Open University's Public Engagement with Research Catalyst, Engaging Research Seed Funding Award Scheme, based on the track record of engagement built up over a number of years through the Floodplain Meadow Partnership (FMP). FMP sit in a unique position functioning in the notion of a 'third place' between practitioners (floodplain meadow managers), policy makers (Natural England - the organization that manages the agri-environment scheme), and academic researchers (at The Open University). FMP aims for participating in the seed-funded award-scheme were to better understand the role site-specific advice played in translating the government-funded Higher Level Stewardship (HLS) agriculture environment scheme for benefiting and creating new species-rich floodplain meadows. Through 16 semi-structured telephone interviews (with site managers and an interview with a national representative of Natural England), the HLS scheme was found to benefit site management and that the input of FMP was invaluable in helping to determine management and support site managers by providing excellent technical advice and support. Moreover given the 'third space' FMP occupied, this relatively light-weight evaluation was also able to inform other stakeholder conversations, having a positive impact on their understanding of the meadows; helping to galvanize management proposals into action.

Strand: Scientists in PCST
Type: Paper
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Valencia
Paper ID: 204

A Blueprint for Assessing Societal Impact Through Public Engagement

Pedro Russo
Leiden Observatory, United Kingdom

Co-authors: Josh Borrow

We will report on our experiences of generating evidence of the impacts from engaged research and the import role played by 'blended professionals'. This reflects on participation in The Open University's Public Engagement with Research Catalyst, Engaging Research Seed Funding Award Scheme, based on the track record of engagement built up over a number of years through the Floodplain Meadow Partnership (FMP). FMP sit in a unique position functioning in the notion of a 'third place' between practitioners (floodplain meadow managers), policy makers (Natural England - the organization that manages the agri-environment scheme), and academic researchers (at The Open University). FMP aims for participating in the seed-funded award-scheme were to better understand the role site-specific advice played in translating the government-funded Higher Level Stewardship (HLS) agriculture environment scheme for benefiting and creating new species-rich floodplain meadows. Through 16 semi-structured telephone interviews (with site managers and an interview with a national representative of Natural England), the HLS scheme was found to benefit site management and that the input of FMP was invaluable in helping to determine management and support site managers by providing excellent technical advice and support. Moreover given the 'third space' FMP occupied, this relatively light-weight evaluation was also able to inform other stakeholder conversations, having a positive impact on their understanding of the meadows; helping to galvanize management proposals into action.

Strand: Museums and centres
Type: Paper
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Valencia
Paper ID: 468

Newton Liked to Read: Communicating Science While Reading

Marta Condesso
University of Aveiro - Fábrica Ciência Viva Science Centre, Portugal

Co-authors: Sofia Teixeira, Pedro Pombo

"Newton liked to read!" is a science communication project to promote in school libraries, dedicated to students of all ages, aming to approach: science centre and community, reading and science studying.

As a partnership between science centre: "Fábrica Centro Ciência Viva de Aveiro" and "Rede de Bibliotecas Escolares", a national school libraries net, this initiative creates annual programmes that associate literature reading events and science communication moments, by mixing books in the library with scientific experimental activities, that some part of some text introduces.

Main goals are: communicate science in a captivating and innovating manner, mantainning scientific rigor; simultaneously motivate younger audience to reading and science studying ; contribute to a more skilled, critical and informed citizenship.

Each session starts in an agreable ambience of peculiar "storytelling" mood and, with certain words from the text, advances to simple scientific concepts, experiments, constructions. This comes up naturally, proving itself to be a privileged way to communicate science and to enlarge school libraries horizons. A book, a video, an audio cd (with music, narrated texts) gives path to a scientific activity. Some subject in the story, an excert, a rhyme can promote a scientific exploration.

Methodology used in every Module (20 different modules, with different reading supports and exploring different scientific areas) concerns: kits conception (with: the book, all material needed to the scientific activity, scientific booklet with information to support the sessions) and workshops to prepare teachers to reply the sessions by themselves).

This paper will present implemented activities, results obtained, and some conclusions will be advanced, based on evaluation data.

Strand: Ethics and arts
Type: Panel
Date / Time / Room : 27-04-2016 / 15:00-16:15 / Mallorca
Paper ID: 392

Humour in Science Communication

Hauke Riesch
UCL STS, United Kingdom

Co-authors: Bruno Pinto, Matteo Merzagora, Rebekah Higgitt, Joan Leach

We've been laughing at scientists for centuries, from the pompous physicians of Moliere's The Imaginary Invalid to Jerry Lewis's Nutty Professor - a clumsy, socially awkward, cartoonishly bucktoothed and bespectacled nerd that helped create a lasting stereotype. But recently laughing *with* science has become a useful, and expanding, communication tool across many formats - from stand-up comedy (Bright Club, Brian Malow) and broadcasting (The Infinite Monkey Cage, The Big Bang Theory, Bill Nye), to popular science writing (But Seriouslyâ€¦, Brain Flapping) and online social media (ASAP-Science), and even the odd reference in scholarly literature.

The panel will discuss the merits of adding humour to science communication: a) it has the effect of humanising the scientist and the scientific process; b) humour is universal and brings people together; c) we feel smart when we feel like we're in on the joke (one of the barriers to effective engagement with science is that scientific terms can make non-scientists feel stupid).

The panel will also reflect on and critique ongoing examples of humour in science communication with reference to much longer and broader trends. Bright Club or the Infinite Monkey Cage might attract an audience with a pre-existing interest in and/or understanding of science but the Big Bang Theory exposes an image of science and academic research to a much broader audience. Does this have the potential to educate, attract children to STEM subjects, or perhaps solidify existing stereotypes?

The discussion will provide examples from hands-on projects and research, drawn together in a response and discussion.

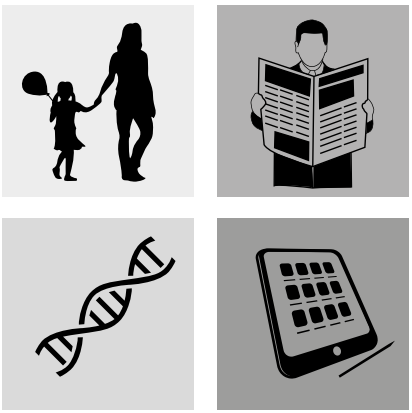
Proposed contributors:

Matteo Merzagora on the "Science: une histoire d'humour" exhibition,

Bruno Pinto, David Marçal, and/or Sophia Vaz, on the "Stand-Up Scientists" project (TBC, funding pending)

Oliver Marsh on humour in science-based social media,

Rebekah Higgitt on the history of science, humour, and satire,



PCST 2016

Public Communication of Science and Technology

April 26-28, 2016 / Istanbul - Turkey

ABSTRACTS

Thursday, 28 April 2016

Strand: Digital age
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 45

Characteristics of an Authentic Scientific Discourse in Social Networks: the Case of Drinking Water Fluoridation

Doris Asakly
Technion - Israel institute of technology, Israel

Co-authors: Ayelet Baram-Tsabari, Daniela Orr

This study explores ex<x>pressions of scientific literacy, user's positions and interactions between them in an authentic scientific discourse on social network. Further it examines how well do four models of science communication - Deficit, Contextual, Lay expertise, and Public engagement - describe this authentic online scientific discourse. The research setting is a content-driven Facebook group concerning fluoridation of drinking water. A topic that is controversial and timely, relates to the entire population, and raises broad discussions that are rich in scientific components.

In the first quantitative phase, about a thousand items (posts and comments) were analyzed by ex<x>pressions of science literacy such as inquiry and nature of science, socio-demographic information, attitudes towards Fluoridation and towards science in general. Inter-rater reliability test was carried out on 100 items with a result of 0.77 Krippendorff Alpha. In the second qualitative phase, two posts, including their comments and "shares" will be analyzed. The analysis will concentrate on the positions and interactions between key actors in the debates.

The key findings from the analysis carried out so far on 319 items from June 2015, show that men have a clear dominance in the discussion. The common features of science literacy were questions about the natural and material world, analysis and interpretation of data. Great similarity was found in the quantity of items which supported and opposed fluoridation (23.9% for, 25.6% against), women were found to be more likely than men to resist fluoridation.

Our results confirm findings from the literature that consistently show that gender influences perception and that women are more likely to have reservations about science and tendencies to doubt the promise of science.

Strand: Digital age
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 52

Science and Technology as a Popular Participatory Content. A Study of the "Popular on Youtube"channel

Bienvenido Leon
University of Navarra, Spain

Co-author: Mari Carmen Erviti

Internet has dramatically changed the relationships among the actors involved in science communication, developing a new participatory culture that allows individuals to take an active role in the production, dissemination and interpretation of cultural goods, following the "Do It Yourself" ideology (Jenkins, 2006).

Video is one of the content types of most interest to internet users. Globally, video traffic will be 80 percent of all consumer internet traffic in 2019, up from 64 percent in 2014 (Cisco, 2015). The first online videos set the standards for the format: "short, humorous and easy to access" (Kim, 2012). However, internet video has evolved and adopted a wide variety of narratives, some of which have become especially popular in the online universe.

Participatory culture is in the very essence of Youtube -a site where users upload and broadcast videos-, although since it was created in 2005, it has evolved to a hybrid model, where community participation joins commercial popular culture (Burguess and Green, 2009).

This paper explores to what extent science and technology are popular contents on Youtube, who are the most successful stakeholders of this new participatory science culture and what are the narrative strategies they use.

We conducted a content analysis of over 4960 videos, from the "Popular on Youtube-World" channel, within a period of one year. Results indicate that "Science and technology" is a relatively popular category, representing 12.47% of the videos in the channel -behind "Entertainment" and "Music"-, in which technology is the prevalent discipline (63.48%).

We also explore the narrative strategies developed by the most popular science and technology related Youtube channels, in order to adapt to the requirements of this participatory site. Our analysis indicates that the "amateur look", spontaneity and entertainment orientation prevail, not only in user generated content but also in professionally produced content.

Strand: Digital age
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Sevilla
Paper ID: 363

The Discourse of Medical Science In The Web: The Narrative Of Assisted Reproduction Technologies (ARTs)

Lucia Martinelli
MUSE - Science Museum, Italy

Co-authors: Lucia Busatta, Lucia Galvagni, Patrizia Famà, Arne Luehwink, Cinzia Piciocchi

Assisted reproductive technologies (ARTs) are an excellent laboratory for analyzing crucial aspects of women's and men's lives in a controversial interaction between technology and society, which involves bio-ethics, bio-policy, bio-economy, and bio-law. We are focusing on new arenas and different narratives used by various actors (medical professionals, patients, aspirant parents, gamete/embryo donors, surrogate mothers, etc..) involved in ARTs. Internet-based social networking sites are very popular tools for ARTs (actual and perspective) patients to share advices and experiences, for health professionals to provide information, and for private clinics to recruit patients. 'Timing' and 'aging' are particularly stressed in medical narrative. Among ARTs, autologous human oocyte cryopreservation to store women's eggs to be used later by the same donor for therapeutic or elective reasons (this latter known as social freezing) has been raising debates in social media after, in 2014, Facebook and Apple announced they would support egg-freezing for non-medical reasons for their female employees to better conciliate motherhood and careers. In general, egg preservation founds different endorsement if motivated by either 'medical' or 'personal' reason: the first as 'the only option' (thus meriting help) and the second as 'a life-style choice' (thus deserving skepticism or dissent). In advertisement strategies used by private clinics trying to attract perspective patients, narrative recurrently refers to 'aging', of both women and eggs ("stop the biological clock!"), as well as to a status quo which requires women to 'be ready' for something/somebody (as in the case of "women without a secure relationship", waiting for "Mr. Right"). Through the websites, frozen oocytes become polemic bio-objects which enable us to analyze the scientific discourse on ARTs. This study was funded by the Autonomous Province of Trento - Equal Opportunities and Work-life Conciliation Bureau, project "Towards a new 'family sayings': opportunities, responsibilities and rights in assisted reproduction technologies".

Strand: Ethics and arts
Type: Workshop
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Mallorca
Paper ID: 373

What do YOU Think Makes for Responsible Science and its Communication?

Kenneth Skeldon
University of Aberdeen, United Kingdom

Co-authors: Alexander Gerber (Germany), Heather Doran (UK), Shadrack Mkansi (South Africa)

This world-café session will challenge participants to think about what makes public communication of science and technology 'responsible' and how this could be implemented in communication and engagement practice.

In Europe, the concept of Responsible Research and Innovation (RRI) is increasingly embedded into research funding policy. The progression of this into science communication and public engagement is therefore a very interesting field, which has parallels across the globe.

Our session will be led by representatives from a recently funded EU project called NUCLEUS (New Understanding of Communication, Learning and Engagement in Universities and Scientific Institutions) involving 24 international partners from Africa, Asia and Europe.

Given the comparative, transcultural approach of the project, the panel is keen to stimulate discussion and share practice among the PCST community on the global perspectives of RRI. The session will encourage a global exchange of views from different cultural backgrounds and professions around the cross-cutting impact of science and its communication on societal, political and social challenges. Our world-café will focus on the six 'cells': Universities and Research Institutions, Public Engagement, Public Policy, Media, Civil Society and Economy, which we have identified within our NUCLEUS approach.

We are particularly interested in gathering views on how RRI can be interpreted as a transparent, interactive process by which societal actors and scientists become mutually responsive to each other. If approached robustly, the potential reward, for the debate, sustainability and informed discussion around scientific and technological advances in our society could be significant.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Aspendos
Paper ID: 69

Science Communication and Epistemic Justice

Fabien Medvecky
University of Otago, New Zealand

Science communication, as a field and as a practice, is fundamentally about knowledge distribution; it is about the access to, and the sharing of knowledge. All distribution (science communication including) brings with is issues of ethics and justice. Indeed, whether science communicators acknowledge it or not, they get to decide both which knowledge is shared (by choosing which topic they communicate), and who gets access to this knowledge (by choosing which audience they engage with). As a result, the decisions of science communicators have important implications for epistemic justice: how knowledge is distributed fairly and equitably. In this paper, I present an overview of issues related to epistemic justice for science communication, and argue that there are two quite distinct ways in which we can be just (or unjust) in the way we distribute knowledge as science communicators. I consider both these path and conclude that, at least on one of these accounts, science communication as a field and as a practice is fundamentally epistemically unjust. This leads me to consider suggestions to redress this injustice.

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 /
Paper ID: 91

Scientists Behaving Badly

Jesse Bering
University of Otago, New Zealand

Co-authors: Fabien Medvecky; Emma Curtin

Science communication is a deeply social enterprise. Scientific arguments, theories and data are not presented in a vacuum, but are delivered to the public by particular individuals with unique characteristics. Some of these characteristics involve ostensibly unrelated (im)moral or (un)ethical past actions. In theory, this information should not influence the audience's evaluation of the veracity of the individual's scientific claims. For example, knowledge that a scientist has engaged in a sexual indiscretion should not affect our assessment of his or her claims in an unrelated field (e.g. physics). In this paper, we present results from a series of controlled experiments demonstrating that this is not the case. All participants read about a debated scientific theory written by an expert in his field. In the main experiment, they were randomly assigned to one of three conditions: (1) morally good expert; (2) morally bad expert; (3) morally neutral expert (control condition). We hypothesized that academic training and experience should counteract these types of biases, and therefore tested both undergraduate students and professional scientists. Using both surveys and behavioral measures, we analysed the participants' judgement of the expert and his claims. We found that the audience's pre-existing knowledge of this person's (im)moral reputation significantly influenced their judgement of his work. Although this pattern of a distorted perception of the arguments was more pronounced among the undergraduate students, the trend was similar for the professional scientists. In a follow-up experiment, we refined the nature of the transgression to examine whether academic misdeeds (e.g., data fabrication) fared differently to moral offenses in the audience's scientific evaluations. We will discuss the implications of our ongoing research in this area for science communication. In particular, we ask how much-and what kind-of an expert's biographical detail should be communicated?

Strand: Ethics and arts
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 /
Paper ID: 400

Responsible Research and Innovation (RRI): What Role for Public Engagement Institutions?

Marzia Mazzonetto
VU University Amsterdam, ATHENA Institute, Belgium

In recent years, RRI (Responsible Research and Innovation) has become one of the most spoken acronyms by European Commission's representatives and several professionals working on EU financed projects in the field of Public Engagement with Science and Technology. But how is the role of institutions, ranging from science museums to science communication agencies, shaping within the difficult task of contributing to making scientific research more "responsible"? The presentation will focus on personal experience accumulated in 5 years of work on the field in one of the only European networks dedicated to public engagement (Ecsite, the European Network of Science Centre and Museums) as well as 3 specific case studies of innovative participatory processes in scientific governance. The first example concerns a EU-wide experiment of engaging citizens in shaping priorities in a specific field of research, as well as bringing new ideas oriented to better social innovation (VOICES). The second example focuses on a wide experiment of citizens and stakeholders involvement in influencing better policies for oceans conservation as well as fostering better empowerment of citizens towards oceans protection (Sea for Society). Finally, the last example concentrates on a sharing experience initiative of several European institutions - with a long lasting experience in Public Engagement - aimed at developing useful tools to make available to whomever (from educators to policy makers, scientists and civil societies) would like to embark in the RRI mission (RRI Tools). Finally, special attention will be dedicated to not only pros and cons of the above-mentioned examples, but also to how the institutions involved have benefited (or not) from them, how they have eventually seen their role shifting from "classic" public engagement instruments to active actors in the RRI process, and in some cases how have their actions been perceived by the scientific community and business industry.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Valencia
Paper ID: 40

Consolidated vs. Fragile Science Communication Culture: A Comparison of Science Coverage of the BBC and Israeli Media

Yael Barel-Ben David
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Co-author: Ayelet Baram-Tsabari

The case of science communication in Israel is a very perplexing one. On the one hand, Israel is positioned 22nd in the world regarding its scientific research and publications (Getz et al., 2013). On the other hand it was classified as having a "fragile" science communication culture (Mejlgaardet al. 2012). One aspect of this categorization is science journalism infrastructure that affects the science and technology coverage in the daily news media reaching the public.

Comparing this aspect between Israel as a case study of a "fragile" science communication culture and the "consolidated" culture of the UK, may highlight differences between the two cultures, and may hint for steps needed in order to advance from one category to the other.

A systematic examination of the scope and characteristics of science and technology coverage in the Israeli news media was conducted over a period of six consecutive months. STEM items published in four news media (newspapers, news sites, TV and radio news shows) were collected and cataloged according to a codebook based mainly on Mellor's (2011) BBC study, which was used for comparison, regarding the BBC as a role model for science coverage a "fragile science communication culture" should aspire to.

During 183 days a total of 1,064 items were collected and cataloged from 20 media sources. Findings point to similarities to findings from the BBC study in scientific fields covered (mostly medicine and life sciences) and focus on local research. The main difference was found in regarding to the frequency of science coverage between the two countries. The overall frequency of science items comprised a total of 1.8% of the news published at that time in Israel. These numbers are much smaller than the 4.6% reported in Mellor's BBC study.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Valencia
Paper ID: 81

Scientific Evidence and the Media: Investigating the Journalistic Intention to Represent Scientific Uncertainty.

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Co-authors: Georg Ruhrmann

When reporting on science, journalists automatically indicate scientific evidence, as they frequently include statements referring to the certainty and/or uncertainty of research findings (e.g., Heidman & Milde, 2013). Scientific uncertainty is a central feature of scientific research (Popper, 1960), but with respect to Fleck (1935), scientific uncertainty is only part of expert's circles (= scientists); when knowledge is transferred from experts to laymen, for instance by the mass media, then information get more simplified and certain. This could explain why reporting on science often lacks statements referring to scientific uncertainty (e.g., Caccioatore et al., 2012; Dudo, Dunwoody, & Scheufele, 2011), which can be crucial for laypeople who want to make elaborate decisions (e.g., Jensen, 2008). However, content analyses also found that in some cases uncertainty is a strong characteristic of media's reporting on science (e.g., Ashe, 2013; Friedman & Egolf, 2011). As a result, journalists do not exclusively downplay scientific uncertainty; that is why this paper is interested in investigating the predictors of the journalistic intention to represent scientific uncertainty. Investigating these predictors is important, because recent science communication concepts (e.g., public engagement with science), among other things, explicitly ask for more science journalistic reporting on scientific uncertainty.

To identify the predictors, a telephone survey was conducted with a representative sample of German science journalists (n = 202). The dependent variable in this investigation is the journalistic intention to represent uncertainty; independent variables were drawn from the research literature (e.g., Stocking & Holstein, 2009) and from qualitative interviews with science journalists (AUTHORs).

Preliminary analyses showed that the journalistic intention to represent scientific uncertainty is influenced by the coverage of other media, individual understandings of scientific uncertainty, perceived expectations of the audience, and past behaviour of depicting scientific uncertainty. Further analyses will be completed and presented at the conference.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Valencia
Paper ID: 96

Dealing With Uncertainty In The Reporting On Neuroscience: A Study Of Journalistic Decision-Making

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Co-authors: Hans Peter Peters

Science journalism has the reputation of being an exaggerator of cognitive or interpretive claims from the sciences. This assumption is based on numerous content analyses which typically found that journalism rarely refers to ambiguity or fragility of knowledge claims. Scientific uncertainty is obviously not attractive to journalists.

Content analyses have the disadvantage that journalistic decision-making processes remain out of focus. Accordingly, they cannot answer the question of how the journalistic representations have emerged and why there is little attention to uncertainty.

Using a case study approach, our study addresses exactly these questions reconstructing in detail the production of 21 journalistic products about neuroscience. The investigation of each case is based on the journalistic product, in-depth interviews with the journalist and his/her main scientific sources, and records of the enquiry-talks between journalist and his/her scientific sources. The analysis aimed at inventorying the ways in which scientific uncertainty becomes an issue for journalistic decision making or not.

The study draws a detailed picture of how journalism handles uncertainty. It becomes apparent that in some cases journalists do not even perceive the ambiguity or fragility of scientific claims since sources do not proactively point to it. However, in every case in which scientific uncertainty entered the perceptual field of journalists, they allowed for it in their products in several ways: For example, they contrasted one claim with a conflicting other (he says - she says), they leaved uncertain claims out, or they structured their stories in specific ways intending to avoid misinterpretations by their audiences.

We conclude from the study that the currently dominant problem definition with respect to journalistic dealing with scientific uncertainty needs to be complemented. Neglect of scientific uncertainty in journalistic products is not only a problem of journalistic reporting practices but also a problem of scientists' information practices.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Valencia
Paper ID: 340

Pseudo/Science Communication In Mass Media

Alexandre Schiele
Paris-7, France

Pseudoscientists and pseudohistorians directly engage the non-specialist audience by imitating science communication while the success of TV series such as In Search of (1977-1982) and Ancient Aliens (2010-) and its many derivatives on mainstream networks bears witness to their mastering of the codes of mass media communication better than scientists or even communicators themselves. However, they directly appeal to the very common sense that the increasing complexity of science has long outgrown while heavily relying on drama. Yet, paradoxically, their striving existence is proof of the legitimacy of this form of communication above others: the difference between creationism and intelligent design is at the level of the forms of communication.

However, a new troubling trend is emerging: works of fiction that are not clearly advertised as such are shown on popular science networks with the same format and editing as their trademark science documentaries. How to account for such a trend on mainstream networks? The thesis that will be defended is that the impossibility to distinguish between science and pseudoscience is the very result of the development of the codes and rules of modern mass communication. This communication will present the analysis of some popular pseudoscience/pseudohistory TV series aired on popular science networks with the aim of helping science communicators refine the format of popular science communication and distinguish it from its pseudoscience equivalent.

Strand: Participation
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Barcelona
Paper ID: 65

GIOCONDA: Involving The Youth In Environmental And Health Policies

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Co-authors: Liliana Cori, Fabrizio Bianchi

Oral Presentation - Federica Manzoli IFC - CNR

Building and fostering the dialogue among young citizen and policy makers in the field of environmental health is the core of GIOCONDA (I GIOvani CONtano nelle Decisioni su Ambiente e salute - the Youth Count in Decisions on Environment and Health, LIFE13 ENV/IT/000225), a European project aimed at realizing an institutionalized participation of the youth in the local decision-making.

Challenging the role of science communication, GIOCONDA is conceived as a multidisciplinary project. It combines two monitoring systems: one based on the environmental data collection on air and noise pollution in the project's sites, measuring the "real" risk; the other based on the risk perception of teenagers in relation to these environmental problems, locally situated.

Starting from a network of municipalities, schools and other local authorities in four locations in Italy (Napoli, Taranto, Ravenna and Valdarno), characterized by different environmental pressures and local cultures, the project's staff applied the two monitoring systems and developed a series of communication, engagement and social research activities. The result is the GIOCONDA's governance tool, in the shape of an experimental online platform.

In the presentation, we will show the results of the project focusing on the complex topic of environment and health, often controversial in science communication, and how it was used to foster the youth' scientific citizenship. We will show: the five steps used to establish a dialogue among schools, local administrators and other stakeholders; the results of the environmental monitoring and risk perception, used as research-action tools; a first draft of the GIOCONDA's experimental platform as a place for dialogue and innovative governance including young citizens.

The usage and communication of scientific data all along the process resulted in the effective promotion of an evidence-informed decision-making at the local level and helped the involvement of the project's target.

Strand: Participation
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Barcelona
Paper ID: 211

Mass Experiments In Swedish Schools - Encouraging Scientific Citizenship In Future Generations

Lotta Tomasson
VA (Public and Science), Sweden

Co-author: Dick Kasperowski

Since 2009 the Swedish non-profit association Vetenskap & Allmänhet (Public & Science, VA) has been coordinating an annual mass experiment as part of ForskarFredag - the Swedish events held on European Researchers' Night. The mass experiment is a citizen science initiative through which thousands of Swedish pupils from preschool to upper secondary school contribute to the development of scientific knowledge. The aim is to stimulate scientific literacy and an interest in science among young people while generating scientific output. In the "Tea Bag Experiment" of 2015, scientists were helped by 250 school classes to study the decomposition of organic material in soil and how this process is affected by climate change. Using a newly developed standardised method, the pupils buried a set of tea bags before the summer break and then dug the tea bags up when school started again in the autumn. By measuring the weight of the tea bags before and after they have been in the ground, the decomposition characteristics of different soils could be studied.

As a citizen science initiative, the mass experiments are primarily an example of a conceptualisation of citizen science where non-scientists assist scientists by gathering data. However, it could be argued that the project could stimulate other forms of active scientific citizenship as well, by stimulating discussion on the role of science in addressing important societal issues, and by contributing to the students' developing an awareness of their own ability to play a part in the creation of important knowledge.

The presentation will discuss the mass experiments as a possible method of fostering different forms of scientific citizenship.

Strand: Participation
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Barcelona
Paper ID: 384

Research Competence And Scientific Literacy In A Digital Age

Alexandra Schebesta
Open science, Austria

Co-authors: Andrea Petschnig, Brigitte Gschmeidler

In our modern digital world information gathering about different topics is largely done via internet. This particularly concerns young people who are especially familiar with mobile devices and the use of the internet. However, they are not familiar with critical examination of websites and content to the same extent. Thus, fostering this aspect of scientific literacy was the major goal of our project â€žPseudo? Or Science?". We instructed high school students in workshops how to systematically search for scientific literature in the internet and how to critically review the findings. Scientific content concerns everybody, as we are confronted with it through media all the time.

Using examples of actual headlines such as "Can lack of sleep make you fat?" we went through a whole internet research process with the students. Our training included the definition of the right keywords, the use of different databases for the internet search and defining criteria for the critical evaluation of the content. Especially teachers and students have an increased need to search for appropriate scientific literature in the internet in order to write scientific essays at school. Our experiences and evaluation from feedback forms returned showed that teachers as well as students are not very confident, neither with the selection of the right keywords nor with evaluating the search results regarding their scientific validity. The information from our workshops was thus very much appreciated.

The need for such trainings was confirmed by the high demand from teachers who wanted to train their students. In response, we realised a follow up project and offered teacher trainings on the same topic in 2015. We will present the concept and findings of both projects and also discuss the difficulties we had to overcome.

Strand: Scientists in PCST
Type: Panel
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Efes
Paper ID: 75

Online Engagement Across Five Continents. How Does I'm A Scientist Compare And Contrast Around The World?

Shane McCracken
Keep on Questioning, United States

Co-authors: Tristan MacLean, Alun Davis

How does a successful online science engagement program originating in the UK translate to other countries? Online engagement can cross borders and breakdown barriers between scientists and the public, but implementing a program within different cultural, economic and regulatory environments requires adaptation on the ground. I'm a Scientist, Get Me Out of Here! has been highly successful in the UK since its launch in 2008. This success has seen the program adopted around the world with varying degrees of growth and sustainability. I'm a Scientist, has been launched in seven countries; UK, Ireland, Kenya, Malaysia, Spain, USA and Australia, with Vietnam being the next to join, and has involved participants from many more locations.

I'm a Scientist is a free online event where school students and members of the public can meet and interact with scientists. It's an X Factor-style competition between scientists, where students are the judges. Students challenge the scientists over fast-paced online text-based live chats. They ask the scientists anything they want, and vote for their favourite scientist to win a prize of Â£500 to communicate their work with the public.

What makes I'm a Scientist so unique and successful? What can we learn from its implementation in diverse settings? The panelists will discuss the differing motivations and drivers for establishing I'm a Scientist in their home countries as well as the challenges and adjustments they have made to the program to tailor it to their circumstances. Find out how the carefully designed format is so effective at developing the communication skills of scientists, inspiring children and supporting teachers and how digital tools enable unparalleled evaluation and analysis of interactions between scientists and the public. The panelists will be answering audience questions about the program and you will be able take part in one of our online live chats with panel members based in their home countries.

Strand: Publics and Participations
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Assos
Paper ID: 267

Public Confidence In Science - What Does It Mean?

Maria Lindholm
VA (Public & Science), Sweden

Since 2002 the Swedish non-profit organisation Vetenskap & Allmänhet (Public & Science) has, in collaboration with the SOM Institute at the University of Gothenburg, been conducting an annual attitude survey to measure the Swedish public's views on science and researchers. Through the years the project has contributed to new knowledge on, among other things, factors that influence public confidence in science and the correlation between the public's confidence in science and its willingness to invest public funds in different research fields.

As part of an ongoing study, in late 2015 we conducted a series of focus group interviews with members of the Swedish public in order to explore the views of these groups in more depth and from a qualitative perspective. Emphasis was put on the concept of confidence in science and researchers in different fields, what the factors are that affect it, and what the concept means to different groups. Preliminary analyses of the results show a high confidence in science and researchers, albeit lower for researchers as a professional group than for science as a concept. There is a distinct focus on, and high confidence in, medical research, especially in groups with lower education levels. These groups also tend to have a vague conception of, and lower confidence in, the social sciences. Trust levels are the lowest for nutritional research, in part due to news fatigue caused by frequent and contradictory media reports of scientific dietary advice. Nutritional research aside, trust levels are generally higher for research areas that people feel that they can relate to and understand.

The focus group study will be complemented with in-depth interviews with researchers and journalists during the first months of 2016, and the results from the study will be presented for the first time at PCST in 2016.

Strand: Publics and Participations
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Assos
Paper ID: 444

Visitors To The "Cradle Of Humankind', South Africa: Motivations And "Take Home Messages'

Anthony Lelliott
University of the Witwatersrand, Johannesburg, South Africa

The 'Cradle of Humankind' was declared a World Heritage Site in 1999 because of the nature and extent of the fossil hominins discovered there. Currently, the visitor centres receive up to 250,000 visitors per year, comprising local and international tourists and school excursions. The objectives of the study reported in this paper are as follows:

1. To find out what motivates people to visit the Cradle of Humankind.

2. To ascertain what aspects of the visitor centres people consider were the most influential or significant for them.

Data collection for the study consisted of a survey of the general public visiting the two visitor centres in the Cradle area. The survey questionnaire included questions on why they visited the site, whether their visit made them think differently, and what impressions they would take home with them. A total of 810 'general public' visitors were surveyed in 2013, the data entered in a spreadsheet and analysed statistically and qualitatively.

Preliminary findings suggest that the most prominent motivations for visiting the 'Cradle of Humankind' were reference to palaeontology and evolution; a 'day out'; learning and interest. Up to half of the visitors think differently about human origins after their visit. The participants seem to think differently about: evolution, human origins and the concept of deep time.

Over 80% of visitors at both centres considered that their visit had made an impression on them. At Maropeng, 25% participants referred to the boat ride. At Sterkfontein, 42% of participants referred to the caves and the underground lake. It would appear that visitors can both enjoy themselves (experience of the boat ride and the caves) as well as learn about issues such as human origins, evolution, and the concept of deep time.

Strand: Publics and Participations
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Assos
Paper ID: 57

Participation and Dialogue In Dutch Science Cafés. Perspectives From Participants And Organisers

Anne M. Dijkstra
University of Twente, Netherlands

Engaging public in science issues has attracted considerable attention both in policy making as well as in academic studies. Science cafés offer a place for information, discussion and engagement for all who are interested in science and it's broader implications for society. Characteristically, they are not meant to formally influence policy making or scientific research. Nevertheless, why do people attend science cafés and how do science cafés contribute to engagement in the changing science-society relationship? In this paper, science cafés - still under-theorized and under-researched (Davies, 2009) - as a popular means of informal science dialogue were explored with the aim to gain more understanding of the science-society relationship. Both perspectives of participants of science café meetings and those of the organisers and moderators of science cafés were analysed. This multi-method approach, with both quantitative (questionnaire) and qualitative data (interviews), allowed a richer analysis and deeper understanding of science cafés and citizens in various roles and levels of engagement with science. In addition to descriptive information about the organisational aspects of science cafés, key findings show that café participants are interested in the topics offered and enjoy the friendly atmosphere. Organisers and moderators also learn from the meetings and, amongst others, aim to enhance a broader discussion about science and technology. According to them, the rising popularity of science cafés may come from the possibility to critical reflect on new developments in science and technology. Science cafés can bring people from both worlds together. In these informal venues people learn to ask questions and debate issues, which may contribute to trust in science as well.

Strand: Publics and Participations
Type: Paper
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Assos
Paper ID: 344

Sense of Birth: A Itinerant Interactive Exhibition For Social Engagement And Public Health Changing.

Bernardo Jefferson Oliveira
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Co-authors: Sonia Lansky, Verona Campos, Kleyde Ventura, Amelia Augusta Friche, Rejane Spitz, Newton Gamba Jr

Brazil has the worst global rate of C-section, far beyond the WHO recommendation, recognized as a serious public health problem. This is a consequence of a complex set of factors such as financial and medical interests, gender bias and the disseminated mixing culture of consumerism, convenience, loss of autonomy and lack of information. To discuss this problem and try to contribute to change this scenario we developed an interactive and itinerant exhibition called Senses of Birth,

Structured in four containers, it involves the visitors in a recreational and emotive manner. Initially the visitor sees himself pregnant, goes through a caricatural store that explores birth as a business, watches a childbirth controversial dialogue held by different characters, and finally goes through a emotive sensorial experience of a birth.

The use of containers allows mobility and assembly in public places (squares, parks and shopping centers) providing easy access. Besides that and its gratuity, the exhibition uses different media and languages, making it fun and interesting to audiences with different cultural habits.

Using multi-methodological strategies, the research about the public perceptions shows a high proportion of people who went for the first time to an exhibition, and, returned bringing friends and relatives. It also reveals how the exhibit provides significant and provocative experiences of science communication to change the current situation.

Another surprising result is its social mobilization effect. Either by the burning thematic and approach or by the meeting agenda with professionals from the pubic primary health care clinics, participation of various NGOs, doulas and midwives associations, feminists movements and forums of discussions of students and health professionals the exhibition created and catalyzed meetings and social mobilization, strengthening existing movements, favoring the articulation of local groups, public policy, raising awareness of rival projects of different social representations in a public sphere.

Strand: Publics
Type: Panel
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Truva
Paper ID: 63

Attitudes to Science East And West - Structures And Changes In The Long Run

Martin Bauer
LSE, United Kingdom

Co-authors: Ahmet Suerdem (Bilgi University); Rajesh Shukla (Delhi); Li Yuh-Yuh Luke (Taiwan)

This panel addresses trends in and evaluating the effects of public communication of S&T in society.

National surveys of attitudes have been conducted since the 1970s; this effort is a global one, but with little comparisons beyond headline figures. Longitudinal evidence is now available which deserves the attention of PCST scholars and practitioners. This panel will address three questions arising from such comparisons of attitudes:

(1) Can we assume a universally stable structure of attitudes to science? Probably not. Ahmet Suerdem (Istanbul) and Rajesh Shukla (Delhi) will examine this question over 6-waves of Eurobarometer surveys since 1989 across 32 European countries, and three nationwide Indian surveys (2005, 2008 and 2015) and suggest that we need to consider different structures of attitudes for different contexts (1D, 2D or 3D).

(2) Considering longitudinal evidence in any one context, what are the main shifts? Yuh-Yuh Li (Kaoshiung) will examine changes in the context of Taiwan since the beginning of the new millennium, when the Taiwan attitude series started. The Taiwanese surveys are comparable to Eurobarometer, but in addition explore interesting issues that are locally specific to Taiwan.

(3) In the long-run, generational cohorts influence on how people relate to science: what is the evidence? Having longitudinal measures across 12 EU countries in Eurobarometer, 1989-2012, allows to create the cohort variable in contrast to biological age. Martin W Bauer (LSE) will examine the generation question of science attitudes in EU12 states and compare the evidence as to a consistent cohort effect controlling for period and level of education. In some countries the intensive engagement with science culture seem to be vested in the post-war and Baby boom generation, in other countries, this orientation is the privilege of the youngest generations.

The panel will address these questions also within a view of an EAST-WEST perspective:

Strand: Trends and policies
Type: Workshop
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Kapadokya
Paper ID: 170

Practical Considerations: Research Informing Practice in Public Engagement (and vice versa)

Tiffany Lohwater
AAAS - American Association for the Advancement of Science, United States

Co-author: John Besley

How do scientific institutions (and scientists) benefit from research in public engagement and science communication? How can institutional and individual goals and strategies for practicing public engagement be better informed by research? How can research goals and strategies (and researchers) be better informed by practitioners of public engagement and scientists engaging with the public? How do we evaluate success and failures?

These questions are of primary interest to the AAAS Center for Public Engagement with Science and Technology. The Center provides scientists and scientific institutions with resources for having meaningful conversations with the public; convenes scientists, public engagement researchers, and public engagement practitioners; and facilitates dialogue between scientists and the public to discuss the benefits, limits, and implications of scientific knowledge.

The proposed workshop aims to foster a discussion about models and tools for collaboration between scientists involved in public engagement, researchers studying engagement, and practitioners. Workshop participants would discuss the growth of a Public Engagement group on Trellis, a free online platform developed by AAAS and currently in beta-testing. Trellis will open more broadly to members of the scientific community in early 2016. The Public Engagement group on Trellis aims to bring together scientists interested in or involved in public engagement with practitioners and scholars involved in efforts to more clearly link theory and practice. A primary objective for the workshop will be to invite participants to review Trellis and discuss how this tool might be used to share information and enable collaboration, as well as suggest additional models and tools.

Strand: Trends and policies
Type: Panel
Date / Time / Room : 28-04-2016 / 10:45-12:00 / Madrid
Paper ID: 270

Science Criticism - What Is It, And Why Do We Need It?

Brian Trench
Dublin City University, Ireland

Co-authors: Declan Fahy, Alan Irwin, Michelle Riedlinger

French physicist and science-essayist Jean-Marc Lévy Leblond argued twenty years ago 'The Case for Science Criticism'. In one of his many explorations of what it means to consider science in and as culture, he observed that science lacked a 'critical function'. This function is assumed to be an integral part of, for example, the performing and visual arts, literature and music. The mediation of these aspects of culture, and their relation with wider society, is effected and shaped by critics and criticism. Critics help audiences situate new work and make sense of it.

Is there something about science that makes criticism of this kind impossible? Is the absence of science criticism a hindrance to science's deeper immersion in general culture? Such questions are still relevant two decades after Levy Leblond explored them. His essay has now been published for the first time in an English translation and is thus available to a wider readership (in M. Bucchi and B. Trench, eds. Critical Concepts in Sociology: Public Communication of Science, an anthology due for publication in late 2015).

In a 1980s book entitled 'The Science Critic' Maurice Goldsmith argued for "a new type of communicator", and neuroscientist Steven Rose has continued in that tradition, writing critically on biological determinism.

Outside science, feminist authors have criticised aspects of scientific research, including military and reproductive technologies, as male-oriented. Activist groups have criticised some research as environmentally or ethically irresponsible. However, a comparatively small number of science communicators and writers have taken on the critic's role; these include authors Phillip Ball and John Horgan.

The European Commission is promoting the concept of 'responsible research', and holding science to standards of 'responsibility' is itself a critical action. But where might science criticism find a platform?

Strand: Digital age
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Assos
Paper ID: 9

Questioning the cyber-utopia: Skepticism in Digital Social Networks

Adan Lerma
Universidad Nacional Autonoma de Mexico, Mexico

Digital Social Networks have breached geographical barriers, but not ideological ones because its intrinsic biases prevent online intergroup communication, also known as cyberbalkanization. Confirmation bias, a country's social situation, English as the dominant online language or the web's architecture can impede or break down the diffusion of information. These notions are important for the science communication community in general and Skeptics in particular.

Skepticism has actively fought against pseudoscience, and in the past couple of decades it has flocked to online platforms assuming that its velocity to transmit information, low production costs and vast audiences favor better communication of scientific knowledge and the dangers of pseudoscience. This investigation questions this cyber-utopian perspective and analyses the cognitive, social, cultural and technological biases that can stop communication between communities in digital social networks.

While it might be true that information spreads faster and that it's cheaper to communicate, the number of audiences hasn't necessarily increased through digital social networks. Research has proved that social networks motivate communication among the members of a group, but Skepticism tries to avoid preaching to the choir by reaching those outside the community: people that are not aware of the harm produced by pseudoscience. It has been assumed that through social media this can be achieved but it is only by understanding the biases that complicate the diffusion of information that Skeptics and science communicators can be more effective.

This paper is the result of a two years master's degree research program in Philosophy of Science at Mexico's National University. The author has completed the program and is now pursuing a PhD on the same topic.

Strand: Digital age
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Assos
Paper ID: 106

PCST In The Arab World: The Rationality War Online

Boulila Mustapha
Institute of Press and Information Sciences (IPSI), Tunisia

In the digital age, social networks fill the PCST void in the Arab world. Social networks have made science more democratic today than ever before "Arab Spring". In fact, there appeared since 2012, dozens of arbic scientific pages which have attracted millions of followers. The twenty-third facebook page in our ranking has above 100000 fans, exceeding the number of readers of all the Arab scientific paper magazines combined. Despite the war in Syria, some 50 young people from Damascus launched a scientific page that reached more than one million fans. In the same way, the number of fans of National Geographic Abu-Dhabi channel exceeded 55 millions surpassing its US counterpart, reflecting the Arab public's thirst for science.

In the traditional mass-media, para sciences dominate the scientific discourse in the Arab world, with support of the current of scientific miracles in the Koran, and that of the Intelligent Design of the universe, through the conservative control of the traditional media, where we find only one scientific television channel against 112 religious ones.. And 20% of publishing houses and printing presses specialized in printing yellow books. Scientific and environmental journals are issued only in 5 out of 22 Arab countries, where 13 magazines have, combined, a circulation of one hundred thousand copies per month for a readership of 350 millions people, that is less than 1% of the US share..

There is a wave of growing skepticism about many scientific realities, such as disbelieving the rotation of the Earth around the sun, the prohibition to travel to Mars, the reject of the theory of evolution, and the call of "Salafist movement" for drinking camel urine as a drug in accordance with the Prophet's alleged medicine. Science is at the center of the battle of modernity on the southern bank of the Mediterranean.

Strand: Digital age
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Assos
Paper ID: 46

Social Variables and Credibility Assessment of Scientific Content on Social Networking Sites

Arnon Hershkovitz
Tel Aviv University, Israel

Co-authors: Arnon Hershkovitz, Tsahi Hayat, Nagat Badarneh, Remah Faroje, Nihay Hamdan, Eddy Leventman, Aviad Rotboim

Credibility assessment of scientific information is key to people's attitude towards, and acceptance of, science communication. Despite the central role social networking sites (SNSs) play in users' content consumption-scientific content included-the credibility assessment mechanisms utilized within these platforms are understudied.

This paper reports on five pilot studies exploring "social variables" (e.g., number of Likes or comments on Facebook, or information poster identity) and how they affect people's credibility assessment of scientific information posted on SNSs. These studies are drawn from theories of online information assessment, specifically the Prominence-Interpretation theory and the Elaboration Likelihood Model.

The five studies included both young and adult populations and used different methodologies, including questionnaires, eye-tracking data collection, and SNS data collection using NodeXL. In each group, participants were presented with scientific content, and were asked to rank its credibility and to explain their choice. The social variables appearing on these statuses were manipulated.

In Studies 1-3 (N1=90 sixth-grade students, N2=91 fifth-grade students, N3=89 tenth-grade students), statuses were shown to two groups. For one group, the statuses had only few Likes, for the other - thousands of Likes. In study 4 (N4=19 undergraduate students), participants were shown a positively- and a negatively-designed statuses (differed by number of Likes/Comments/Shares, user name/profile image, etc.). In Study 5 (N5=88 undergraduate students), a status was shown to control and experiment groups, along with a fictitious figures of people who have favorited/retweeted it; in the experiment group, three of these figures were replaced with the participants' Twitter followees.

In all cases, the positively/personally-designed statuses were statistically significantly associated with higher credibility assessment ranks, compared with the other statuses, except for the cases in which content was known to the participants. These results have important implications for both science communicators, consumers, and for broader understanding of credibility assessment within SNSs.

Strand: Digital age
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Assos
Paper ID: 148

Singing From The Same Sheet - Social Networks For Fusion Communication

Petra Nieckchen
EUROfusion, Germany

Co-authors: Ana Delicado, Ana Prades

International collaboration is a common feature, if not a requirement, of today's multidisciplinary research. In this context European funded research on the realisation of fusion energy is no exception.

What is special or might even be unique in fusion research is frequent, international collaboration on the level of communication. The FuseCOM network comprises fusion communicators representing 26 European member states plus Switzerland and therewith 29 research organisations.

The quest for a new, abundant energy source is a concerted effort funded by Euratom and facilitated by the EUROfusion consortium. Ideally, all participating parties sing from the same sheet when communicating on key aspects of the research in their respective countries and languages.

What are the necessary ingredients to achieve coherent messages across borders, institutes, and mentalities? The short answer is as simple as providing means to communicate and facilitate regular interaction and training. The rest is ambition, believe in the project, and making good use of the digital tools.

This paper presents not just a description of the FuseCOM network. It also analyses the functioning of the network, based on a collaboration between the communication network and sociologists from the socioeconomic studies group, also funded by EUROfusion. This paper will thus present exploratory findings of a group exercise carried out with network members during the annual meeting. Through task-oriented research methods such as personal meaning maps, SWOT analysis and resource allocation, alongside group discussions, we were able to gather in-depth information about the meanings, challenges and opportunities of communicating fusion within the framework of an international network.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Efes
Paper ID: 103

Evaluating Health News In A Digital World. Quality Assessment In Science Journalism And Science Communication

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Reliable information is one of the basic needs in the 21st century. The internet has become an important source of information about diseases and therapy options. Public relations practitioners and scientists have to face the fact, that press releases and abstracts of journal papers are now directly available to a lay public. However, many users are hardly able to differentiate between journalistic articles and the growing number of 'science news' in terms of press releases. Thus, a discussion on ethical norms and quality standards in science communication is necessary.

The project, which ends in summer 2016, focuses on the question, whether a set of quality criteria that have been developed for medical journalism can be applied to corporate science news as well. In a retrospective study a sample of 30 news items and the corresponding press releases (n=27) published in 2013 have already been peer-reviewed by science journalists following a guideline of a multidimensional set of 12 quality criteria. In order to assess how the quality of information changes from the scientific paper via press releases to the news media we also tried to apply these criteria to the scientific papers and their abstracts. An ongoing monitoring of current medical science news will add about at least 50 news items and press releases respectively to this sample until spring 2016. A content analysis of the expert reviews gives insight into the applicability and operationalization of quality criteria within different functional contexts of the public sphere. Moreover, the findings lead to the question to what extent the set of criteria derived from evidence-based medicine and journalism may as well be applicable to evaluate the quality of popular science blogs on health news and similar formats, but also to help drawing the line between science and pseudoscience.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Efes
Paper ID: 159

Evaluating Public Communication of Science And Technology: The Case Of The Ebola Virus

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Evaluating public communication of science and technology: The case of the Ebola virus

The spread of the Ebola virus disease in West Africa and the global panic that followed has shown that communicating science alone is not enough to change behavior and as such must be embedded in its social psychological context. Science communication practices during a crisis such as EVD faces several obstacles as the scientific message competes with nonscientific discourses on the origin, spread and control of the disease. Risk communication, focused on information and behavioral advice, is propagated by experts but other transmission processes are taking place concurrently in the public by both scientific experts and other non-scientific actors.With the EVD, conspiratorial ideas and religious beliefs about the origin of Ebola; traditional and cultural beliefs and practices on the origin of disease, treatment and death of loved ones encouraged denial and resistance to the scientific message. Such competing systems of knowledge spread at the same time, interfering with control and containment.

This paper is part of an ongoing research into the spread of the EVD in parts of West Africa (Liberia, Nigeria, Guinea and Sierra Leone. The media analysis involves newspapers from across Africa covering 24 months.

This paper presents the ongoing analysis which identifies the actors, the collectives (e.g., groups, organizations, countries) and the representations of the virus in the media.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Efes
Paper ID: 189

Knowledge-Based Reporting of Global Infectious Diseases: The Pioneering Journalism of Laurie Garrett

Declan Fahy
Dublin City University, Ireland

I explain in this paper how Pulitzer Prize-winning American health journalist Laurie Garrett became one of the world's most influential and authoritative writers on global infectious diseases.

I take Garrett as a case study of what journalism scholar Thomas Patterson and communication researcher Wolfgang Donsbach have called knowledge-based journalism. That is, journalism that applies one or more fields of specialized knowledge to the coverage of complex events, such as pandemics, in order to enhance citizens' understanding and influence policy on these new social threats.

To demonstrate how Garrett came to undertake this form of journalism, I examine the key moments of her career from the 1980s, when she first reported on the new disease of AIDS for the newspaper Newsday, to her most recent journalism on the 2014 Ebola outbreak in her role as Fellow at the US think tank, the Council for Foreign Relations.

Using methodological approaches from cultural and intellectual history, I analyze chronologically her news reports, books - The Coming Plague (1995), Betrayal of Trust (2000) and I Heard the Sirens Scream (2011) - policy reports and social media activity to show how she came to offer a unique, authoritative perspective on global infectious disease. I also situate these texts against the a historical background, where the new field of emerging infectious diseases (EID) developed in the 1990s as a new scientific framework for understanding novel threats such as HIV/AIDS, SARS, bird flu, and Ebola.

I argue that Garrett's work is pioneering in that it offers an original way to conceptualize the work of a health journalist. I argue also that her work shows, in practice, how a knowledge-based reporter can come to wield enormous influence in the public, political, and scientific understanding of health

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Efes
Paper ID: 470

Dealing With Scientific Uncertainty: Coverage Of Antibiotic Resistance In The German Press 1993-2013

Evgeniya Boklage
Free University of Berlin, Germany

Co-authors: Markus Lehmkuhl, Anne Beier

Present paper is the study of representation of scientific uncertainty in the coverage of antibiotic resistance in the German quality press over period of twenty years. The problem of antibiotic resistance is simultaneously a serious public health concern and a complex scientific matter. The exact mechanisms, which lead to its rise, are not fully understood and there is still a considerable degree of scientific uncertainty involved. While the research community considers permanent presence of uncertainty about scientific findings intrinsic, this can create considerable difficulties for journalists reporting on scientific issues. Often, media workers are criticized for inadequate representation of uncertainty of scientific claims, which appear as more certain than they really are.

Using content analysis we studied 594 articles on the subject of antibiotic resistance, which appeared in six quality German newspapers between 1993 and 2013. The main focus of our research was on how journalists communicate the uncertainty associated with antimicrobial resistance, its development, causes, and possible consequences. We evaluated the precision of communicated statistical and factual information, analyzed quoted sources and the statements they made as well as examined the linguistic constructions of uncertainty. In the next step we applied thematic analysis of scientific literature using Web of Science to gain an overview of the state of research on the subject of antibiotic resistance. Lastly, we measured the statements about the risks of antibiotic resistance which appeared in the press against the scientific claims in research literature.

Our study has found that the complexity of the issue of antibiotic resistance and associated with it uncertainty are not fully grasped by journalists. Similarly, the ways in which journalists and scientists deal with statistical and factual information differ. Journalists often rely on absolute numbers as well as dubious statistical constructs to represent the risk of antibiotic resistance.

Strand: Participation
Type: Workshop
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Kapadokya
Paper ID: 100

Theater for Health: Using The Arts To Deliver Science To Low-Income Communities

Andrew Pleasant
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Co-authors: Jennifer Cabe, Richard Carmona

The arts can be a powerful tool to communicate science with the goal of promoting health. Through the arts, we can communicate multiple evidence-based messages that promote healthy behaviors to individuals and communities. Health literacy allows the public and personnel working in all health-related contexts to find, understand, evaluate, communicate, and use information to make informed decisions. Theater for Health is a new approach to combining the arts - music, dance, and theater - with the best practices of health literacy. This workshop will introduce participants to the Theater for Health model of communicating science to improve health and well-being.

Combining science, the arts, and health literacy is a multi-layered, culturally and linguistically appropriate approach to improving public health. Theater for Health was first developed to improve household hygiene in a shantytown - pueblos jovenes - in Lima, Perú. In this approach, community members themselves identify and adopt healthy behaviors that have a demonstrable impact on health. This approach introduces and exchanges scientific information by adapting culturally familiar narratives, songs, stories, and other materials to protect and improve individual and community health. In Lima, outcomes included increased knowledge about household hygiene and public health, improved behaviors and attitudes related to household hygiene, and a reduction in the microbiological load in food preparation areas. The pilot of Theater for Health in Lima, Perú demonstrated the power of science, the arts, and health literacy to improve health in individuals and communities. Future applications of this methodology will adapt the approach to a variety of health conditions and cultural settings.

Workshop participants will first be introduced to the Theater for Health methodology. Then, participants will work through a series of individual and small group exercises demonstrating how Theater for Health can be created and used as the basis for evidence-based behavior change.

Strand: Participation
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Valencia
Paper ID: 217

How to Tackle Stakeholders' Lack of Participation in Public Engagement Activities

Núria Saladié
Pompeu Fabra University, Spain

Co-author: Gema Revuelta

One of the main challenges when organizing public engagement activities is to be able to reach a true participation from the general public. This problem is particularly tricky when the issue to be discussed is unfamiliar to the expected audience.

In this presentation, we will explain how Universitat Pompeu Fabra (Barcelona, Spain) dealt with this challenge during the organization of public engagement activities (or Mobilizations and Mutual Learning activities, MML) in the framework of the FP7 European project NERRI (Neuro-Enhancement and Responsible Research and Innovation). As we will see, the task of recruiting actors for public engagement activities talking about Neuro-Enhancement (NE) is especially problematic.

Universitat Pompeu Fabra (UPF) has organized nine Mobilizations and Mutual Learning (MML) activities related to this discipline within the framework of the project NERRI. During these experiences, three major obstacles have been identified regarding stakeholders' lack of willingness to participate in public engagement activities: 1) the unfamiliarity of the term; 2) the blurred limit between science and science fiction in this field; and 3) the diverse nature of the different technologies included under the umbrella of NE ("natural" substances, drugs, technological devices, surgical procedures, and others).

UPF has come up with two main ways to counteract these resistances, which may also apply to other projects. In this case, the problem was solved by: 1) designing public engagement activities in such a way that they started with a preliminary phase of information and promoting discussion; and 2) creating a multidisciplinary local committee to join forces and give support to the cause of the project.

Strand: Participation
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Valencia
Paper ID: 260

The changing role of Public Participation in Science Communication

Hester du Plessis
MISTRA, SA, South Africa

This presentation will look at the social and political challenges brought about by the recent global economic meltdown that created new 'public spaces' of critical intervention. Social movements, unions and civil society demand democratic rights in innovative ways. The popular public intellectual, reporting on individual opinion, is being replaced by the game-changing 'collective intellectual' who diffuses disciplinary boundaries with a transdisciplinary approach to knowledge production. In this arena of uncertainty, the role of the intellectual in alliance with the field of science communication is experiencing epistemological and practical challenges. Attention to the establishment of the principle of scientific method and the design of new structures of collective research and reporting will change the 'science and society' landscape. The challenge for African intellectuals as science communicators will be on how to accommodate the role of the collective intellectual within an outmoded system built on symbolic and individual intellectual figureheads. Civil society demands service delivery and cannot anymore be swayed by overvalued, de jure leaders.

Strand: Participation
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Valencia
Paper ID: 121

Artificial Photosynthesis - Developing Technology Futures

Marc-Denis Weitze
acatech, Germany

Co-author: Wolfgang C. Goede

In Germany and other countries, new technologies have been dogged by public protests and controversy, owing to concerns about the perceived dangers and impact on the world as we know it. What some people see as technological progress is rejected by others as unwelcome change or meddling with nature; where some see opportunities, others are more concerned about the threats.

But how can the use and the development of new technologies be shaped as part of a comprehensive process of developing consensus on scientific requirements, interests, values and preferences, taking into account all interested groups in society?. Looking for acceptance ex post is not sufficient. Marketing campaigns did not prove useful for gaining acceptance (cf. gene technology, nuclear power). In order to ensure the successful roll-out of technology-based innovations, it seems appropriate to engage in an early dialogue with civil society and other interested parts of the public. So far, a lot of approaches have been developed: Upstream engagement, Dialogue with Citizens, â€žScience with and for Society", â€¦

Here we report on an approach of creating and assessing technology futures. Whereas in former times, people tried to predict the future (singular), today we think in terms of a series of alternative futures (plural!), i.e. concepts and ideas of the future development of technology and society. Technology Futures can be created by scientists (e.g., model-based scenarios, Delphi-methods), by artists (e.g., science fiction novels) or by parts of the public (expressing wishes, expectations, and concerns). These technology futures can combine different forms of knowledge; they include assumptions and value judgments. Creation and assessment of technology futures (are they likely to occur? desirable?) can perform a series of functions in society: They can influence strategy of research institutions, orientate political decisions (e.g., about funding) and fuel public debate.

The National Academy of Science and Engineering in Germany (acatech) has developed and assessed technology futures on the field of Artificial Photosynthesis together with scientists from universities and industry as well as students and interested lay persons. Science Cafés and a comic workshop were performed and evaluated: What technology futures have been created? Which concrete new ideas and perspectives have citizens contributed in addition to those of the scientists?

Strand: Publics
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Truva
Paper ID: 152

What Do People Do with the Health Content of the Media?

Erkan Yüksel
Anadolu University, Turkey

In recent years, with the increase of the media content on health issues, the discussions on accuracy, credibility and the validity have been increased too. Focusing on the discussions on the issue, one of the biggest media and public opinion projects in Turkey started in 2010 named "Designation of the Principles on Health Content of the Media in Turkey: An Analysis on Source, Message, and Audience". This paper covers one of the parts of the project, and aims to share the results of the national survey conducted in 33 cities within 2.503 different home and people on the health content of Turkish media.

Results show that people mostly prefer to get information from medical doctors rather than the media. Almost half of the participants partly trust the information given in the newspapers. People generally say that due to the media content they realized that they have a health problem, and they can get information about the private issues that they are shy to talk with others, also they behave consciously about their health. Moreover, people think that problems about health policy and healthcare system are not discussed enough, and doctors, products, medicines and hospitals mostly get advertised, concerns about selling more newspapers are of top priority, issues get discussed superficially, there is no detailed information and health news aren't checked. Turkish people don't get annoyed by health news in newspapers, and these news don't affect their trust to doctors and avoid them to visit a doctor. On the other hand, Turkish people control their doctor's advice's and their medical drugs mostly from the Internet. Some people use treatments and implementations that they learn from media, and they also want to visit a hospital and a medical doctor and buy a health product that they see on the media.

Strand: Publics
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Truva
Paper ID: 191

Medical Pictograms For Low-Literate Patients: Transparency And Translucency

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LUMC/Leiden University, Netherlands

Co-authors: Marit Geijer, Mark Bos, Henk-Jan Guchelaar, Jos van den Broek

Introduction/objectives

Pictograms are effective tools to improve communication on health and medicine, especially for people with low health literacy. However, it can be challenging to design visuals that are universally understood for more complex messages. The 'guessability' (transparency) of a pictogram, and how well people think the pictogram represents its message (translucency) determine the comprehensibility of a pictogram (Barros, 2014). Five pictograms for antihypertensive drugs were developed in collaboration with low-literate people. This study aims to evaluate the comprehensibility of these pictograms and to gain insight into the effect that repeated exposure has on pictograms' transparency.

Methods

In three pharmacies in the Netherlands, a total of 150 participants were interviewed. Health literacy levels were determined using the Short Assessment of Health Literacy in Dutch (SAHL-D). Participants were first asked to guess the pictograms' meaning. After they had been given the correct answer, they were asked to rate translucency on a 7-point scale. In follow-up, transparency was determined again with 97 participants.

Results

Eighty-nine of the initial 150 participants were low health literate, and 50 of the 97 follow-up participants. Between the first and second round, transparency of the five pictograms increased from 32% to 65%, from 43% to 61%, from 53% to 65%, from 59% to 70%, and from 93% to 99%. This increase was significant for three pictograms. Translucency scores ranged from 5.8 to 6.7 out of 7.

Discussion/implications

The increase in transparency after previous exposure shows that there is potential for pictograms with relatively high translucency and lower initial transparency. Perhaps they should be explained at first exposure, for example by the healthcare provider that distributes the information. This is especially valuable for pictograms with more complex messages, which might not reach adequate comprehension initially, but with repeated exposure could help patients to better understand their treatment.

Strand: Publics
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Truva
Paper ID: 281

Hands as Media of Contamination: Reading Public Health Handwashing Posters

Sheryl Hamilton
Carleton University, Canada

North American public health authorities are engaged in an ongoing project to re-teach us how to wash our hands. As part of these attempts to educate citizens about the role their dirty hands play in the spread of infectious disease, we find handwashing posters in public bathrooms, hospitals, airports, and shopping malls. From witty references to classic fiction, to graphic representations of germs, to detailed "how to" instructions, to the playful invocation of the British wartime slogan, "Keep Calm and Wash Your Hands," these posters deploy a variety of visual and textual techniques to communicate their scientific message.

I have compiled a corpus of over 100 public health handwashing posters that have circulated in the United States and Canada in the last decade. I am conducting a semiotic reading of them (individually, in thematic groupings, and collectively), focusing on the following questions:

- how do the posters work to responsibilize individuals into the broader goals of public health by constituting viewers as prudent citizens?

- how do the posters represent germs and bacteria as active agents?

- how do the posters link citizen health to work and economic productivity?

- how do the posters constitute hands as media of contamination requiring continual management?

This analysis will not only detail the nature and range of the communication practices deployed by public health authorities in the pursuit of disease control, but will also analyze their rich layers of additional meanings. These posters are public aesthetic texts with cultural consequences that exceed their primary scientific goals.

This analysis is part of a publicly funded project exploring the implications of living in "pandemic culture," namely a period where the social, political, cultural and economic environment is increasingly shaped by the threat of pandemic events.

Strand: Publics
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Truva
Paper ID: 489

Understanding Minors As A Target Group In Health Communication: The Neuroscience Of Adolescence And Implications For Medical Decision-Making

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Science Communcation & Society, Netherlands

Co-authors: Hein IM, Van den Broek JM, De Vries MC

Communication in healthcare is often targeted at adults and as a result minors are overlooked as information receivers of health information. Various international guidelines stress the importance of involving minors in decision-making regarding medical treatments and research participation. To this end, it is essential that minors are identified as a target group of health communication and that insight in the specifics of this target group is increased.

A key issue is that no universal agreement exists about the age at which minors are competent to be involved in making medical decisions. Evidence from neuroscience research provides insights in how developing brain structures affect decision-making in minors. Neuroscience research on the developing brain in children and adolescents was reviewed and related to the capacities required for medical-decision making (communicating a choice, understanding, reasoning, appreciation).

The required capacities are sufficiently developed around the age of 12. This age coincides with the onset of adolescence. In adolescence, there appears to be a mismatch between the development of two brain systems: (1) early development of the reward system combined with (2) late development of the control system. This mismatch affects adolescents' decision-making competence; specifically when in emotional situations the decision-making process and outcome can be severely diminished. In those contexts adolescents tend to focus on short-term outcomes, whereas medical decision-making is generally associated with long-term implications.

Discussion: Developing minors become increasingly capable of understanding medical situations and decision-making, but the neurobiological developments in adolescence affect competence in specific contexts. Insights in the neuroscientific mechanisms underlying medical decision-making demonstrate strengths and vulnerabilities of minors in medical care. In addition, insight in minors as a target group can stimulate practices for optimal involvement of minors in health communication and for creating a context in which the minor can make a competent decision based on targeted information.

Strand: Scientists in PCST
Type: Panel
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Madrid
Paper ID: 133

International Trends in Researchers' Participation In and Attitudes Towards Public Engagement

Tiffany Lohwater
Director of Meetings and Public Engagement, AAAS – American Association for the Advancement of Science, US.

Co-authors: Chloe Sheppard, Kevin Burchell, John Besley, Rosalba Namihira

In many countries, the last twenty years have seen increasing calls for scientists (and more recently researchers from all disciplines) to communicate and engage with the public. The objective of this session is to – from an international perspective – focus on the attitudes, perceptions, understandings and motivations of researchers themselves as they respond to these emerging and evolving demands. In particular, papers will address one or more of the following questions: what motivates researchers to communicate and engage with the public; what factors facilitate or inhibit researchers from participating in such activities; how have these attitudes and behaviours changed over time; and, are there differences between different groups of researchers (perhaps along disciplinary, seniority or gender lines)?

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PAPERS

Kevin Burchell, University of Westminster, UK

Public engagement by researchers in the UK: a 'work in progress'

The objective of this paper is to report on new quantitative and qualitative research into the factors affecting public engagement by UK researchers. The research suggests that the embedding of public engagement in institutional cultures can be best understood as a 'work in progress'. There are positive indications in the results that public engagement is increasingly part of the landscape of higher education and research institutions, and that participation in and value placed on public engagement has increased in recent years. At the same time, the research suggests that researchers and institutions remain uncertain about systems of rewards for public engagement, within the context of a profession that is driven by research (and teaching). The research suggests that public engagement is more firmly embedded in the context of the arts, humanities and social sciences than it is among researchers in

science, technology, engineering and mathematics. The evaluation of public engagement also emerges from the research as a relative blind spot. Broader research over a lengthy period shows that institutional change of this kind is highly challenging and that higher education institutions are known to be relatively slow to change. Within this context, the project indicates that, while recent and current strategies have been helpful, longer term effort – perhaps targeted in particular domains – is required.

John Besley, Michigan State University, US

Scientists' priorities for public engagement: Communication objectives and overall goals

The report will detail a fall 2015/winter 2016 survey of academic U.S. scientists' (~N = 7,500) from a range of scientific societies. The research emphasizes the value of looking at both predictors of engagement as well of predictors of communication objectives (e.g. knowledge, trust, etc.) and overall goals (e.g. funding for personal research or science in general, specific policy positions etc.) that scientists say they prioritize when communicating. Key predictors considered include attitudes, norms, efficacy beliefs. The survey extends on earlier work with the American Association for the Advancement of Science that has shown that scientists appear to prioritize relatively traditional objectives such as knowledge building rather than potentially more strategic ones such as the objective of ensuring that the public sees scientists as warm and competent, or the objective of reframing issues to resonate with audience values. Efficacy beliefs have been the most consistent predictors of prioritizing specific objectives. The potential meaning of the results for science communication training will also be addressed.

Rosalba Namihira, Universidad Nacional Autonoma de Mexico (UNAM)

Science and social engagement. Public communication of science (pcs) as a cultural practice of the scientific community in Mexico

Knowledge societies require Public Communication of Science (PCS) to become a cultural practice of the scientific community, to provide societies with better elements to identify and solve up their problems, make appropriate decisions according their particular situation, and to take part in the use, promotion and regulation of scientific knowledge and its application (OECD, 2003).

In order to know how researchers in Mexico are establishing these kinds of practices, a quantitative exploratory study, based on a survey among members of the National Researchers System (SNI), was done. In collaboration with Mexico's National Council of Science and Technology (CONACyT), the Mexican Academy of Sciences (AMC), and the General Directorate for the Dissemination of Science (DGDC-UNAM), an online questionnaire was sent for exploring, among other things, the researchers' activities regarding PCS; their target audiences; the stimuli, motivations and barriers they face; their perception of the public and governmental interest in the research carried out in Mexico, their willingness to accept the participation of the public in the design of STI policies, and to maintain a dialogue with different audiences, beyond the academic scope.

Participants considered important communicating their research outside the academy, and to including PCS in the curricula of science careers. Even though they were interested in social engagement, their communication with specific sectors (businessmen, politicians, ONG's, indigenous communities, etc.) is still poor. They perceived science outreach as an opportunity to educate people, but not clearly yet, as a commitment to discuss with the public about their concerns regarding science and its applications in the society.

DISCUSSANT
Marina Joubert
Stellenbosch University, South Africa.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 109

Diagnosis Of The Public Communication Of Science And Technology In Mexico: A Method

Jorge Padilla
Somedicyt, Mexico

Co-author: Ma. De Lourdes Patià'o

In recent years there have been several assessments of the status of the popularization of science in Mexico: in a very broad and deep way in several states, and at an exploratory level for the whole country. These diagnostics have served as a basis for the further development of programs for public communication of science, which have involved diverse actors in this field. The method used to perform these diagnostics involves gathering information from both secondary sources (studies of the local context) as well as from primary sources. The latter ones were surveys answered by the various actors of public communication of science, focus groups involving samples of people from relevant sectors of society, and individual interviews with key people related to the field. These diagnostics have allowed, on one hand, identify all the specific agents who perform the popularization of science and technology: Higher education institutions, research centers, the media, and organized groups of science communicators, government agencies of the S&T sector and other fields, and technology-based companies. Alternatively, they have enabled dimensioning and describing the activity of popularization of science and technology, both qualitatively and quantitatively. Finally, they have led to an identification -which has involved local communities of communicators of S&T- of the strengths and weaknesses of the communication of science and its performers, as well as the opportunities and threats that exist in the relevant context, regarding the public communication of science to contribute to strengthen the scientific culture of the Mexican population. The method used for diagnostics is presented; as well as the main results, which though relevant to Mexico, could provide a reference for the analysis of the popularization of science and technology in other countries.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 177

Strategies for the Public Communication Of Nanotechnologies: A Three Country Comparative Study

Miguel Garcia-Guerrero
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Co-author: Guillermo Foladori

Modern society is characterized by a strong feedback with science and technology (S&T): social context influences the path for emerging technologies and these in turn shape the way people produce, work and live. When a new and powerful technology wave arises, with the potential to influence and transform different social and economic sectors, development opportunities appear but they are restricted for those agents informed and active anough to take advantage and use the emerging advances to improve the living conditions of their society or to maximize private benefits.

Over the last 15 years nanotechnologies (NT) have stablished worlwide as a powerful cluster of emerging technologies, with the promise of even becoming the next big technological revolution. Research for this advances, that involve the manipulation of matter at the atomic and molecular scale, have received support for more than 50 billion dollars in public support worldwide even when most people don't have an idea of what they are.

Public communication of science and technology plays a key role in the social construction of the NT, offering a perspective on the subject for non-specialists and, with it, influencing how agents comprise these developments and interact with them. This paper is dedicated to identifying how different strategies for the popularization of NT get society involved with these emerging technologies in Spain, United States and Mexico; with this we intend to establish whether they serve as facilitators of a rich social participation or as mere propaganda tools for the adoption of new technologies.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 303

Mapping the Shift from Public Understanding of Science to Public Engagement with Science; the case of Kerala Sasthra Sashithya Parishath.

Jawhar Cholakkathodi
Phd Scholar, India

Now, more than ever, the engagement between science and everyday life has become very strong. We are living in an age where science and technology has become an inseparable part of our life, the interrelation between science and society demands an active academic and public debate. Science movement is an important access strip to understand the relationship between science and society. This paper is an attempt to understand science movement through the framework of Science and Technology Studies (STS). Science movement strive to popularize science among the general public in different ways, and to pose critical questions about the applications of modern science and technology. The study focuses on the Kerala Sasthra Sashithya Parishath (KSSP) (hereafter Parishath) as a case study of science movements. Parishath is a people's science movement that emerged in Kerala, the southernmost state in India, in the 1960s. It strives to take modern science and technology to the common people and educate them about the potential risks and benefits of the same. The Parishath, through its activities, developed a political movement in the context of science and technology. The Parishath is entering into fiftieth year of its active and vibrant engagement with Kerala public sphere. In this historical juncture, it's very important to take stock of the role of this People's Science Movement (PSM) in the construction of a sustainable future.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Sevilla
Paper ID: 361

Science From One-Way To Two-Way Communication

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ir, Netherlands

Co-authors: K. Klein, M. van den Top

The government in the Netherlands sincerely believes in investigating in innovation. It has created a structure of nine themes (top sectors) with potential for economic growth. As the Netherlands is the second largest exporter of agricultural and food products two themes have been identified in this field of agriculture and food. Worldwide, Wageningen University & Research centre is one of the leading institutes in these topics .

Annually, the ministry of Economic Affairs invests over 140 million euros in research at Wageningen UR, resulting in more than 1000 projects each year. As the funds are public money, Wageningen UR is obliged to publish all research projects and results. For this purpose it has created a website (www.kennisonline.nl), which receives 50.000 unique visitors. A digital newsletter, a printed magazine and social media complete the communication mix of KennisOnline. Since 2013 videos replace the magazine, creating a younger, diversified, more international and extended audience.

Despite these efforts the communication remains one way, researchers perform the research and provide the results online to the public. A few research groups on specific research topics however succeeded in more interactive ways of communication. One such group was active on research in organic agriculture. Their research was coordinated in close collaboration with the farmers and industry and therefore demand driven. The research results were as such more targeted as they answered questions from the target audience itself. As such the results were also provided in ways that really answered the needs and habits of the audience. A website for background information, factsheets for practical information and meetings to discuss the results, answer specific questions and ask new ones. The programme receives high marks on recognition and user friendliness, confirming the thought that two-way communication is more effective that one-way communication.

Strand: Trends and policies + Ethics and Arts
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Barcelona
Paper ID: 195

Using SciCommercials to Save the Whales: Lessons From Social Marketing For Better Science Communication

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The context for this paper is the uncontrolled explosive growth of global whale watching and the failure of widespread sustainable practices. The disregard for sustainability is, in part, due to ineffective public communication and poor uptake of science related to whale watching. Here I raise questions relating to the efficacy of communicating science to such audiences and provide a solution by developing an effective science communication format. I argue that the discipline, structure and focus on changing behaviour that characterises social marketing provide important lessons for making science communication more effective.

Here I outline: (i) a theoretical science communication framework called a SciCommercial (Science Communication Commercial), which draws on key elements of social marketing, TV commercials, viral videos and documentary filmmaking, and (ii) present the findings of a case study for the SciCommercial framework applied to responsible whale watching. Key elements of the communication framework include 1) storytelling, 2) simplification of content, 3) science authority/rigour,â€¨4) emotional communication techniques and 5) authentic human reactions/human interest. The case study involves research conducted with leading international scientists to inform the content of the SciCommercial video, as well as the production, online distribution and assessment of the whale watching SciCommercial research video. The SciCommercial presents a potential science communication management tool for the whale watching industry by advocating sustainable practices to stakeholders, increasing awareness about impacts and managing visitor's expectations.

While focusing on whale watching for the case study, the SciCommercial communication framework has important applications to the wider discipline of science communication. SciCommercials that use elements such as storytelling, emotional communication techniques and human interest/authenticity are potentially powerful ways to get science to large target audiences

Strand: Trends and policies + Ethics and Arts
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Barcelona
Paper ID: 278

Different Approaches to Public Communication of Science

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A study of the field of Public Communication of Science (PCS) in Mexico over the last five decades shows how it has changed from being an act of "social volunteering" into a full-time profession (Sánchez, et. al., 2014). PCS has also become more complex and diverse. The diversity of media that are used, the range of publics served, the array of motives and strategies employed and different professional backgrounds and expertise as well as styles of those who are active in the field are indicative of how the field has evolved. This diversity and complexity must be addressed in PCS courses in order to provide students with the necessary theoretical and methodological tools as future professionals in the field.

As coordinator of a 240 post-graduate course in PCS which has been offered in the UNAM since 1995, I have observed how confusing these different view and styles of teachers is to the students who often find them contradictory. They often ask which is the "correct one" or which one should I use? The answer is there are no "correct formulas", it depends on the project.

In order to clarify this panorama and as a didactical tool I have developed a proposal of different views of PCS. These approaches are artistic-cultural, educational, propagandistic, social-political and commercial. Each one reflects different theoretical backgrounds, missions, objectives, strategies, ways of relating to the public, the conformation of work teams and what is to be evaluated. The boundaries between these approaches are not fixed and two or more can be used in the same project. This tool has resulted quite useful to the students.

Sánchez, et. al. 2014. PUS, http://pus.sagepub.com/content/early/2014/04/28/0963662514527204

Strand: Trends and policies + Ethics and Arts
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Barcelona
Paper ID: 305

Science in Brazilian Popular Literature

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Co-authors: Carla Almeida, Ildeu de Castro Moreira

Science does not usually figure prominently in Brazilian literature, either in other artistic and cultural manifestations of the country. Historical factors as the late development of modern science and the restriction of scientific knowledge to an intellectual elite in Brazil help explain this situation. Despite the unfavorable context, one can find within the most popular forms of communication generic references to science. Reports of scientific discoveries, alerts on health and environment, episodes from the life of scientists, descriptions of astronomical events or references to negative impacts of progress find space in literature, in music and in popular proverbs. In these situations, it is revealed a certain level of interest, concern and involvement of society on issues related to science. This is the case of so-called literature de cordel (string literature), a tradition of northeastern Brazil that is also present in other parts of the country nowadays. This type of cultural ex<x>pression existed in the Iberian Peninsula since the Middle Age and was brought by Portuguese settlers to the Northeast of Brazil in the 19th century. Folhetos (leaflets) or cordéis (strings), as they are popularly known, were consolidated in the 20th century as sources of entertainment, propagators of old stories and legends and news broadcasters in a context where other media were poor or non-existent. In our study, based on a corpus of 80 cordéis about science, health and environment, we seek to understand, through a qualitative analysis, how the scientific universe is inserted and is portrayed in this literary genre. We noted that the cordéis as a whole present an ambivalent image of science, as they glorify the scientific achievements and their authors at the same time that they offer a critical look at technology development. The authors who write about health and environment tend to adopt an engaged speech, calling for awareness and joint action. Our study suggests that the convergence of science and popular literature has great potential to bring closer scientific culture and popular culture, and foster critical thinking on the relationship between science and society, and is therefore a rich tool of science communication.

Strand: Trends and policies + Ethics and Arts
Type: Paper
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Barcelona
Paper ID: 319

The Narratives In Science Communication

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Co-authors: Carolina Moreno Castro

That science and technology are part of society is out of debate. That public communication of science and technology is a key aspect of social functioning of science and technology also is clear for everyone. But, what do we know about characteristics and qualities of this ex<x>pression of Science, Technology and Society relationships that is public communication of science and technology? The narratives, as textual structures, are good avenues to know somewhat more of this component of scientific culture. In this work we study the narratives in a group of journalistic texts about nanosciences and nanotechnologies. The results show that: the narratives are presents in the group of texts studied; many times, those narratives show just the invisibility of the nano and don't show social aspects of these areas. The results indicate also that the prevalence of these narrative characteristics depends of the stage of development of these sciences and technologies; they also show that the narratives vary related with the context imposed by each enterprise of mass media; and they show that the narratives also depend on the mixing of the intern elements of the narratives. Based on these results, this work also points that the capture and description of narratives is useful to understand what there is and there isn't in our scientific culture. The goal of the analysis is to "suspect of simple stories", and to think about the narratives as a "candies" which we can't abandon because we need them to understand the reality, but that we can question and interpellate them to understand how works their filters as editors of the stories in science communication.

Strand: Trends and policies
Type: Workshop
Date / Time / Room : 28-04-2016 / 13:15-14:30 / Mallorca
Paper ID: 259

Design for Practice: Combine Theoretical And Intuitive Thinking In Science Communication Practice

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Decision making in the turbulent daily practice of science communication is not an easy thing to do. Therefore, many science communication professionals use their implicit theoretical knowledge, experience and routine to decide, under time pressure, what to do. However, this decision behaviour does not necessarily give way to think about innovations in the practice of science communication. And even may lead to frustration of the professional, since he or she feels the need to change, but at the same time lacks the time, skills, knowledge and tools to deal with this. Any innovation, such as decisions tool for science communication professionals, needs to: 1) anticipate and buffer the professional's frustrations; 2) seamlessly fit into the daily practice of the professional and lead to tangible results; 3) stimulate the professional to slowly leave the path of just routine, and reflect on the possibility of doing things differently.

In this workshop we would like to take the participants along the way of social design for innovations in science communication. During this design process we provide participants with design methodologies and a tool that invite them to explicitly combine theoretical and intuitive reasoning. We will do this in the context of science communication between members of an interdisciplinary research team working on new and emerging technologies. This directly leads to insights for possible solutions for designing communication processes that support the interdisciplinary research team in their collaboration and possible outreach. But foremost, this leads to reflections on one's own professional decision behaviour, moving between routine and innovation. The latter yields step-by-step changes in one's own daily science communication practice. By doing this, participants collaborate in our research on decision supportive tools for science communication professionals directly.

Strand: Digital age
Type: Workshop
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Kapadokya
Paper ID: 269

Appropriating Social Media - Public Engagement With Science And Technology Online

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Co-authors: Heather Doran, Jamie Dorey, Ann Grand, Kenneth Skeldon

This workshop will focus on how we use digital tools for public engagement with science and technology. Building on research findings from the Aberdeen and Open Universities' Public Engagement with Research Catalyst projects, we will draw on the facilitators' experiences in North America and Europe, and the workshop participants' reflections on the role of digital technologies. We will explore the following questions: What are the challenges of using digital technologies to support engaged research with varied communities? What are the roles the digital researcher must fill? What motives underlie a commitment to digital engagement?

In recent years, the move towards engaged research has become more and more apparent, from the UK's impact agenda for research, the European Responsible Research and Innovation agenda, and more globally the drive towards broader impacts that reach beyond pure commercial return. At the same time, digital technologies and social media are exerting an ever-increasing influence; researchers, science communication professionals, policy-makers and publics are increasingly using digital methods to communicate their research and engage with different stakeholder communities.

Participants will review a number of illustrative scenarios taken from a range of contexts where social media has been appropriated to support public engagement. These will include the discussion of controversial research issues, complex research, risk and the development of new ideas for digital engagement. In discussing these scenarios participants will consider the social, ethical and practical aspects of a number of public engagement approaches, and develop strategies for critically reviewing their individual, group, and institutional engagement practices.

There is huge opportunity for high-quality meaningful engagement through genuine dialogue via digital platforms, but in our experience one-way mass-communication has tended to prevail. In this session we want to draw on past experience to look at what we could achieve in the future.

Strand: Ethics and arts
Type: Workshop
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Assos
Paper ID: 222

Discover your views in the Frame Reflection Lab

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Co-author: Marjoleine van der Meij

The frame reflection lab (FRL) is an ethical reflection tool that can be used for various groups of participants to support them to actively think about synthetic biology in a playful way. The FRL is a blended learning environment: it consists of four online video stories that each show a different perspective on Synbio. These stories are discussed in an interactive workshop to enable the participants discover their own vision on the role of this new technology in society. The four views shared by the online video stories are based on two central questions in the philosophy of technology: 1) Develop people and technology autonomously or in interaction? And 2) Does the man, or the technique the most influence on this development?. The characters are played out by professional improvisation actors. By making use of storytelling through semi-scripted improvisation we try to create a mix of authenticity, experience and analysis that is tailored to the empathy and the attention span of our participants. The workshop program combines reflective questions and creative exercises to help participants organise their ideas on the matter. We tested the FRL with (future) synbio researchers as well as other stakeholders, and with Msc students and secondary school students. In learner reports and exit surveys we have evaluated the process and outcomes. The FRL appears to contribute substantially to awareness and opinion-forming, thus creating opportunities for a constructive dialogue on new technology. In the PCST workshop we will present the principles and effects of the FRL based on our experiences and evaluations so far. You will watch the videos and do the exercises yourself to get a first person experience of frame reflection. Subsequently, you will be invited to discuss together about the merits and pitfalls of this new playful reflection tool.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Valencia
Paper ID: 62

Science Coverage in Popular and Elite Newspapers

Gunver Vestergaard
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A qualitative and quantitative content analysis of Danish science news in the popular and elite press 2012

Numerous scholars have emphasized how the popular press is overlooked in content analyses of science news. Still, most studies only include elite papers for different reasons such as the perception that the elite press is agenda-setting or simply contain more science coverage.

In a completed study of Danish science news I compared two tabloid newspapers with six elite papers. I collected all online and print science news published in a specific November week in 2012. In total 366 news items. The coding included quantity of science coverage, word length, number of interview subjects, trigger event, references to scientific journals, geographical origin, scientific field, and originality. In a supplementary qualitative analysis I examined language style in an attempt to differentiate the attitudes towards science.

The results show that the tabloids included as much or more science coverage as elite papers, especially online. All in all, sources and triggers for science news did not differ signifcantly between popular and elite science news. However, online popular news contained more references to scientific journal articles and was more often triggered by an international event. The two tabloids also favored health news, whereas elite papers prefered the humanities and social sciences. The qualitative analysis revealed how popular papers de-emphazised the authority of scientific institutions and presented science in a more casual and informal tone.

I conclude that popular papers cover science substantially and approach many of the same stories and sources as the quality press but present them in a more informal manner to satisfy tabloid readers. The certain tabloid culture of questioning the establishment also results in a more egalitarian coverage. I speculate that the medialization of science push sensationally framed science content towards the popular papers, which combined with tabloid culture results in an extensive and egalitarian coverage aligned with trends predicted to follow from medialization. Combined, popular papers seem more responsive to the features of medialization than elite papers.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Valencia
Paper ID: 235

Cover image of Science: Research on 56 Years History Of Development

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Co-authors: Wang Guoyan(corresponding author),Yao Yuting

Science, one of the top scientific journals began its cover image as early as 1959 , which is a front-runner in top scientific journals about visual communication of science. By qualitative study on cover images of Science (format, content, type, and technology) and changes in font style from 1959 to 2015, as well as quantitative study on research field, nationality and institution distribution of cover stories, this study aims to provide reference of experience and propose for other academic journals. Since visual communication has become an important part of science communication, its essential to understand its history by summarizing the development and the overall situation, forecasting changes in the future, especially in nowadays people repeatedly emphasize the significance of visual communication. Based on the perspective research on covers of Science, the article explores its development and characteristics in different stages in the history as a case study about visual communication on top scientific journals.

Since visual communication has become an important part of science communication, its essential to understand it's history by summarizing the development and the overall situation,forecasting changes in the future, especially in nowadays people repeatedly emphasize the significance of visual communication. Based on the perspective research of cover's history from Science, a top academic journal, the article explored its history of development and characteristics in different stage of cover images as a case study about visual communication.

Strand: Media practices
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Valencia
Paper ID: 236

Evaluating Mexican Scientific Magazines in the Digital Age

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Co-authors: Ivonne Lujano-Vilchis, Nestor Daniel Martínez-Domínguez

In May 2014, a law for Open Access was approved by the Federal Mexican Government. Mexico is now considered as one of the three Latin American countries that promotes open access to science and technology. In this context, the democratization of knowledge is promoted by the Mexican Index of Popular Science and Technology Magazines (MIPSTM) which, through the evaluation of editorial processes, certifies and funds those magazines that aim at pushing the public communication of science. By 2015, the MIPSTM has included 17 magazines published by State Councils of science and technology and public universities which receive annually more than US$ 6,000 from the National Council for Science and Technology (CONACyT) in order to afford the production, editing and distribution of its contents.

However, the MIPSTM's evaluation model does not include the context of the Digital Age which is based on the use of technological strategies -such as interactive platforms- that promote participation of the public for the social appropriation of scientific knowledge. This study analyzes the 17 indexed magazines regarding the use of multimedia resources; level of communication with the public; interactivity degrees; and publication of current issues. The results indicate that the 17 magazines have a website. However, not all of them share their contents online, and the ones that do are limited to publish materials in PDF format. This kind of publishing practices do not take into consideration the context of Science 2.0 that seeks to promote the relationship of science-society for the collective production of knowledge. A proposal is provided which focuses on restructuring the MIPSTM's evaluation policies in order to enable magazines to make accessible their contents on Open Access and use digital communication strategies.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Barcelona
Paper ID: 424

How to influence Horizon 2020 SwafS work programme - the Swedish advocacy platform

Maria Lindholm
VA (Public & Science), Sweden

The EU's Horizon 2020 is the world's largest research and innovation programme with a total budget of 80 billion euros for the period 2014-2020. How can various national organisations influence the design of such a programme, beyond the formal paths of consultation and national representation in decision-making bodies?

In Sweden, six research funding agencies have joined forces to fund National Advocacy Platforms, which aim to increase Swedish participation in Horizon 2020 by bringing together stakeholder organisations representing Sweden's key areas of strength to jointly communicate their opinions and influence the design of future work programmes. Some 30 Advocacy Platforms have received initial funding to this date.

The Swedish non-profit organisation Public & Science (Vetenskap & Allmänhet, VA) coordinates the Advocacy Platform that aims to increase Swedish participation in the sub-programme Science with and for Society (SwafS). The Advocacy Platform involves some 50 Swedish organisations, research centres and individual researchers. The Science with and for Society programme is focused on building effective cooperation between science and society. The programme is relatively small but the principles of Responsible Research and Innovation (gender, ethics, open access / science, science education, public engagement and governance) are also horizontal principles being funded in other sub-programmes. Thus, the advocacy platform aims to influence the SwafS programme but also to make the principles of RRI more visible and applied throughout Horizon 2020.

In this presentation, the Swedish initiative will be introduced and the SwafS Advocacy Platform will be used as a concrete example of how science communication policy can be developed and influenced in an international context.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Barcelona
Paper ID: 449

Leadership Patterns In Science Communication: Significance Of "Domain Area Leadership'

Manoj Kumar Patairiya
Broadcasting Corporation of India, India

There seems a great apathy about the significance of domain area knowledge of science communication while hiring people for leadership positions in science communication. The scenario by and large is similar at local, national and global levels. The scientific community and top technocrats seem concerned over lower science literacy, less science coverage, pathetic level of science awareness, health risks due to ignorance, mis-beliefs and superstitions, etc. However, when it comes to putting 'right person to right job', the same set of people has 'other considerations' and the situation continue to worsen! This is perhaps because the concept of 'science communication' is largely misunderstood by them! The paper examines different trends of hiring personnel for leadership positions in different science communication organizations in different countries and draws postulates in the form of guiding principles. Unless science communication is understood in its right earnest by policymakers and so called leaders in science communication, many efforts focused at public understanding of science may not yield results. Incidentally, you require a Trained Graduate Teacher qualification for educating primary level students but for communicating science to the entire nations and beyond, there are instances where you did not require any academic specialization in 'science communication' or at least 'science and mass communication', despite the fact that such specializations are available worldwide. When the idea of publication of the Indian Journal of Science Communication was floated, not only 'commoners' but many 'specialists' also started presuming that it was going to be yet another science journal or science magazine that will carry hardcore 'science research papers' or 'popular science articles'. Even some contributors have started submitting such materials. Similarly, when annual Indian Science Communication Congress was conceptualized in 2001, a great deviation from main subject was observed. More than 50% papers and presentations were on telecommunication, information communication technology, library science and/ or communication apparatuses, instruments or gadgets, etc. Some scholars had submitted their research papers on hardcore science and technology fields, i.e. nanotechnology, biotechnology, virology, new building materials, or crystallography, etc., while popular science writers started sending articles on galaxies, sun flairs, environment and other similar subjects of popular nature. Only a few papers, a bit closer to our subject, were on science education, agricultural extension, technology transfer, and alike. There were hardly a few who knew that in fact we were expecting contributions on 'science communication'. Almost same situation arises when there is a vacancy in 'science communication'; hardcore scientists, teachers, sociologists, historians, environment activists, political science graduates, computer personnel and marketing people, etc., manage to get through, but science communication professionals with domain area knowledge! The study brings out clearly that: i) there is a need of standardization of science communication as a distinct discipline; ii) it lacks appreciation by the policymakers until it remains a grey area; iii) the recruiting authorities must recognize the significance of the domain knowledge of science communication; iv) ensure that the science communication is the core area and peripheral areas do not come to core; v) vision and direction will come only from 'domain area leadership'.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Barcelona
Paper ID: 194

The Colombian Annual Report on the Status and Trends of Biodiversity: Science Communication Innovations to Influence Environmental Management

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Co-authors: Cristina Rueda, Maria Fernanda Gomez, Luz Adriana Moreno, Carlos Cubillos, Germán Andrade

The Alexander von Humboldt Institute for Research on Biological Resources is a Colombian organization created to provide information and knowledge concerning national biodiversity for the Colombian Ministry of Environment and other institutions ascribed to the National Environment System. The Institute is mandated by national decree to present an annual report on the status and trends of continental biodiversity. This report is especially directed towards policy makers, key stakeholders, and citizens involved in taking environmental decisions but who may lack the scientific background required to understand and use unprocessed information and data. Previous reports experienced difficulty in presenting large amounts of information that overwhelmed the target audience or even passed by without being read. So in 2014 the Institute assembled an interdisciplinary group in charge of coordinating researchers, designers and communicators in order to release an innovative publication that presents its contents through compelling resources such as illustrations, infographics, and short texts. Currently, the editing group is working on the 2015 version, in agreement with the trend begun in 2014. In addition, an interactive website that allows for further exploration of contents and seeks a larger outreach is being developed. Accordingly, the aims of this poster are 1) to depict how a governing mandate fostered the creation of an ongoing science communication series about one of the most diverse countries on the planet, and 2) to describe the writing and visual strategies that are being developed for the online and printed versions of the report. We expect the presentation to be an example and inspiration for other research institutes to comply with policy requirements and effectively communicate results by overcoming knowledge barriers.

Strand: Trends and policies
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Barcelona
Paper ID: 339

CRI PRIMES: Learn How To Apply A Proven Model To Fund And Create Meaningful Scientific-Based Partnerships That Accomplish Public Good

Andrew Pleasant
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Co-author: Jennifer Cabe

Canyon Ranch Institute, a U.S.-based non-profit, has developed a new framework for sustaining evidence-based partnerships through multiple funding sources that support the best practices of science and public communication of science to measurably improve individual and community health and well-being. This session will explain the CRI PRIMES model and be useful for anyone responsible for developing funding streams that have integrity and sustainability. The CRI PRIMES model has helped CRI to raise over USD$43 million in unrestricted funding. Funding raised through this model is through private and public foundations and philanthropists, as well as media companies and multinational corporations. The CRI PRIMES model is built on six steps and practices that can be used in any setting in which the goal is to engage a multi-sector approach to increasing evidence-based decision making. PRIMES is to Partner, Require radical equity, Insist on Infrastructure, Make it known (i.e. communicate with all stakeholders), Evaluate, and Sustain. The CRI PRIMES model has been effective in multiple locations and cultural contexts because it is based on innovative evidence-based approaches to address long-standing challenges of under-resourcing and lack of clarity. The CRI PRIMES model is applicable to organizations seeking tested, replicable approaches to finding and maintaining funding support, avoiding any restrictions on how and when to communicate about scientific basis of the work or the research outcomes, honoring and leveraging the knowledge resources of all social sectors and experts to solve previously intractable problems that they all agree should be solved for the public good, and applying a rigorous research-to-action logic model that can be tailored based on both current and historical practices and beliefs. This session will focus on helping session participants use the model to solve challenges within their own organizations, situations, and contexts.

Strand: Participation
Type: Panel
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Madrid
Paper ID: 309

Children's Universities: The Evolution Of This Successful Model For Promoting Children's Participation In The Dialogue Between Science And Society

Chris Gary
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Co-authors: Paola Rodari, Ana Maria Jaramillo Escobar, Débora d'àvila Reis, Chris Gary

Over centuries, universities used to be well-established institutions of research and teaching. However, during recent years they have gained much more consideration as relevant actors in the spheres between academic research, innovation and public engagement. This "third mission" of universities is built upon two strands of engagement: knowledge transfer and co-creation of knowledge on one hand and societal engagement on the other hand - to contribute to social equality and the development of society at large.

As one possible format of direct engagement with society, the term "Children's University" became prominent during the last decade, when a larger number of universities have initiated science engagement programmes for children typically aged 7-14 years. A EUCU.NET survey has revealed almost 400 comparable activities in 40 countries, which involve more than 500.000 children each year in programmes arranged by 15.000 academics.

Initially, the Children's University approach was quite traditional in regards of science communication, aiming at sparking the interest of young people in particular fields of scientific research, notably the STEM area. However, encouraged by direct encounters with this audience of non-traditional age, universities became increasingly aware of needs and perceptions of their potential future students and in particular started to reflect on their social, cultural and economical diversities and the consequences of these diversities in the relation with higher education. Consequently, the focus of Children's University-type programmes is increasingly shifting from a mere knowledge transfer towards more diversified formats of engagement, which are actively trying to impact on social contexts but also promoting a culture of inclusiveness and participation within the HE establishments.

This session will outline the evolution of the Children's University approach, illustrated by successful case studies from panelists, and will put up the potential of Children's Universities for a more inclusive Higher Education landscape for discussion with the audience.

Strand: Publics
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Sevilla
Paper ID: 28

Interactions Between Science Knowledge And Advocacy Skills Among Parents Of Hearing- Impaired Children

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Technion, Israel

Co-authors: Ayelet Baram-Tsabari

The hearing impaired child's potential of integrating into hearing society largely depends on his parents. Among other skills and types of knowledge this requires parents to learn and understand vast amounts of scientific knowledge in the field of hearing. The main aims of this study are to characterize the role played by scientific knowledge in the lives of non-scientists faced with science- related decisions and to examine the relationship between the constructs of science literacy and public engagement with science. The research question guiding this project is: What are the interactions between general scientific knowledge, contextual scientific knowledge in the field of hearing, and parents' advocacy skills?

This study employed semi structured interviews (n = 6) and questionnaires (n = 34) with parents of hearing-impaired children aged 6-15 who are in the process of hearing rehabilitation. General scientific knowledge was tested using questions from a standard NSF survey. Contextual scientific knowledge in the field of hearing and advocacy skills were tested using questions developed by the researchers and validated by experts and two interviewed families. Data was analyzed using thematic analysis method and regression and correlation tests.

The analysis provides some evidence that engagement with science is a powerful factor in rehabilitation. Hierarchical regression analysis shows that contextual scientific knowledge is the best and only predictor for parental advocacy skills (R2=0.43). Although, general scientific knowledge is the best predictor for contextual knowledge (R2=0.17), and moderately correlated to advocacy skills, it is not a predictor of advocacy skills. In this sense, scientific knowledge plays a major role in the lives of hearing impaired, even if they do not list it as a resource for successful integration into hearing society.

Strand: Publics
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Sevilla
Paper ID: 89

Comparative Study Of The Frequency Of Use Of Natural Therapies Among The Spanish Population And Their Public Image On Digital Media

Carolina Moreno Castro
University of Valencia, Spain

Co-authors: Emilia Hermelinda Lopera Pareja

The Observatory of Natural Therapies published in 2008 the results of a quantitative study, the only one so far in Spain, indicating the frequency of use of some alternative therapies. For this, 2,000 individuals were interviewed, aged between 16 and 65, with a sampling error of +/- 2.25%, and a confidence level of 95%. Based on the eleven techniques most often reported on the survey to improve some ailment, we did a boolean search in online newspapers to know how representative these techniques are in newspapers and what bias is transmitted (positive or negative). The frequency of use of the techniques were: yoga, 32.5%; acupuncture / TCM, 31.5%; massage, 28.4%; Homeopathy, 23.0%; Reflexology, 16.1%; Tai-chi, 13.3%; Flower therapy, 12.0%; Lymphatic drainage, 9.1%; Naturopathy, 8.8%; Reiki, 8.4%; Osteopathy, 8.2%; Shiatsu, 3.9%; and Kinesiology, 2.1%. We have selected the period from January 1, 2015 until July 31, 2015, to conduct searches and analyze the texts of the following newspapers: ABC, El Pais, El Mundo and La Vanguardia. This period of study coincides with a major social controversy, widely discussed in the media and on social networks. A popular talk show host of TVE, the Spanish public television, was speaking in her program on health effects of aromatherapy, when she said: "the smell of lemon can prevent cancer". Many experts criticized public television for promoting alternative techniques on their health programs. In the wake of this event different techniques of natural medicine (in favor and against) began to appear in the media. In this study, we assess the scope of this event in the transmission of social imaginary and compare if the frequency of use of these therapies is linked with the frequency of media presence with a positive image.

Strand: Publics
Type: Paper
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Sevilla
Paper ID: 98

The Influence Of Environmental Perception And Media Coverage Upon Risk Perception And Pro-Environmental Engagement - A Case Study By The Horse Chestnut Leafminer

Bernhard Goodwin
Technische Universität München, Germany

Co-authors: Rebecca Rogers, Werner Heitland, Cornelia Wallner, Anja Uretschläger, Wolfgang Weisser, Hans-Bernd Brosius

Information about environmental changes are communicated to the public mainly through mass media. However, individuals judge risks to the environment not only based on media information, but also on their own perception of the environment. Understanding how personal risk perception of the public depends on media information and perception of environmental change is essential for effective environmental communication from scientists to the public. Within a 2x3 experimental design we investigated (1) the importance of the publics' perception of environmental changes and (2) the influence of the style of newspaper articles on publics' risk perception of an environmental change and the resulting actions by the citizens. As case example we used the invasive horse chestnut leafminer Cameraria ohridella. The leafminer causes a distinctive pattern of damage to white flowering horse chestnut trees (Aesculus hippocastanum), which is clearly observable for citizens. We set up a quantitative survey (N1=479) in 12 German regions in 2014, showing either high or low infestation level. Randomly chosen people (aged between 18 and 70) were assigned to one of three newspaper articles (tabloid, quality-journalistic, popular-scientific) differing in their journalistic representation, complexity and fragility of content with respect to the chestnut leafminer. The articles were incorporated as an experimental stimulus within the online questionnaire, which included variables testing "personal perception of an environmental change", "subjective risk perception" and the behavioral intention "to inform other people". Our results indicate that (1) the perception of an environmental change is a highly important factor contributing to risk perception and adaption of environmental behavior. (2) We could show that information by newspaper articles in general increase risk perception, but that the article with medium level of complexity and fragility (quality-journalistic article) showed the greatest effects on change of risk perception.

Strand: Participation
Type: Panel
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Assos
Paper ID: 280

Science at the Margins

Eduardo Saenz de Cabezon
Big Van, Scientists on the road, Spain

Co-authors: Claudia Aguirre, Mariana Carnalla Cortés, Helena González, Xavier Luri, Oriol Marimon, Ana Payo, Irene Puerto, Javier Santaolalla

The main question we address is how (new forms of) science communication can contribute to social inclusion, and therefore to social cohesion in different contexts. Our starting point is twofold:

1- We understand science as part of culture, which we believe should be accessible to every member of our societies.

2- We consider every member of the society as an important part of it, also those that are usually considered at the margins, to whom culture, in particular scientific culture is not usually available.

Science communication can help in this context to empower individuals and communities.

The main aim of our panel is to find ways to implement the role of science communication as an agent of social cohesion in activities that involve actual scientists, new forms of science communication, and direct interaction with people and communities at the margins of their societies.

Participants in the pannel will bring together different experiences and perspectives on the role of science communication as an agent of social cohesion:

- Matemorfosis (México): mathematics at the public squares of isolated and impoverished communities at the sierra of Guanajuato

- Territorio Expandido (Colombia):Expanded territory is a project of Parque Explora (science museum) and the Secretariat of Youth. Youngsters from communes 8, 9 and 12 of Medellin recognize and transform their territory through networking and collaborative processes. The project proposes to share knowledge around four themes: robotics, biodiversity, social cartography and communications. Each of these lines as a pedagogical route takes the philosophy of "do it yourself and with others" in the communities of Medellín.

- Big Van,(Spain): stand-up scientific monologues and workshops in prisons, groups of women who suffered home violence, etc in different cities around Spain.

All presenters will share their ongoning experiences and thoughts on the processes and results of their activities.

Strand: Trends and policies
Type: Panel
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Efes
Paper ID: 375

Tracking the Careers of Science Communication Postgraduates

Padraig Murphy
Dublin City University, Ireland

Co-authors: Clare Wilkinson, Maarten van Sanden

In recent times, the PCST network has increased its dedication and support to young researchers, following their pathways into various employment sectors that involve science communication. This proposed panel will pull these global experiences together. Two proposed papers on the panel include:

'The harder you work, the luckier you get: : Reflections on life after a science communication post-graduate programme at UWE, Bristol' from Clare Wilkinson, Associate Professor in Science Communication at University of West England, Bristol. Organised in conjunction with UWE's Science Communication Unit, their MSc programme team views employment after graduation as a partnership, providing the resources, networks and knowledge, enabling students to then locate employment. A 2013 survey demonstrated 88% of graduates working in science communication. This paper will draw on observations from graduate surveys, work with employers and LinkedIn community.

'Science Communication PhDs in work and practice' Maarten van der Sanden, assistant professor in Science Communication at Delft University of Technology van Sanden has been involved in research and training in the area of PhD-to-employment for science communicators. Interactions between research and practice are explored. He proposes that the PCST network, in which practitioners and academics co-exist, might support or enhance possibilities for testing in practice or research-sabbaticals for practitioners in a global network.

The panel will also reflect on a new survey of graduates carried out by P Murphy, Dublin City University.

Strand: Participation
Type: Workshop
Date / Time / Room : 28-04-2016 / 15:00-16:15 / Truva
Paper ID: 388

"What question would you want science to answer"- A Dutch experiment in involving audiences in formulating a National Research Agenda

Alex Verkade
De Praktijk, Netherlands

Science benefits from an active public dialogue about the opportunities and risks of groundbreaking developments. In 2015, Dutch citizens were invited to provide input for the creation of a National Research Agenda. In the first half of 2015 everybody could submit their question to science. Over 11.000 questions were submitted. These questions were used as a starting point for the dialogue that results in the new National Research Agenda in November 2015.

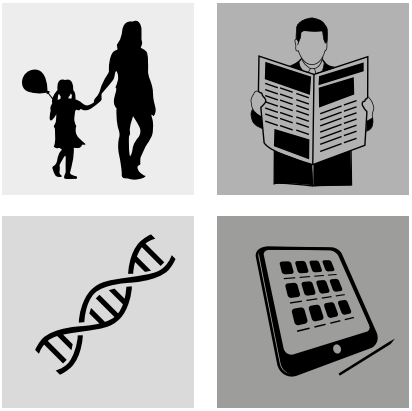
The Dutch National Research Agenda project is an example of Responsible Research and Innovation - it is also an interesting case for science communicators. The submitted questions, for instance, can teach us many things: which big issues submitters care about; what they understand or expect from science; and which subjects they would want to know more about.

But: who are these submitters? Who helps determine the future of science? And who doesn't? In this Dutch case, younger people don't. The submitter population skews heavily towards men over the age of 40. We think this is a missed opportunity.

Therefore TechYourFuture and De Praktijk, together with science center NEMO, the Royal Dutch Academy of Sciences and the Ministry of Education have started a project to bring the National Research Agenda to high schools. The project will have yielded its first results by the time the PCST conference takes place.

In this workshop, we will present and review the case of the National Research Agenda from a science communication viewpoint. We will actively involve the audience in discussing questions like: How can we use such a project to communicate science? How can we, as science communicators, help involve a representative sample of society?

The National Research Agenda project was initiated to formulate an agenda for scientific research - but could it also help set the agenda for science communication?



PCST 2016

Public Communication of Science and Technology

April 26-28, 2016 / Istanbul - Turkey

PERFORMANCES

Wednesday, 27 April

Strand: All
Type: Performance
Date / Time / Room : 27-04-2016 / 16:00-17:45 / Kapadokya
Paper ID: 64

Jack is late. Air Pollution And Health At A Bus Stop

Federica Manzoli
IFC CNR, Italy

Co-authors: Liliana Cori, Giulia Bonelli, Fabrizio Bianchi

Jack is a young boy at a bus stop. He's worried: the bus doesn't arrive and he's afraid to be late at school. His teacher will be angry. She will call the parents, who will get worried. And his friend Jimmy will be very disappointed not to get back his videogame.

That's the first scene of an uncompleted theatre script, which develops through other four characters, entering the stage: Jack's teacher, a pediatrician, a technician expert of environmental monitoring, and the major of the city. They all gather at the bus stop, reflecting on the air pollution and its effect on health, each from his/her own perspective.

The theatre script is the base for a 75 minutes laboratory to discuss about this topic in a simple, constructive and friendly way, with groups of people from different backgrounds and ages (max 25 participants), in a few steps: completion of the script by the participants themselves; performance; elaboration of final recommendations to improve the state of the local environment - and consequently of the health of its inhabitants; their dispatch via mail/local newspapers/social networks to the local decision makers.

In our presentation, we will: show the structure of the activity; discuss its application in the field of risk communication - and in a controversial topic as the environmental health; face the theoretical and practical issues involved.

This laboratory was created by the Environmental Epidemiology Unit at the Italian Institute for Clinical Physiology (National Research Centre) and performed in science festivals and schools in Italy. It is one of the communication product developed inside the LIFE+ GIOCONDA project (2014-2016), aimed to build environmental health governance tools that include the young citizens voice. An abstract regarding other research results of the project GIOCONDA has been submitted under the Conference presentation format "individual papers".

Strand: All
Type: Performance
Date / Time / Room : 27-04-2016 / 16:00-17:45 / Assos
Paper ID: 102

Three Decades Of Science Communication In Mexico: A Professional Network Called Somedicyt

Patricia Magana
Mexico

Co-authors: Jorge Padilla, Lourdes Patino, Ernesto Marquez

Theme:

Evaluating public communication of science and technology

Science communication activities in Mexico initiated about 40 years ago. The objective of incorporating science into the general culture of the population is related partially to educative processes. This is a challenge due the wide extension of the country, with thirty million youngsters between 15 and 29 years, with a great cultural diversity and many social and economic contrasts. In 1986, nineteen professionals interested in science communication founded a network called "Sociedad Mexicana para la Divulgacion de la Ciencia y la Técnica A.C., Somedicyt" (Mexican Society for Public Communication of Science and Technology) to promote science culture. The objective of this video is to make a critical review of the thirty years of this Society. Somedicyt has now about 250 members (academics, students, and journalists) most of them full-time science communicators involved in a variety of activities. Members of the Society give lectures, organize workshops for children, youngsters and adults, design exhibitions, publish magazines and perform many other activities in TV, radio, Internet, etc. Somedicyt had held 20 Conferences in which participants discuss the outlook of the science popularization in Mexico. The Society membership is divided in eleven different sections to improve their activities and keeps a critical point of view of many national and world topics where science can add arguments for decision making. The Society is linked to other Latin American organizations that promote science culture in America. With the support of the National Council for Science (CONACYT) Somedicyt has recently made an evaluation of science popularization activities in several regions of the country, in order to analyse the scope and effectiveness of the different programs and activities. Internet has now widened the potential activities of the Society with a very robust site containing articles, radio, podcasts, videos, on line courses and an online library.

Strand: All
Type: Performance
Date / Time / Room : 27-04-2016 / 16:00-17:45 / Efes
Paper ID: 161

BigVan: Scientists on the Road (1' 30")

Oriol Marimon
Researcher and Science Communicator, Spain

Co-authors: Eduardo Saenz de Cabezon, Helena González, Javier Santaolalla, Ana Payo

BigVan (www.thebigvantheory.com) presents a breaking scientific show based on stand-up comedy: "BigVan: Scientists on the road". This theatrical performance is designed to engage the general public with scientific and technological concepts through 3-4 stand-up comedy solos of 10-20 minutes length. A 15 minute "query&answer" (Q&A) session follows the show in which the audience is invited to ask, live or by Twitter, all the scientific questions they had always wanted to know.

The added value of this show is that performers are cutting-edge scientists from all STEM disciplines with years of experience in performing arts. As a result, the audience is engaged with the latest advances in scientific and technological research. The Q&A session generates an interactive dialogue that breaks distances between researchers and the spectators. The audience often throws in general questions based in scientific myths that BigVan contributes to debunk.

Connexion between audience and researchers goes further thanks to its Twitter, Facebook and Instagram. BigVan adapts its live show to the digital era, and maintains the dialogue with the public through social media, sharing scientific humour, rigorous scientific content and answering questions that audience and followers have about science and technology.

The effectiveness of the show in teaching and entertaining the general audience with science is attested by the fact that BigVan is being invited to perform all over the globe! They first came to prominence as an insightful scientific stand-up show in Spain starting in June 2013. Since then they have expanded and now have acted in international artistic festivals and scientific institutions such as FameLab, LH-Comedy, RedPOP or ScienceSlam Mexico & Uruguay, among others.

The Art-Science-SocialMedia cocktail, together with the BigVan passion for science-communication, drive them to push frontiers and help opening the scientific world for the general public by stimulating and surprising the audience.

Strand: All
Type: Performance
Date / Time / Room : 27-04-2016 / 16:00-17:45 / Valencia
Paper ID: 146

The Two Cultures, and Science Communication

Toss Gascoigne
Australia

Co-author: Jenni Metcalfe

The proposal is for a dramatic presentation centred on CP Snow's Two Cultures.

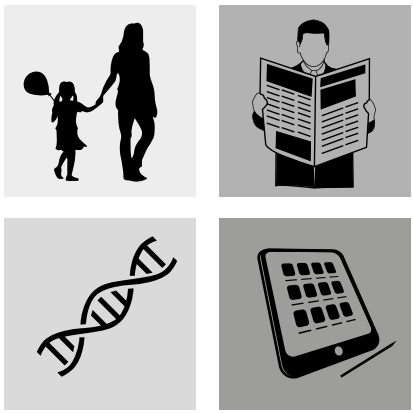
On May 7 1959, Snow delivered the Rede Lecture at Cambridge University. Snow said that society was divided in two parts, those educated in the arts and humanities, and those from science and technology. The two sides could not communicate and this had serious implications for society.

The ruling classes tended to be educated in the humanities. Without any understanding of science, they were ill-equipped to frame policies that would lead to a prosperous modern Britain.

Their ignorance of science was compounded by their lack of interest, and their contempt for scientists who 'lacked culture and education'. Snow wondered how many of them could explain the Second Law of Thermodynamics. The Two Cultures ignited a controversy that rages today.

The proposal for Istanbul is a theatrical examination of this controversy. Is there a wall between the two cultures? Can people talk productively across this barrier, or is it the source of confusion, uncertainty and poor policy? Is science communication an attempt to patch over these difficulties, and can it succeed?

The play is in development, and the proposal is for a 45 minute session presenting a substantial extract. The cast will be drawn from participants in the conference, each given a role and character to explore.



PCST 2016

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April 26-28, 2016 / Istanbul - Turkey

POSTERS

Strand: Digital age
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 67

SciChallenge - Project Presentation

Chris Gary
Vienna University Children's Office, Austria

Co-author: Karoline Iber

Science education is tremendous in shaping the present and future of modern societies. Thus, the EU needs all its talents to increase creativity and competitiveness. Especially young boys and girls have to be engaged to pursue careers in Science, Technology, Engineering and Mathematics (STEM). However, statistics still show that enrolment rates in STEM-based degree programs are low and will lead to a workforce problem in industries, especially in many of the new member countries.

The SciChallenge project, supported by the European Commission under H2020 from 2015-2017, focuses on developing novel concepts to actively integrate young boys and girls in science education using a contest-based approach to self-produced digital education materials from young people for young people.

Driven by inspirational topic sheets about exceptional and less common areas of academic and applied research, guides and toolkits created through this project and distributed by partner schools, teachers and other youth-oriented institutions, contestants (individuals or groups) between the ages of 10 to 20 will generate creative digital materials (videos, slides, or infographics). The initiative will broadcast and distribute content over various social media channels and aggregated on a modern SciChallenge Web Platform to generate wide reaching awareness and promotion. Winning submissions will receive prizes funded by science-oriented industry and stakeholders.

Intelligent cross-sectoral positioning of various awareness modules on the SciChallenge Open Information Hub will increase awareness on science careers and open opportunities for youngsters on internships or taster days in STEM through the strong involvement of related organisations and industries. Additionally aggregated information on science events (slams, nights, festivals etc.) is shared.

With this multi-level approach, SciChallenge will boost the attractiveness of science education and careers among young girls and boys leading to more public engagement in science, economic prosperity and global competitiveness on a pan-European level.

Strand: Digital age
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 72

Einstein vs. Newton: The Historical Influence Of Great Scientists Based On Big Data Analysis

Guoyan Wang
Department of Scinece Communication, University of Science and Technology of China, China

Isaac Newton and Albert Einstein are by far the most influential physicists. However,the debate surrounding who is more influential has been inconclusive for more than half a century. In 2005, the World Year of Physics, according to a poll conducted by the UK Royal Society, Isaac Newton was considered to have a greater influence on both science and humankind than Albert Einstein. However, the issue can now be settled quantitatively in the era of big data. This analysis, based on 36.5 million of historical books and 91.3 million of academic papers in history, shows that Einstein's historical influence may have already exceeded that of Newton since 1980 in public and since 1948 in academia. And the fact dramatically differs from UK to Germany where the two scientists were born. Einstein's main influence comes from his outstanding contributions to the theory of General Relativity and quantum physics, which lead to a new era in modern physics. Isaac Newton made a glorious peak in the 18th and 19th centuries but showed a 'long tail effect'in the 20th century, as the wheel of history is always moving forward with constantly emerging new developments and the gradual fading away of old things.

The historical influence of individual indicates the contributions and footprints on human history and civilization, which is also the footprint of public understanding of great scientists in the history. Here we show a case study on Einstein and Newton to introduce a new evaluation method for judging a scientist's influence in the public by counting the frequency of the scientists' names appearing in historical archives. Our research method is based on the assumption that those who are often mentioned by the official media carriers can be regarded as the figures with great historical influence in the public.

Strand: Digital age
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 167

What's up With Crossmedia? - How To Meet Diverse Information Needs And Communication Preferences

Klaus Rümmele
Germany

Co-author: Margarete Lehné

The marketing and communications professional of the future will have to be prepared to meet the needs of diverse audiences - and anticipate their questions: What kind(s) of information are they looking for? Which are the media and devices of their choice? How keen are they to interact?

Expanding crossmedia activities will play a key role in future university communications in such areas as electronic press kits and combinations of video and magazine with campaigns. Crossmedia consequently seeks to link content and add value. Among the key questions to be asked is: When does switching media, say, from text to video or audio, incite recipients to participate? To come to a solution, a basic crossmedia guideline is essentail.

Increasingly the media themselves are upping the game: many newspapers and magazines, tv and radio stations have their specific online versions. Not all of them, however, may have the resources to produce the amount of content they are looking for; good audio-visual material provided by communications departments alongside, for example, a press release will thus probably attract interest with editors.

Crossmedia provides an opportunity to convey current topics both objectively and vividly. This workshop will introduce best practice examples and discuss how crossmedia can work - and what the challenges are.

Strand: Digital age
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 173

YouTube Your Science: Science To Reach Students Of Twenty First Century

Javier Santaolalla
Big Van, Spain

Co-author: Big Van

Youngsters of the twenty first century use Internet as their favourite channel to communicate and get information. Videos are shared daily on different platforms, especially on YouTube. Can we benefit from this to communicate science? How can we adapt classroom contents to be delivered in this new format? What are the ingredients for a successful science video that can be shared among young people or even go viral? Can we use this material in the classroom? Big Van (www.thebigvantheory.com) is a group of scientists using comedy to bring science to the general public. Part of the activities of this group include researching new techniques to educate science. Big Van members run two YouTube channels [1] [2] and a videoblog [3]. Channels [1] and [2] are produced by a big TV producer, Endemol, and have more than 150 thousand views each, and the videoblog is sponsored by a big national spanish newspaper, El Mundo. YouTube has created a new way to communicate. In this presentation we discuss its use as a science teaching tool, useful tips to create your own videos and how use the existing ones to improve your communication inside and outside the classroom.

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[1] Date un voltio - https://www.youtube.com/channel/UCns-8DssCBba7M4nu7wk7Aw

[2] Derivando - https://www.youtube.com/channel/UCH-Z8ya93m7_RD02WsCSZYA

[3] I LOL ciencia - http://www.elmundo.es/ciencia/i-lol-ciencia.html

Strand: Digital age
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 350

Use of Mobile Device Apps To Reinforce Field-Based Learning

Jan Dook
The University of Western Australia, Australia

Co-author: J.C. Partridge

A suite of food web apps have been developed for iPhone and iPad by The Centre for Learning Technology (CLT) at The University of Western Australia (UWA) and made freely available through iTunes. The apps allow school users to construct food webs using a set of organisms that include producers, herbivores and carnivores.

The apps focus on native Australian, and in some cases Western Australian (WA) species and currently showcase four contrasting ecosystems in WA. Ecosystems featured are a tropical savannah (Kimberley region), a freshwater wetland (Herdsman Lake) in metropolitan Perth, a jarrah forest in the Perth hills and the Perth coastal marine environment.

The apps are aimed at Year 7 students (12 years) and target the Australian National Curriculum in Biological Sciences. As well as introducing students to unique Australian plants and animals, the app encourage students to think about trophic connections between organisms and how energy flows through an ecosystem. An introduced species can be added to each of the food webs so students can understand how invaders, for example cane toads, disrupt food webs.

The apps allow students to explore inaccessible ecosystems and are designed to complement field trips thereby reinforcing field-based practical learning experiences.

Evaluation of the apps is underway. Teachers will be surveyed regarding app usability and value of the apps as learning tools in the context of the learning objectives of the Australian curriculum.

Partner organisations involved in app development include the SPICE program within CLT at UWA, WA Gould League Inc at Herdsman Lake, Oceans Institute UWA and the Western Australian Department of Parks and Wildlife.

Strand: Digital age
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 362

Connecting Scientists And The Public In Global Online Dialogues About Science

Heather Doran
University of Aberdeen, United Kingdom

This poster will describe ways in which public engagement with science can be achieved via social media. In 2015 I was awarded a prestigious Winston Churchill Memorial Trust Travel Fellowship to gather international perspectives on the use of social media by scientists and communicators.

My project explored the many opportunities that exist for scientists to engage with public audiences via social media. It also explored training and barriers to engagement. I travelled to the USA, Canada, China and Japan to explore global perspectives in this area. Meeting with scientists and communicators in university institutions such as MIT and in leading organisations like NASA I gained a wide range of case studies, viewpoints and perspectives about science engagement via social media.

Support and advice for how scientists can get the most out of social media is often sporadic and is presented with different foci depending on whether training is delivered by individuals, institutions or funding bodies. Different policies and opinions can lead to confusion as to whether social media should be used and if can it offer real benefits. Individual social media accounts have also come under scrutiny for being 'self-promoting'. The use of social media for engagement with public audiences is not yet recognised as an important tool and skill within scientific careers and is seen as a fringe activity. Should it be? What happens when the use of social media does backfire? Does social media offer a platform for the underrepresented voices within sciences?

This poster will explore the environments in which engagement via social media can thrive and how communicators and scientists can work together in this arena for overall benefit. It will also include top tips and advice from leading online engagers that will help others to engage successfully with the public online.

Strand: Digital age
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 397

Digital Research Notebooks - A Tool For Communicating The Products And Processes Of Research

Joao Fernandes
New University of Lisbon, Portugal

Co-authors: Joao Fernandes, Luis Barbeiro, Ana Rita Claro Rodrigues

(Ana Rita Claro Rodrigues will be presenting this poster at the 14th PCST Conference)

Communicating the products of research is one of the major concerns of Science communication. However, the processes that lead to the results tend do be less discussed, or in ways that non-experts have difficulty to assess and participate. With the growth of collaborative projects which involve many different expertises, including very diverse research areas and participants from different publics, there seems to be an ethical and democratic need to have ways to openly communicate the process of research, for assessment and/or for participation. Communication tools based on the blogging metaphor have been tried, but they seem not to afford an in-depth access to raw data and interpretations by others with interest in the project.

Doing your collaborative investigation centred on a digital research notebook might afford closer interaction between all participants, and we claim, raise the quality and the ethics of the research being done. The digital research notebook affords possibilities of integrating all aspects of research and granting different levels of access to participants according to their involvement in the project, from access to just journal entries, raw data or analysis. We have developed a Microsoft OneNote notebook template, workflow and toolbar to support the entire qualitative research project and the communication of research projects and this poster will try to show some of its main features and affordances, useful for the science communication research community.

Strand: Digital age
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 473

The Use Of Social Media At The Pcst2014 - A Case Study

Meghie Rodrigues
Campinas State University, Brazil

Co-authors: Germana Barata, Rafael Evangelista, Carina Garroti, Daniela Klebis, Maisa Oliveira, Marcela Salazar, Graziele Scalfi, Sarah Schmidt, Giselle Soares

Presenter: Germana Barata (senior researcher, Labjor-Unicamp)

If now it is "difficult for scientists to remember how they worked without the internet" (Rowland 1998), it is possible that in a few years' time, scientists and communicators will also find it difficult to remember how science was communicated to non-experts without the aid of online media. Followed by the development of the web 2.0, social networks have played a significant role in scholarly communication (Widén-Wullf, 2011). During the 13th PCST Conference, which was held in Salvador, Brazil, networks such as Twitter, Facebook, Instagram and the official blog of the event were important tools to generate engagement among participants, making the amount of retweets, mentions and online conversation be part of an unprecedented experience in the event. In this paper, we want to reflect over social media as a tool for engagement in science communication by taking the experience at the PCST 2014 Conference as a study case. Statistics and metrics on the flow of messages throughout social media channels ranging days before and after the Conference tells us that the experience was well-succeeded: by May 8, PCST2014's Twitter account had around 200 followers and almost 500 interactions, more than 700 "likes" on its Facebook page and around 300 images with the #PCST2014 hashtag on Instagram. The event generated around 40 newspieces in Brazilian and international media and six blogs talked about the conference. Qualitative analysis has shown that though participants are experts in science communication from different fields, the majority of comments were short descriptions about the talks, therefore good for people outside the event - criticism was less present. We believe that this successful experience can be replicated in other editions of the PCST Conference and has the potential to attract and engage a wider part of the science communication community.

Strand: Ethics and arts
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 257

Pioneering Art for the Planet Sustainability In The Widest Community Of Earth Scientists In Europe: Our Experience At EGU 2015

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Presenter: Aquiles Negrete, aqny@unam.mx

Scientists and Artists working together for the planet sustainability is a trend in science communication getting day by day new adepts all over the world. For instance, some Science Institutes have introduced the Artist-in-residence, to increase the opportunities of co-operation to spread in a new intriguing way scientific research. Nevertheless, our Session at EGU 2015, the greatest venue in Europe gathering more than 10.000 scientists involved in the different geophysical disciplines, was the first of the kind. The session was warmly welcomed and successful, with the participation of digital artists, scientists and performers, visual artists, musicians, geologists and geophysicists, photographers and paleontologists. We would like to share with the world wide community of science communicators our experience as pioneers in such circumstances. This will be the occasion to describe the work we have done to establish the first nucleus of a community that can facilitate the identification of more and more effective methods to educate people to a life-style respectful of the planet and its inhabitants. It would also be the occasion to show the motivations behind our attempt to bridge the two cultures bringing together the communities of scientists and artists in a mutual and fruitful co-operation.

Strand: Media practices
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 101

Science Culture Magazines. Where are They Headed in Mexico?

Patricia Magana
Mexico

The educational problems in México are permanent challenges for institutions and specialized groups, mainly for those involved in science communication. Several studies and polls confirm that young people only read what is strictly necessary for school purposes and consequently involves a cultural disadvantage for society. This scenario represents an important issue for institutions that edit cultural and scientific journals. Nationwide, there are more than thirty science culture magazines aimed to different audiences. Most of them are professional designed, edited by universities or science centres; some of them focus on particular topics while others are multidisciplinary. Most of the printed magazines have developed electronic portals to maximize their public but they are limited by the Internet coverture in such a big country. In consequence they maintain their paper formats but they have to compete in bookstores and newsstands with all kind of magazines. In 2012 the National Council for Science in Mexico (CONACYT) developed a new Impact Index to evaluate the quality of the magazines related to science in order to generate more academic support. After two periods of evaluation of their objectives, contents and designs there are nineteen of them in the index. They are aimed to a variety of audiences with the main objective to contribute to enrich science culture in Mexican population; some are focused in general themes and others approach national problems from a scientific critical perspective. In 2014 the Mexican Senate decided that all publications produced in institutions with federal support should be of opened access. The objective of this paper is to emphasize all the challenges the magazines have, especially in the Internet because there are many sites that have a considerable amount of not validated scientific information. Evaluating the results of electronic impact is now a major task for these magazines, in a country as Mexico where Internet connectivity is still limited.

Strand: Media practices
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 116

The Media Functions Of Informational Pictures In Science Communication

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Today many people are not interested in science as they don't understand the subject. Therefore suitable media have to be created to attract the people for science. Science communication is a process of fuzzification: Sharp terms of the scientific world will be converted to fuzzy terms of the everyday world. According to the approaches of Schütz and Böhme, the level of that scientific world is very high, when it is compared to the level of the everyday world. The public has to invest a high amount of activation energy to start the process of understanding. The task of useful media is, to reduce the difference between the level of the scientific world and the level of the everyday world. As a result the needed activation energy will decrease. Besides this catalytic function, media has a transmitter and a carrier function in the process of public understanding of science.

Since the social media dominate the mediatized communication of the digital age, visual media like pictures, images and diagrams, which are classified as informational pictures, get an increasing importance in knowledge transfer and science communication. Today, information has to be communicated in a quick way and as simple as possible. A survey of Mokros and Tinker brought up, that learners often believe that the content of informational pictures can be caught with one view. The consequence is that the users often process the content of an informational picture in a superfacial way.

In this paper a survey about the media functions of informational pictures in the process of science communication will be presented, besides the newest results about the understanding, perception and communication of knowledge of informational pictures.

Strand: Media practices
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 165

The Quality Of Science Communication, In South Africa, Through The Media 2014 to 2015

Anton Binneman
SAASTA, South Africa

This paper will reflect on the quality and quantity of science communication through broadcast, print and online media in South Africa. The paper will focus on the key strategic focus areas as identified by the Department of Science and Technology. Quantitative analysis will be done on all media where the DST, SAASTA, the NRF and its facilities were mentioned for the financial years 2014/15 and 2015/16. The qualitative analysis of the media will investigate the quality of the content of the media based on a randomly selected sample from the same data. The findings of this research will give direction in terms of strategically placing media and collaborating with media houses in placing science content, as well as the role of science centres in this strategy.

Strand: Media practices
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 196

Coverage Analysis of COP 16 and Pandemic Influenza A (H1N1) in Mexican Television News: An Approach From Science Journalism.

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Television reaches around 90% of households in México, placing it as the most common reference for news. Therefore, a diagnosis of science related issues on TV newscasts opens the possibility of increasing the quality of news coverage in this specific area.

We analysed the coverage of two specific news stories with potential science content -the A H1N1 influenza epidemic in Mexico and Cancun's Climate Change world summit-- by 4 prime time Mexican television newscasts. Our quantitative results were acquired by using the General Protocol for TV, developed by the Iberoamerican Network for Monitoring and Formation on Science Journalism. We then explored the coverage qualitatively through the Citizen's Interests Table, a tool developed at Mexico's National University for this very purpose.

We examined 233 broadcast pieces, identifying such variables as framing, visual resources, duration and points of scientific information. Our results reveal the coverage as dominated mostly by brief notes mainly with political and government sources, in contrast with the very few scientific sources and explanatory resources. By tracking specific pieces of scientific information identified as essential to potential citizen's interests, our results suggest that the coverages wouldn't allow the non-trained viewers to make significant decisions based on the science relevant to the stories.

Strand: Media practices
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 250

How Journalists Ask Scientists? The Interview As An Object Of Study

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The genre of interview in science journalism has been analyzed in limited ways, specially in a Latin American context. The absence of research in this specific topic has made difficult to identify general criteria for assessing or performing good interviews in order to get useful information for generating high-quality journalistic products. Here, we analyze 30 interviews performed by Mexican journalists to researchers specialized in different topics of Physics. We witnessed and recorded each interview. We then created a protocol to analyze interviews based on different criteria such as: length of the interview, kind of questions made by journalists, their sources, previous research and critical attitude towards science, among others. The first aim of this work is to evaluate our own methodology to tests its functionality and replicability in different countries and contexts. Also, according to the type of questions that journalists made, we conclude most of them lack of enough journalistic research work to make useful interviews in order to develop high-quality journalistic products. This means most of interviews are guided by the principle of authority, leaving journalists defenseless, unquestioned towards scientists interests and unable to challenge or judge on the validity of the specific research work they are reporting. We see this work as the pilot of a broader analysis that seeks to evaluate different types of interviews made to scientists that can allow us to make comparisons between media and topics in different Latin American countries and, finally, to propose a methodology that can help journalists to report science accurately based on well-planned, structured and in-deep interviews.

Strand: Media practices
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 438

Science Talkshow on Radio Project

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DoctoRabbit Science Inc., Indonesia

Almost all cars have a radio installed. Public use radio as their source of news as well as entertainment media while they are driving. For a big city with a highly traffic jam, radio is a lovely friend that always accompany the cars' drivers and passengers. Radio is also a media used in all houses besides TV. Housekeepers turned on their radio while they are doing the housekeeping. We could say that radio is the most popular media.

Radio could be an excellent media for science communication. The tough area to use radio succesfully for science communication is to make it attractive for public to listen. The absence of visual performance would challenge the listener to create imagination on the talk. The host of the show or the science communicator should develop an interesting topic and a good strategy to deliver the message.

DoctoRabbit and Pustekkom (the communication media institution for education under the Ministry of Education & Culture) have been developing a science talkshow on radio. The first project consists of 13 episodes. Each episode is 60 minutes long and divided into 4 segments. The first segment is the opening session by the host that talking about the issue for that episode generally. At the second segment, the host let a researcher talk about the science and technology behind the topic. The third segment is an interactive discussion among the host, the researcher, a guest act as lay public, and listeners. The last segment is a wrap up by the host. Language use is in Indonesian language (Bahasa Indonesia). The talkshow is going to be put on the internet as podcasts, too. Feedback from listeners is collected through email, twitter, and facebook, and will be used for the project evaluation.

Strand: Media practices
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 456

"Science in the Air": Old-fashioned Media Meet Digital Tools For Science Communication

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Co-authors: Daniella Do Valle, Elisa Gonçalves Andrade, Paulina Maia Barbosa, Adlane Vilas-Boas

The initiative "Ciência no Ar" (Science in the Air) was started in 2011 at the Universidade Federal de Minas Gerais, Belo Horizonte, Brazil. It has successfully brought science to the metropolitan region population through nonstandard approaches, which include science texts in buses and broadcasting on the university radio station. These efforts yield outreach results, and the project has gained public recognition locally and in the academic sphere. However, it has become evident that digital tools are essential to further promote the project. For this, blogging and social networks have been used. The present proposal aims to gather data on reader/listener profiles and participation to evaluate outreach and engagement. Information from the project's Facebook page, such as number of views, "shares" and "likes", are gathered for each post and added to a growing database. The collected data will be studied to learn which type of posts is more popular and this will be related to readers' engagement. The findings may help directing how future information will be presented. Also, is the participation in social networks a gauge for initiatives with old-fashioned tools of communication? Radio and readings in buses may reach a public that may not have access to digital tools. The purpose is to maintain this data collection and analysis throughout the existence of the project, but the results to be presented will report data from 2011 to present time. This work aims to discover effective methods for presenting scientific content on interactive platforms in a way that the general public can be encouraged to participate in the discussion about science. Success in this endeavor can provide projects such as "Ciência no Ar" with means to continue growing in the digital age without missing the link with old-fashioned methods and media for science communication.

Strand: Museums and centres
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 128

Smart Science Center

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Co-author: Wenbin Xiao

Information technologies and networks have been changing learning ways. How could science centers take advantage of such progresses to better engage the public for their lifelong learning to achieve public science communication? The article proposed "Smart Science Center" (SSC), an intelligent model delivering science and technology information whenever and wherever possible on account of advanced information technologies such as Internet of things, cloud computing, social networks, and living labs etc., to provide customized learning experiences to the public. The article elaborated the SSC model in an ex<x>pression SSC = i * 3A, here "i" standing for explosive information and "3A" abbreviating for "Anything, Anytime, Anywhere". The SSC model would provide a multi-dimensional information network, or the knowledge system customized for each individual's lifelong learning. Each exhibit would not only introduce one specific science principle, but also provide massive related information access to history, culture, arts and other domains besides science. Engagement would be expanded in depth and width. The SSC would become a no-wall entity without closing time, and it could be experienced anytime via handheld devices of visitors all around the world. Participation could be arranged beforehand and continued after visiting. Engagement would be expanded geographically and spatially. The article gave detailed explanation for features of the SSC model in terms of smart perception, smart experience, smart learning, smart management and smart sharing. Finally the article introduced steps and projects that the Guangdong Science Center has been working on to build up such SSC model.

Strand: Museums and centres
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 203

Object-centered Learning In Science Museums: A Systematic Literature Review

Anne Land-Zandstra
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Co-author: Saskia van de Velden

One of the key characteristics of science museums is that they use scientific objects to present and communicate science to the general public. The authentic objects and experiences are often named as one of the important factors of learning in informal environments. Many visitors, especially children, can be overheard asking "Is this real?" However, research about the role authentic objects can play in museum learning, meaning-making, story-telling, or sparking interest has been minimal.

Authenticity in the context of science museums can be defined as objects that have evolved in the real world or were produced for certain real-world purposes. An object can be considered authentic for different reasons: a link with history, providing a certain charisma or a sense of wonder, a rare or even unique object, functionality (working properly), or being a natural specimen. Authentic objects can play different roles within the context of science museums. They can serve as the main information carrier, they can provide context, tell a story, inspire wonder, create atmosphere, or they can be used for esthetic reasons.

In this systematic literature review we give an overview of peer-reviewed research on the role authentic objects can play in (science) learning in museums. What does object-centered learning in museums look like? What type of learning outcomes are being addressed (knowledge, skills, attitudes, interest, behavior)? How does authenticity play a role in the learning process? In addition, based on these outcomes, a plan for future research will be presented. Understanding the role that authentic objects can play in museum learning will help develop museum experiences that bank on these unique characteristics.

Strand: Museums and centres
Type: Poster
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Paper ID: 406

Urban Geology and Paleontology - Examples And Opportunities In Science Centres

Luis Azevedo Rodrigues
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Since 2011, three distinct science outreach activities were planned, produced and performed in three Algarve (Portugal) cities - Faro (GeoStories of Faro's Downtown), Lagos (Geology at the Corner) and Tavira (From the Museum to the Convent).

Churches, monuments, buildings and urban equipments were the starting point of the geological and paleontological stories that constitute the core of these informal education visits and books which also combine Art History and Heritage views.

Beyond the natural science element, the analyzed objects have relevant aesthetical, historical or symbolic dimensions, allowing simultaneously two levels of interpretation to the stories: the Geosciences level; the other, the Historical and Architectural Heritage.

As a result of these visits three bilingual books (Portuguese and English) of the Geosciences walks were edited. The guides, with 120 pages each, focus on the geological and paleontological characteristics of the visited places as well as the art history framework of the different monuments and urban areas.

With these visits and books, different classifications of possibilities in science communication as well as of formal and informal education are allowed, based on three vertices: Science, Heritage and Geotourism.

Promoting and contribute to the Geosciences outreach (Geology and Paleontology) was the main objective of these visits and books, as well as:

- modify the way that the general population looks at urban buildings;

- contribute to the informal education of a general public especially among the public which is interested in Architecture, History and Heritage;

- integrate different areas of human knowledge - Geosciences and Architecture, History and Heritage.

Visits were tested and implemented and presently constitute one of the science outreach activities of the Algarve Ciência Viva Science Centres.

Strand: Museums and centres
Type: Poster
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Paper ID: 410

Travelling Science Museums: Challenges And Experiences In Science Communication In Brazil

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Co-authors: Lara Mucci Poenaru; Tania Margarida Lima Costa, Monica Santos Dahmouche

Travelling science museums aim to make science more popular and reach the audience in its own space and time. When an exhibit moves, things, time and space are different. Travelling science is challenging, specific and unlimited: you have to be creative because of the reduced space, you need a sharp didactical approach because of the short time, you must go straight to the point because you can afford just a few exhibits. Furthermore, its maintenance is continuous and expensive. Everything that is interactive, hands-on, manipulative and moves around a lot, needs maintenance, paintings and adjustments frequently. In this session we propose to present the history and development of travelling museums in the world and in Brazil, specifically. From the experience of two pioneers and well known Brazilian travelling science museums - Caravan of Science and Ponto UFMG Itinerant Museum - we are also going to discuss and analyse challenges and strategies of communicating science to a broad range of publics in very different social contexts in which traveling museums can go. They are interactive science and technology centres that, because they are built in mobile units, they can visit towns, which usually do not have access to this kind of activity, in the states of Rio de Janeiro and Minas Gerais, as well as in the whole country. Each one has its own tractor trailer adapted into an exhibition area. They do not only transport artifacts and equipment to build external exhibitions, shows and workshops, but they also offer activities in their internal rooms. Therefore, in this paper we propose a reflection on science museums based on mobile units and their relevance in the task of communicating Science to a broad range of audiences, especially those who live in areas with short supplies of other science and cultural equipments.

Strand: Museums and centres
Type: Poster
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Paper ID: 412

Science Centers and Operations in Turkey

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Turkey

Co-authors: Neriman Aral

As steadily increasing awareness of science education importance, the researches about the centers in which science education is carried are fastened. Alternative learning platforms for science education are brought up and the number of the places in which science education is performed like science museums, interactive science centers, and field study centers increased over last 20 years. In particularly, science centers and science museums assume a great role in performing science education and, likewise science centers seem to have strong connections with universities, research centers and other institutions which are related to science. It could be claimed that science centers are ones of those learning platforms which have sufficient equipment for science learning.

Instructor and teaching programs carry importance in addition to physical environment which is maintained for science education. Instructors may sometime remain incapable of responding to students' intriguing and exciting questions because of the fact that instructors who are responsible of science fields in schools are not able to have enough details for the related science field, not able to follow recent researches which have been carried out for the related field, not able to give applied answers for the questions in different difficulty levels, moreover instructors may have difficulty on resource usage. Furthermore, created teaching programs are not able to excite students' attention and may remain insufficient to meet their questions. The need of getting education in the centers which have sufficient equipment from the experts who got specialized in the related science field arose in order to remove the misunderstandings, shortcomings and flaws in science education. In recent years, science education has been tried to be performed in science centers as one of the alternative learning platforms.

In the concept of this study, the creation and operations of Feza Gursey Science Center, Sisli Municipality Science Center, ITU Science Center, Eskisehir Science Experiment Center, Karsiyaka Municipality Science Museum, Gaziantep Planetarium and Science Center, Bursa Science and Technology Center, Konya Science Center, Kocaeli Science Center, Polatli Municipality Science Center will be analyzed.

Strand: Participation
Type: Poster
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Paper ID: 175

Preaching to the Economically Advantaged, Educated And Scientifically Converted: UK Science Festivals As A Method Of Public Science Communication

Eric Jensen
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Co-authors: Eric Kennedy, Monae Verbeke

Scientists are increasingly subject to pressures from funders and institutions to communicate their work with a broader audience beyond the academy. Moreover, scientists and outreach organizations have invested huge amounts of time and resources in public science communication events. Although their aims may be admirable, this study presents evidence that some of these ambitions are going unrealized. Using data from in-depth evaluations of several UK science festivals, we demonstrate that such events are disproportionately reaching economically privileged and educated audiences that are already invested in science. Given the increased prominence of public engagement on the agenda of scientists, scientific institutions, and their funders in recent years, it is important to assess what is being achieved and for whom. In many ways our findings are unsurprising: Those attending science festivals do so because they are already interested in and comfortable with science, and tend to be privileged on a number of socioeconomic dimensions. These observations are unlikely to be new, even if they are rarely articulated in published literature or prioritized for discussion in science communication practice. The problem of exclusion in public science communication is chronic and long-term, requiring the attention of the larger scientific community and its funders to ensure it is addressed. Nevertheless, this study raises red flags about current science communication practices, which should occasion a re-assessment of public engagement policies, methods and assumptions. Scientists, funding agencies, and public science communication organizations need to acknowledge these problems, re-focusing their efforts on the types of people they reach and with what effects. Meanwhile, funding agencies must insist on more robust measures of diversity at public science communication events, tracking progress over time and emphasizing that raw visitor numbers are not their singular priority.

Strand: Participation
Type: Poster
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Paper ID: 208

Gender-biased Content in Science Education Resources

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Co-authors: Anne Kerkhoven (main author)

The goal of this study is to find out the status of present educational resources on science, with regard to gender-biased language and visuals. The findings could be of use for the development of new gender-neutral educational resources in science and technology. To this end, educational science resources for primary school children from the websites of Scientix and OERcommons were studied to see to what extent they contain gender-biased content. Specifically, the texts of the resources were studied for gender-biased words and contexts, and the visual content was studied for inequality of the number of men and women represented, and the roles the characters played in the images and videos. An algorithm was used to analyze the texts; the visual content was studied manually. The text analysis showed that in 14.8% of all resources, gender-biased language was present. In total, 0.007% of all words was gender-biased. The visual analysis was split for 'professions' and 'activities', leading to two chi squared tests. Both tests showed a significant difference ($p<0.001$). Therefore, we can state that there is an association between the type of profession and the distribution of men and women in the professions. Moreover, there is also an association between the type of activity and the distribution of men and women in the activities. Our data implies that the direction of the associations are as follows: science-related jobs are occupied mainly by men, whereas teaching jobs are mainly occupied by women. The findings can pose as a useful tool in creating gender-neutral science resources, increasing girls' interest in science, with the ultimate goal of increasing the amount of women with a career in science.

Strand: Participation
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Paper ID: 382

Water@School - Enganging Young Students In A Research Project

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Open Science - Lebenswissenschaften im Dialog, Austria

Co-authors: Brigitte Gschmeidler, Martin Jung

Water@School is a combined research and science communication project focussing on water safety. Specifically, it addresses the issues associated with seasonal water use in buildings - in this case a school building - by assessment of water quality and usage. In a comprehensive approach, researchers, students and teachers of a partner school, and science communicators join forces to investigate this topic in multiple ways.

Next to the scientific outcome, a major aim of this project is to allow students insight into scientific practice and management of a research project and strengthen their solution competence for issues of social and natural sciences and interdisciplinary tasks.

The drinking water supply of the school building is analyzed by assessment of the pipe network and relevant chemical and microbiological parameters in a sampling campaign. Additionally, data concerning consumer behavior and level of knowledge about the subject are collected by questionnaire based surveys. At the end of the project (September 2016), all results are compiled in a Water Safety Plan for the investigated building.

Students are decisively involved in all project phases. They collaborate in questionnaire development and spreading, examine the school pipeline network and taps, participate in the sampling and chemical analysis, and present their findings during informational events. As a foundation and aid for these project related tasks, students acquire knowledge by means of lectures, workshops, and laboratory practice tailored to their interests and questions.

Experience from this collaboration shows that in young citizen science settings, science communication specialists familiar with both contexts, science and school, can positively contribute to project course and impact. Researchers, teachers and students can greatly benefit from a concomitant mediatory framework facilitating exchange and stimulating discussion. The crucial cornerstones for successful integration of such communication efforts in ongoing research projects are a topic worth investigating within the community.

Strand: Participation
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Paper ID: 387

Agent Zee - Role Modelling Agency By Women In Science

Robert Inglis
The Yazi Centre for Science and Society in Africa, South Africa

Themes: Science communication in a digital age, Gender and diversity in science communication, Social networks for science communication, Evaluating public communication of science and technology

While relatively good success has been achieved in South Africa regarding increasing the number of women entering scientific fields of study, the throughput to postgraduate study and careers for women in science remains low. Census data indicates that only 11,3% of women with post-school education in South Africa have careers in the areas of natural sciences, computer sciences and engineering. This problem is not unique to South Africa.

The Agent Zee role-modelling project showcases careers and opportunities for African women in science, targeting undergraduate science students through innovative media channels.

The Agent Zee Project draws on the power of identification and personal interaction with an African "woman in science", an avatar/personality by the name of Zinhle wa Africa. Zinhle is a student at an institute of higher education. When Zinhle is confronted with a problem that she does not know how to solve her alter-ego persona (Agent Zee) takes over and she boldly ventures into the unknown in the role of the scientist.

Agent Zee exists in a number of communication spaces, as a print and online comic (graphic novel) about her adventures, as a twitter and facebook personality (commenting on issues and highlighting opportunities for women in science) and in the role of a "reporter" - hosting print and audio interviews with women role models.

The advent of digital social media has allowed for increased and immediate learning about the behaviours of the audience as they seek and are exposed to opportunities in science and technology. This has created a space in which strategies for reaching this audience can be refined - hence creating opportunities for monitoring and evaluating the impact of interventions. www.agentzee.org

Strand: Participation
Type: Poster
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Citizen Science Associations And Networks As Agents Of Professionalization - From Loose Practitioner Networks To Knowledge Hubs

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Co-authors: Katrin Vohland, Jessie Cappadonna, Greg Newman, Jian Zhang

CANCELED

Citizen Science is gaining momentum as a movement uniting professional researchers and science aficionados, globally. The term, included in the Oxford English Dictionary in 2014, has recently become popular to refer to a bustling variety of novel participation and outreach formats across the full spectrum of scientific disciplines including volunteer computing and stretching as far as citizen-led hacker and maker initiatives. As the number of such opportunities for laypersons to contribute to research is multiplying and gaining global visibility, a development mainly spurred by advances in information and communication technologies (ICTs), meetups of practitioners are mushrooming and dedicated associations are forming around the world, like the US Citizen Science Association (CSA), the European Citizen Science Association (ECSA) and the Australian Citizen Science Association (ACSA). Also in China and New Zeeland initiatives underway to found networks to promote Citizen Science, foster the exchange of experiences, mutual learning and the establishment of quality criteria among other aims. In line with these developments we hope to push research on Citizen Science even further beyond the collection of local case studies to a more coherent and systematic field of study that will be able to stimulate more critical reflection, inclusiveness and effectiveness. This poster will explore the global trend of emerging Citizen Science associations giving an overview of current developments worldwide and providing typical examples from different world regions. Based on an analysis of documents elaborated by these organizations as well as membership surveys conducted by them we will examine central characteristics of each organisation, i.e. aims, structure, phase of institutionalization, and analyze their general orientations, understanding of Citizen Science as well as their strategic role for advancing Citizen Science. We will also highlight their potential and the challenges these associations are facing.

Strand: Participation
Type: Poster
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Paper ID: 434

A Sight of the Life Molecule

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The workshop entitled "Una Mirada a la Molécula de la Vida" (A Sight of the Life Molecule) addresses different aspects to human heritage, and these are put forward trough touch sense using pedagogical materials developed by the "Cascabel" divulgation group of the Facultad de Ciencias of the Universidad Nacional Autonoma de México (UNAM). The main objective of the workshop is to sensitize society about the blindness and to make available to the blind people scientific information through the proposed activities. The participants in the workshop are shortsightedness and general people. In the activity, each participant gets a box containing 20 pairs of chromosome models and three single ones. All the 20 pairs are different so by touching them they can be differentiated. The eyes of the normal seeing participants are covered with a mask so they can to know the situation of the blind people; at the same time we said about the history and some important aspects about the human heritage.

Strand: Participation
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 458

STEM & Makers Fest/Expo for Public Engagement

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Hacettepe University, Turkey

Co-authors: Gökhan Kaya, Metin Şardağ, Gültekin Cakmakci

This study's aim is to show that how STEM and makers festival or expo organizations can use for public engagement of science and technology. As this organization's mission is to stimulate and sustain the interest of nation's youth in science, technology, engineering and math (STEM) by producing and presenting compelling, exciting, and educational festival in their region. Moreover, celebrating STEM through stellar, multi-faceted programs with high entertainment value and integrity of scientific content, that is accessible to the general public. According to Royal Society research (2006) scientist and engineers, 69% of whom agreed or strongly agreed, would be happy to take part in a science engagement activity that was organized by someone. This points to the importance of the substructure of science engagement: science centers, science festival and science expo all help to provide the places and occasions for public/scientist dialogue (Bennett & Jennings, 2011).

For that reason, we would like to share our experiences that comes from STEM and Makers' fest/expo Turkey 2015, which was organized by Hacettepe University and some associated partners. Our festival targets were to build the nation's largest network of individuals, institutions, corporations and organizations with a similar focus, resulting in increased collaboration between the scientific and educational communities. Around 1500 participants, who age of 5 until 60, joined in this organization through 2 festival days. There were 26 different workshops, 21 different company stands, over 50 poster presentations and hands-on activity areas. Furthermore, two different international scientists conducted some workshop. During the organization, we conducted some semi-structure interviews to understand public engagement in the festival as such. Besides that, we collected some video data and images to show how participant gets in interaction with scientist or science materials while they were working together or by self. Analysis processes of the data are in progress.

Strand: Participation
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 480

Ideas For Change (Ideas Para El Cambio)

Ricardo Andrés Triana Gonzalez
Colombia

IDEAS PARA EL CAMBIO is a program of the Administrative Department of Science, Technology and Innovation - COLCIENCIAS (Colombia), which aims to which aims to generate processes of social appropriation of science and technology, based on the collaborative work between communities in vulnerable and groups engaged in research and technological development, in order to develop scientific - technological solutions that may be a response to the basic needs of these communities.

The methodological approach of the program is founded on the basis of mechanisms of open innovation and communication processes in virtual and in site scenarios, achieved through virtual platforms, generating processes of direct dialogue between specific social sectors and identify solutions to social problems through the application of innovative technological scientific ideas. The transverse axis is the construction of a meeting place among the scientific and innovative community of Colombia and diverse social sectors, particularly communities with social problems who have been unable to resolve.

The process of IDEAS PARA EL CAMBIO is based on principles of dialogue of knowledge and exchange of knowledge, based on the relationship between those who postulate the need and who propose the solution. A process that is based on respect, trust and responsibility, in order to ensure active community participation, co-management and consultation, where everyone contributes and built, so that the scientific - technological solution be accepted, adapted and socially sustainable.

The social appropriation of scientific -technological solutions on IDEAS PARA EL CAMBIO, is performed through an implementation process collaboratively, where communities subject of the intervention process are involved and participate actively in processes of CT + I. In this dynamic is presented a reconfiguration of social organization around the scientific-technological solution, since it is presented in an inclusive manner, coordinated and sustainable, promoting the partnership, the co-creation from the perspective of social innovation. In the whole process of generating communicative and reflective process on the scope and limitations of science and technology.

Strand: Publics
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 16

Public Attitudes To Chemistry in the UK

Chiara Ceci
Royal Society for the Protection of Birds (RSPB), United Kingdom

In June 2015 the Royal Society of Chemistry published the results of study on what the UK public thinks and feels about chemists, chemistry and chemicals. It is a qualitative and quantitative research, including a national public survey, with 2,104 face-to-face interviews with UK adults (16+). The poster will include the infographic with the summary of the findings, and elements of the communications toolkit.

rsc.li/pac

Strand: Publics
Type: Poster
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Paper ID: 93

Assessing Difficulties Of Mirror Reflection Activities From A Math Festival

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Co-author: Ricardo Candás Samara Gallegos

The Institute of Mathematics at the National Autonomous University of Mexico (UNAM) wishes to contribute to increase the mathematical culture in the country. Since 2010, we have participated in several science festivals with a diversity of communication-oriented engagement activities. Using informal settings these activities promote 'awareness', positive attitudes towards Math and help the understanding of some concepts.

A reflection is a type of isometry; isometries are space transformations that preserve shapes and distance. Although people look at mirrors all the time, we have observed that they are not aware of the properties of reflection.

A sample of 221 people was sorted according to age range and gender. Two trials were developed involving different challenges: one with a pen and a pad (in two dimensions) and another with cubes of different colours (in three dimensions). Our paper will target the assessment of the difficulties that the public faces while presented with reflection.

We found that gender and age are variables that play an important role in people awareness of reflection. Performing the activity with two or three dimensions was a key factor for the public to understand or not how challenges could be solved. It seems that certain parameters -distance from the mirror, change of orientation and rotation- further complicate this type of activities. Also, those parameters relate directly with reflection properties.

In determining how these parameters promote the appropriation of reflection, we will be able to improve activities linked with this particular concept. It is our intention that the public better experiences mirror reflection.

Strand: Publics
Type: Poster
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Paper ID: 341

GAIA Project Centre: An Experience Report On Science Communication About The Biosphere Reserve Of Espinhaço Mountains Range - Minas Gerais/Brazil

Bernardo Gontijo
UFMG, Brazil

Co-authors: Danielle Piuzana Mucida, Marcelino Santos de Morais

This article comes from a project entitled GAIA (Geosciences, Arts, Interdisciplinarity and Learning), which aims to popularize scientific knowledge regarding the Brazilian Espinhaço Mountains Range. In the middle of this huge mountains range, declared Biosphere Reserve by the UNESCO in 2005, it is located the historic city of Diamantina. In the XVII century, this city was the world's largest diamond producer. After two centuries of decadency, today it fights for a better future. The local population lost not only the economic power, but also the knowledge regarding the environment of the surrounding areas. Diamantina itself was declared Humanity's Patrimony by the UNESCO in 1999, and it is rich in artistic, historical, religious and cultural manifestations. However, local community, specially students from low income families, knows little about their rich environment and how it is directly related to the Espinhaço's biodiversity and landscape mosaic. In the GAIA Project exposition centre, a model in scale of the Southern Espinhaço region was built in order to teach practice lessons. The model represents an important resource for communication and has a strong didactic potential for integrated landscape analysis. It allows to understand the geographical space in a process of teaching and learning that uses the cartography as a method of space representation. Through literature research and field studies, it was possible to develop a non-formal educational practice as a playful complement to understand the geographic space in which students reside. More than a thousand students, ages from 8 to 18, already visited the centre and the challenge has been to establish parameters in order to evaluate the social impacts of the activities developed so far. The project involves researchers from two federal universities - UFVJM and UFMG - and is part of the work done by the Espinhaço's Integrated Research Group (GIPE).

Strand: Publics
Type: Poster
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Paper ID: 391

Educational Disparities, Biomedical Efficacy and Science Knowledge Gaps: can the Internet help us reduce these inequalities?

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Co-author: Nick Allum

The economic, health, and knowledge disparities between the world's "haves" and "have-nots" are some of the key issues we face in this day and age. (World Economic Forum, 2011) Unfortunately, very little communication research has been applied to understanding what we can do to help reduce these inequalities. Even more worryingly, some studies have found that feeding more information to the public through traditional media has the adverse effect of widening gaps based on educational disparities. (Tichenor, Donohue, Olien, 1970) We study the impact that Internet use has on the disparity between lowly and highly educated citizens in terms of their science (biomedical) knowledge, as well as their sense of efficacy regarding medical research. For this, we employ Wave II of the Wellcome Trust Monitor Survey (2012), which is fielded to a nationally representative sample of the UK population. We conduct a series of moderated regression models with mean centring and we find that increased Internet use in the lower education group can help significantly narrow both knowledge and efficacy gaps that emerge from educational disparities. Implications for science communication are discussed.

Strand: Publics
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Paper ID: 482

The Cultural Importance Of Science Communication And Disclosure

Enrico Catalano
University of Piemonte Orientale, Italy

The main issue of this work is that science communication and science disclosure necessarily involve and include different cultural orientations and interests. There is a substantial body of work showing that cultural differences in values and epistemological frameworks are paralleled with cultural differences reflected in artifacts, customs and public representations. One dimension of cultural difference is the psychological and perceptive distance between humans and the rest of nature. Another is perspective taking and attention to context and relationships that impact on the perception of science communication. As an example of distance, most (Western) images of ecosystems do not include human beings, and European American discourse tends to position human beings as being apart from nature up to control it. Native American discourse, in contrast, tends to describe humans beings as a part of nature. We have traced the correspondences between cultural properties of media and social networks, focusing on children's books, and cultural differences in biological cognition. Finally, implications for both science communication and science education are outlined and clarified.

Strand: Scientists in PCST
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 19

Labcasts: Bringing Cutting Edge Science to the Classroom

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The Open University, United Kingdom

Co-authors: Trevor Collins (presenter), Gareth Davies, Simon Sheridan, Richard Holliman, Helen Brown, Mark Russell, Jenny Hallam

As part of UK Research Council's School-University Partnership Initiative[1] and their 'Bringing Cutting Edge Science to the Classroom' scheme, we have trialled the use of 'Labcasts': interactive, live web broadcasts from The Open University (OU) research labs to students at Denbigh School[2].

The objectives were: (i) provide students 'access' to an authentic laboratory/researcher without impacting on the school timetable, (ii) engage students with 'cutting edge' research via the curriculum, and (iii) provide a development activity for the teacher and researcher. The development, design, delivery and evaluation of the Labcast was a collaborative venture between The OU and Denbigh School.

At the time of the Labcast, the Rosetta probe's Philae lander was broadcasting data from the surface of a comet to Earth. A member of the Ptolemy instrument team agreed to develop the Labcast in collaboration with a Physics teacher; the labcast was delivered from the Ptolemy lab.

The Labcast incorporated passive elements, e.g. presenting to camera, interview style dialogue, and the use of video clips; and interactive elements, e.g. a lab experiment mirrored in the school, a maths workshop, and a problem solving activity concerning Philae's landing site.

The Labcast was videoed by a team of three people, who produced a high-definition video stream broadcast via FaceTime to a mixed ability A-level (aged 16/17) Physics class (25 students) and teachers in the school. Third-party videos were also mixed into the stream. A webcam relayed a view of the classroom back to the lab and students/presenters interacted using the two-way video call.

This paper will present details on the Labcast format, outcomes of its evaluation against the objectives set, and present outline future directions for the Labcast model.

References

1. Select http://www.open.ac.uk/engaging-opportunities for the 'Engaging opportunities' website.
2. Select http://weblab.open.ac.uk/labcasts for more information on the OU's Labcast project for adult learners.

Strand: Scientists in PCST
Type: Poster
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Paper ID: 68

Divergence Between What Chilean Environmental Scientists And Their Publics Think About Science Communication

Silvia Lazzarino
Millenium Ecology and Biodiversity Institute Chile, Chile

Co-authors: Nelida B. Pohl, Michel Parra Calderon

Society increasingly needs citizens who can actively participate in policy decisions, many of which are crossed by scientific and technological dimensions. Strengthening scientific culture is a goal that many governments aim at by promoting actions to communicate science to the wider public. Following the Public Engagement with Science, or dialogue model, we believe that the development of science communication activities and products is not the sole province of scientists, journalists and science communication experts, and that much can be gained by including other actors in the discussion. The science communication team of the IEB-Chile conducted a study aimed at gathering the opinions of a variety of ecologists (IEB university academics and their graduate students) and publics (policy makers, NGOs, educators, local communities and industry) regarding what should be communicated, what for, to whom, and how (using which formats). In this presentation we share some of our results, highlighting the different views held by knowledge generators and the potential recipients of that knowledge. The results show a specificity of communication needs among ecologists, depending on their particular area of research. Analyzing the discourses of scientists and publics reveals a connection between the answers to the questions who to and how to communicate the results of research. We found that: a) Scientists consider policy makers and school community as the main publics to engage, b) Publics are able to identify many more different actors within each category of public than the scientists, c) Publics recognize a much wider range of formats for outreach products and activities than the scientists, and d) Publics demand less detailed information compared to the level of detail preferred by the scientists. Our results highlight the importance of building scientific culture incorporating the participation of a wide array of actors at the science and society interface.

Strand: Scientists in PCST
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Paper ID: 162

Another Face Of The Biological Sciences: Investigating The Outcomes Of Working On Science Popularization Projects As An Undergraduate Student In The Professional Choice.

Monica Bucciarelli Rodriguez
Universidade Federal de Minas Gerais, Brazil

Co-authors: Juliana Santos Botelho, Adlane Vilas-Boas

A graduation in Biology provides students with a choice in their career as scientists, teachers and education consultants, for instance. However, science communication is often seen as a minor activity of specialization for university students especially because laboratory and field investigations may be more appealing during this period. This work aims to investigate the professional choices of undergraduate biology students who had an opportunity to work in projects of science communication and popularization while at the University. Our assumption is that experience during undergraduate education may determine professional choices. What are the positive and negative aspects about working in science communication and popularization projects? In what ways do people think this experience may have changed them? To evaluate the impact of science communication experiences on their professional career choices, we decided to survey a sample of 40 former or current students. All of them were involved in a specific science communication project, which exists now for over 10 years at the Federal University of Minas Gerais, in Belo Horizonte, Brazil.

The project, called "Science for reading and listening" ("Ciência para ler e ouvir"), deals mostly with texts produced for the radio and distributed in metropolitan buses and over the Internet. The undergraduate students involved were mainly from the Biological Sciences, but also from Communication and Arts. By using semi-structured interviews, we aimed to analyze the perception of their experiences and the impact on the professional choices and views of career opportunities both in present or former participants. The questions scrutinized a number of subjects, including their original motives for working in Science popularization and possible changes in their view of Science and professional opportunities in this field.

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Strand: Scientists in PCST
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Developing Science and Technology Communication Value of Researchers through Marketing Concepts

Finarya Legoh
the Agency for Assessment & Application of Technology, Indonesia

Science and technology (S&T) communication value does not come naturally from many researchers, although they are willing to be involved, they might need assistance. Researchers are usually comforted by their brilliant discoveries and novelties, without considering whether public understand their distinctive language or not. It is not easy for researchers to formalize a few minutes concept of ideas to public.

The Agency for Assessment and Application of Technology (BPPT), a national government R&D institute, realizes that the behavior of researchers should be transformed into a more strategic relationship to public and its stakeholders. The advent of ICT is also used to provide wide range of possibilities on disseminating information.

The knowledge management, S&T communication, and social responsibility are the elements of action towards promotion and marketing concepts. They represent the new ways of operation within the R&D institutes. The specific issues are identified, to what approach and action might be required in marketing the technologies and services:

- Explicit identification of project theme and objectives.
- Targeting message: comprehensive identification and classification of stakeholders.
- Capacity building needed within the institute, including internal networking access.
- Way of approaching through cyber network.

The selected researchers are trained as S&T communicator change agents through marketing concepts. The real activities area treated as case studies. They include collaborative and inter-active efforts of communication to targeted R&D institutes, private sectors, government / local governments, and communities. Social media and S&T blog are used to popularize the communication, as well as to market the technologies and services.

It can be seen that novel efforts and initiatives taken in developing S&T communication value reveal the researchers' awareness and horizon. The approach and communication with stakeholders are improved, resulting attaining public acknowledgement and new stakeholders.

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Paper ID: 224

Case Study: Building a Physics Institute's Outreach Programme from Scratch

Erik Arends
Leiden University, Netherlands

We present the findings of our case study around building an outreach programme from scratch at the Leiden Institute of Physics, The Netherlands. Before we started, the institute had no official outreach programme, giving us a unique opportunity to do a clean case study, with no pre-existing factors that influence our data. We have been measuring and analysing the effects of our outreach activities towards our main goal - create more (positive) visibility for the institute and physics in general. We have focussed on the key question: What effects do our activities have towards our goal, and how do they interrelate? A quantitative analysis of Twitter, website statistics and Google Alerts gives us insight into the relationships between timing, retweets, news letters, reach, engagement, media appearances and subject (discovery, grant or upstream communication). Furthermore, we investigate physicists' engagement with their institute in time, by monitoring their website visits and participation in outreach, such as communicating their research to the institute's outreach professionals. We look for a cascade effect, in which more outreach leads to more visibility amongst the researchers themselves, leading to a culture of more outreach participation. In the absence of a prior outreach programme, we have a rare, clear view on the effects of our actions. We are in a unique position to perform this clean case study at a large physics institute. From there we provide valuable do's and don'ts for science communication practise, which is the aim of the study.

Strand: Scientists in PCST
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Paper ID: 239

SITN Harvard: Molding the Next Generation Of Scientists To Build An Effective Public Interface

Vinidhra Mani
Harvard University, United States

Harvard University's Science in the News (SITN) is a graduate student organization devoted to bridging the communication gap between scientists and the general public, while also training graduate students to effectively interface with diverse audiences. For 17 years, the model by which SITN has been furthering scientific training and communication allows for adaptation and personalization to various audiences, through constantly evolving peer-peer and scientist-public feedback that keeps the organization abreast of the times and allows young scientists to more effectively interface with the public. When the organization started, the major form of communication was through in-person events such as science cafes called "Science by the Pint", held in a bar venue, and two annual Lecture Series held through the course of the academic year at Harvard- all free and open to the public. While these flagship programs continue to run robustly with audiences of hundreds in the Boston area, the dawn of communication technologies and social networks have allowed the science reach to extend even further. We have now begun to apply our in-person strategies online via Reddit "Ask Me Anything", our online blog "Signal to Noise", and our newest endeavor, a podcast titled "SIT'N Listen!", which engages in bites of jargon-free scientific background on a topic, followed by discussion with experts in various scientific fields and deep social media connections.

Through our experiences, we have found that the most effective way to engage the general public in science is to create an interactive interface with them and build these relationships through consistent portals of feedback. We, the next generation of scientists, are learning to harness the power of digital interfaces to interface with members of the nonscientific community across the world and thus taking one large leap into an interdisciplinary world.

Strand: Scientists in PCST
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Paper ID: 245

Climate, Floods, and Forest Fires: Expert Communication About Uncertainty & Complexity

Eric Kennedy
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Co-author: Liza Kurtz

For forest, watershed, and fire managers, climate change poses a significant threat. Increasing droughts, extreme weather, temperature, and unpredictable precipitation patterns make it difficult to manage the interconnected threats facing forests and wild lands. Yet, these experts often exist in disciplinary and institutional silos, infrequently communicating with their colleagues from other agencies and subject areas about the intersections of fires, flooding, and watershed management.

We conducted an ethnographic observation of a rare cross-disciplinary meeting aimed at bringing together American experts from each area to identify research gaps, data needs, and possibilities for collaboration across government and institutional silos. We documented and coded both the communication between experts and the ways in which they communicated with other institutions and the public. We developed a taxonomy that accounts for the different subjects discussed, framings used, and communication practices, and that enables us to more thoroughly understand how experts understand scientific data, model projections, and possible courses of action. In turn, this allowed us to examine how these scientists and decision makers communicate uncertainty, unpredictability, and incommensurability in both planning and emergency management phases. Our data allows us to make recommendations about where investments can be made to improve both internal and public-facing communication for public safety, environmental management, and hazard reduction around forest fires and flooding.

Strand: Scientists in PCST
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Improving Social Media Skills For Scientists And Institutions in Portugal

Joana Lobo Antunes
ITQB, Universidade Nova de Lisboa, Portugal, Portugal

Co-authors: Ana Sanchez, Antonio Granado

Members of the public are increasingly using online environments and specially social media platforms to find information about science. It is vital that scientists and scientific institutions start using those platforms to disseminate and promote their research activities. In 2014 we have established a 3-day course for PhD students and researchers of Nova University of Lisbon, to take them through the communication process on the web and the importance of properly managing their online identity inside and outside social media. Using different platforms (weblogs, Facebook, Twitter, and other social media), students are invited to practice, and learn with the practice of others, their own communication skills. Our approach encourages the contributions based on a more empirical analysis of the effective use of social media by scientists, aiming to inspire the students to reproduce the best practices on the field. We have also written and published a guide based on the course that we have made freely available online (http://www.unl.pt/data/escola_doutoral/RedesSociaisparaCientistas.pdf), and for the first time in Portuguese. In this communication we will present the results of the feedback from the first year of the course, and discuss the importance of having materials available in the native language.

Strand: Trends and policies
Type: Poster
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Paper ID: 17

Style of Public Science Communication in Iran

Zahra Ojagh
University of Tehran, Iran

I did a research on the attributes of Iranian popular science magazines and for the 16th PCST conference I'd like to prepare a poster and illustrate overall characteristics of their style for communicating science. As I have used actor - network theory, so I have focused on the communicative modes for promoting public understanding of science, and in the poster I will return to it. I did this study by using two methods: Content analysis and focus group interviews. hope to provide an illustrative poster.

Strand: Trends and policies
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Paper ID: 74

Creative Research Communication: Theory and Practice

Clare Wilkinson
University of the West of England, Bristol, United Kingdom

Co-author: Emma Weitkamp

The last thirty years have encapsulated many changes for researchers, at all levels, who are interested in communicating their research. Much has been learnt in science communication about what does and doesn't work, and why, whilst other disciplines have been reflecting on their own role in research communication processes. From an individual perspective the students of today are more likely to see communication and engagement training featuring in their plans for the future. Whilst the growing institutional and policy infrastructure to support and encourage communication and engagement, particularly when applied to research impact, is subtly altering the possible incentives and disincentives for participation. Thus, these are important times for research communication and rather than respond only to 'diktats' which may diminish research communication to a tick box exercise, we would see it as a time to embrace opportunities for creative research communication approaches and prove their worth.

Creative Research Communication: Theory and Practice is a new book to be launched in 2016 by Manchester University Press and authored by Dr Clare Wilkinson and Dr Emma Weitkamp, who are based at the University of the West of England, Bristol. The book seeks to create a space for creativity as one way to encourage the integrity of a research communication activity, and to see research communication as much as an art, a craft or a conversation, as a science, a method or an attainment. The poster will cover the key themes of the book including engagement via the arts, online contexts, face to face events and through policy settings, as well as exploring questions regarding what it means to be a creative and ethical research communicator, who also has impact.

Strand: Trends and policies
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The Tools And Tactics Of Effective Science Communication In An Issues Rich Environment

Ben Creagh
CSIRO, Australia

As one of the Australia's most trusted organisations (Bruce & Critchley, 2013) the Commonwealth Scientific Industrial Research Organisation (CSIRO) has a long history providing research and synthesising complex technical information to better understand pressing and often highly contentious issues confronting policy makers.

This presentation will articulate the communication tools, tactics and principles necessary for scientists to improve how they actively inform public policy with impartiality and independence, and in doing so increase the potency of science as a shaper of policy.

It will draw on three case studies: (1) understanding the social, environmental and economic impacts of Australia's unconventional gas industry; (2) communicating scientific observations and data underpinning climate science (State of the Climate, 2014); and (3) helping chart the economic, social and environmental implications of expanding development in Northern Australia. It will present a 'toolbox' of the consistent and critical elements of effective communication of complex and technical scientific information and will canvass science marketing, stakeholder engagement, issues management, and contemporary media engagement practices.

Despite the diversity of issues and the unique public policy and political circumstances that define them, the communication environment is largely characterised by a set of consistent traits. These include issues where scientific knowledge is contested or incomplete; presents a difficult and complex policy challenge; involves a spectrum of often competing interests and values; and is of high media, political and public interest.

Central to the success of this approach has been adherence to the honest broker role as articulated by Roger Pielke (2007) as a guiding principle for all communication and engagement activities irrespective of the issue. This presentation will also demonstrate how the right communication and engagement approach can allow scientific organisations to maintain and grow the trust of the public, media, policy-makers, politicians and the science community.

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Strand: Trends and policies
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From Science PR to Corporate Science Communication: Within the CSR Context of Japanese Manufactures

Emiko Tayanagi
Future University Hakodate, Japan

This research aims to clarify how and why the modern manufacturing companies, called "professional organizations" by Tofflar (1970) and Mintzberg (1974), have been changing their communication strategies with the public within the context of transition from the science PR to the new trend of corporate "science" communication. In Japan science PR by private companies emerged and evolved with rapid economic growth since 1950's. As same as the other advanced countries, science PR activities in Japan followed the communication model of one way/asymmetry (Grunig and Hunt, 1984), delivering news sources to the press, publishing science PR magazines for opinion leaders and general public and advertising and branding their scientific corporate images through mass media as well as their high tech products and services. However such activities especially targeted to general public started to decline since 1990's because of maturity of industrial science, while alternative science communication activities such as hands-on science programs for kids and school students voluntarily conducted by industrial researchers and engineers started to emerge and diffuse in the 2000's. Besides, stakeholder dialogues, direct conversations and discussions with small group of citizens, also started to be promoted under the pressure of corporate disclosure of risk information. We conduct a survey and also observatory fieldworks including interviews to key persons for a few representative cases. As a result the study tried to redefine the new trend of science communication by industries not only as voluntary actions by individuals but also as corporate "science" communication. We analyze and figure a transition model from the science PR to the corporate "science" communication from the viewpoint of multi-stakeholder CSR. Our model argues that the corporate "science" communication should be a touchstone to enhance attitudes of professional organizations to build a new PCST sphere toward social inclusion.

Strand: Trends and policies
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Science in Public Research Network

Angela Cassidy
King's College London, United Kingdom

The Science in Public (SiP) research network provides a central point of contact for anyone involved with or interested in academic research about SiP in the broadest sense. This includes any work which considers relationships between science, technology and medicine; 'the public'/multiple publics; media and culture; and the broader public sphere. Science in Public fosters cross-disciplinary discussion and debate between researchers across the many fields and disciplines which address these topics, including science communication; science and technology studies; history of science; development, policy, media and cultural studies; and literature and the arts.

In 2016 we celebrate our tenth anniversary, having grown out of an ongoing UK based annual conference of the same name. To mark this this and to celebrate the growth of SiP, we are formalising the organisation of the Network, much as PCST did in 2014.

Our key aims are:

i) To provide long term continuity for the annual Science in Public conference.

ii) To give SiP research a more visible online presence via our web portal http://scienceinpublic.org/

iii) To facilitate conversations between researchers and practitioners in this area.

In this workshop, we invite input from delegates at PCST 2016 about the SiP network and its activities. What can we do for the science communication community in the UK and worldwide? How can we help bridge divisions between research and practice? How should we proceed as an organisation? Last summer, we co-located the PCST Summer School with our annual conference at the University of the West of England, Bristol. Should this interaction continue and how can we improve it?

We are also issuing a formal Call for Participants: for people to contribute to SiP as members, Committee members, meeting hosts, website developers and writers, and any other ideas you may have. Please come along to find out more!

Strand: Trends and policies
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 290

Contributions of Linguistics for Science Communication

Ana Fukui
Brazil

Co-author: Maria Eduarda Giering

Science communication is an area which has earned recognition in the last years, much more as a set of actions than, effectively, as a research area. This paper aims to present some theoretical contribution for this debate from a dialog with Linguistics.

In order to make science, we need a theory which allows us to reflect about a certain reality, being this an experiment, an observation or a world cutout. In the case of science communication, which rises from the scientist's necessity of interacting more deeply with the society which is around him/her, contributions of several different subjects - such as Sociology, Psychology and research in Public Communication of Science - come out. Linguistics may contribute to this construction too, once its study object is language.

Linguistics premises allow us, from the beginning, to break with the linear model of communication: transmitter - message - receiver. In the scientific studies of language which start with Bakhtin, one of the fundamental principles is alterity, in which it is necessary that the transmitter perceives him/herself as a receiver too and, only from that, establishes communication. Jointly to this principle, dialogism is also established, which means that all texts are constructed in an otherness relation, in an exchange process, which can be face-to-face or not.

Once the premises are understood, we make use of an alternative model of description of communicational relations, called situation of communication, which can cope with the otherness relation in the interaction process, instead of considering the interlocutor as a simple receiver. Finally, we present an application of this model in a Brazilian scientific popularization magazine, called Ciência Hoje.

Strand: Trends and policies
Type: Poster
Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 304

Digital Public Communication and Science Popularization: the Ministry of Science, Technology and Innovation of Brazil and its Research Institutes

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Unicamp, Brazil

Co-author: Graça Caldas

This work focuses on Public Communication and science popularization actions performed through the web portals of the Ministry of Science, Technology and Innovation (MSTI) of Brazil and its 13 Research Institutes (RIs). The research is a multiple case study (Yin, 2001), through documentary research and semi-structured interviews. Technical analysis of the portals is grounded in the parameters stipulated by Vilella (2003) and De Falco (2009), adapted by the researcher. The analysis, concluded in July 2015, reveals the absence of an articulated structure in this area, to the detriment of the institutions themselves and the various stakeholders (government, business, media, researchers, educators, students, etc.). Considering the importance of Science, Technology and Innovation (STI) and Digital Public Communication for the construction of citizenship and effective social inclusion, a systemic and coordinated Science Communication format might work as a promoter and supporter of science popularization. The study points to the need to establish a communication policy, and use strategies of digital media that value and give visibility to the RIs as members of the Brazilian STI system and leading knowledge generators.

Strand: Trends and policies
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Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 311

Bridging the Gap! How Young African And European Scientists Are Trying To End The Dichotomy In Approaching Science Communication

Alexander Gerber
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Co-author: Elizabeth Rasekoala

How Eurocentric are European perspectives on science communication? How could both scholars and practitioners in PCST incorporate a more comparative, global approach? To facilitate such a trans-cultural, mutual learning process, Rhine-Waal University in Germany together with the news hub African Gong are preparing an African-European exchange programme. Two international meetings are planned to start a continuous exchange of experiences and expectations, identify obstacles and opportunities. Particularly students and young researchers with a 'cosmopolitan' attitude will be targeted as future leaders of this change of mind-sets and therefore as main participants in the kick-off meetings. Issues such as food-waste or GM crops show that there is no shortage of highly politicised issues around science and innovation where misunderstandings and ignorance on both continents dominate the debate and prevent sustainable change. Thinking globally, and acting locally, however, requires an open dialogue on eye-level, which is what both partners wish to facilitate.

Strand: Trends and policies
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Paper ID: 338

Latin American Network of Public Communication of Science

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No, Mexico

Co-author: Ernesto Marquez Nerey

The Latin American Network of Public Communication of Science is a network aiming to determine the state of art of public communication of science that is taking place in the country and can later be extended to a Latin American network of science communication. To this purpose, the Network will produce a catalog of science communicators in México, and subsequently will be extended to Latin America. In order to accomplish this, besides the collaboration of the members of the Network, we will be getting the institutional support from SOMEDICYT, DGDC-UNAM, IER from the UNAM, Network for the Popularization of Science in Latin America and the Caribbean (Red POP) and hopefully from the Public Communication of Science and Technology (PSCT).

On top of having the Network of science communicators' catalog, four meetings will be held to research the following aspects of science communication:

- Citizens Science, meaning by that different ways of using scientific and technical knowledge in order to directly help solve some of the relevant problems of the population.
- Conduct science communication projects amongst researchers, innovators, businessmen and media.
- Public communication of science targeted specially for politicians to raise awareness among them in order to get support for the research, teaching and dissemination of science and technology.
- A Latin American symposium with the objective to get to know how the educational system from each country supports the public communication of science, and how the science communication and the scientific journalism benefits the formal education in each country.

The Network will initially have an Academic Committee and 60 members, who will work through the different Network websites corresponding to the four identified areas. For the development of the Network, we will look for support from the CONACYT and other institutions that might be interested in collaborate.

Strand: Ethics and arts
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Paper ID: 32

Science, art and culture merge to disseminate the Chilean hottest heritage

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Andean Geothermal Centre of Excellence (CEGA), Chile

Chile has more than 3,000 volcanoes and about 300 hot springs. However, Chileans are highly surprised after volcanic eruptions, and our experience at the outreach unit of the Andean Geothermal Centre of Excellence (CEGA), after participating in several science fairs, is that high school students and their parents are usually not able to mention more than five Chilean volcanoes and/or hot springs. Many Chileans do not know our volcanic and geothermal natural heritage. Motivated by this knowledge gap from this specific audience, CEGA published the book "The Land of Fire: people and nature marked by deep heat". The objective was to present our geothermal heritage through different perspectives in a book that didn't look much as a science book at a first glance, using art as a hook to make the book a desirable object. The book was aimed for young adult readers, with short stories (500 words each) about 15 interesting geothermal areas of Chile. Each chapter covers the geological features of each site as well as the local stories, myths and legends associated with the place. The book brought together experts in the area of earth sciences, social sciences and national renowned photographers and illustrators. One thousand copies were printed and distributed freely through public libraries and via a nomad library that sets up book shelves in public spaces once a month. A digital version of the book was also released. The book launch included a communication strategy with an animated video on line, promotional material (posters, bookmarks) and a press kit. "The Land of Fire" was developed by CEGA, with the support of the national Explora funding for outreach products and was launched in December 2014. A digital verison of the book is available at http://issuu.com/cega_uchile/docs/latierradefuego

Strand: Ethics and arts
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Date / Time / Room : 26-04-2016 / 16:00-17:45 / Foyer/Main Conference Hall
Paper ID: 377

Science, art and culture merge to disseminate the Chilean hottest heritage

Matteo Merzagora
TRACES - ESPGG, France

Co-authors: Vanessa Mignan, Meriem Fresson

Responsible research and Innovation is "an inclusive approach to research and innovation, to ensure that societal actors work together during the whole research and innovation process". The so called "RRI keys" defined in the EC H2020 programme reflect in fact many of the preoccupations raised by the PCST community since several years now.

However, in order for keywords such as "ethics", "engagement", "gender equality", "open access" to become fully intertwined with the concept of science itself for citizens at large, the role of school cannot be neglected. Formal and informal education plays a crucial role to mainstream these approaches in the scientific and social practices. This is why several recent projects put efforts in developing the links between RRI and Science Education. ENGAGE is an EC funded project about about equipping the next generation to participate in scientific issues to change how science is taught. It develops a comprehensive online and f2f scheme for equipping secondary school teachers to embed ethical issues, science in the media, societal impact of research, participation of active scientist in school progrms, etc. in their practices. A crucial goal of this projet is thus mainstreaming RRI in science education. In this framework, a specific seminar was organised in collaboration with ESPCI PAristech - PSL in 2014, and gave rise to a comparative analysis among several EC funded projects about several key questions concerning RRI in science education. I will present an overview of the key findings, and discuss the main obstacles that make RRI approaches somehow hard to embed in the science education system.

Strand: Trends and policies
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Paper ID: 334

Biological scientific illustration: a career on the making

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Pegasus Scientificus, Brazil

Co-authors: Rosa Pereira, Marco Anacleto, Enaile Siffert

Home of the world's largest biodiversity, Brazil still has a vast unexplored territory, either for the identification of new species or for descriptive scientific illustration for taxonomy purposes. While the country has been considered a source of scientific investigation since the first scientific and military expeditions in the 19th century, the majority of the newly found species were firstly recorded, historically speaking, by foreign researchers and illustrators.

The Biological Scientific Illustration courses by the Federal University of Minas Gerais (UFMG), Brazil, aims at filling a professional gap to cover the demands of the fields of Biological Sciences and Science Communications, by training illustrators to act in a variety of biological research fields.

Created in 2005 by Rosa Alves Pereira, illustrator and a former coordinator at the UFMG Illustration Program, the scientific illustration courses are taught today by a selected team of illustrators from the Biological Research Institute. Ever since, Rosa Alves Pereira, Marco Antonio Anacleto, and Enaile Siffert have been offering a number of courses on a series of biological themes, such as entomological illustration, medical illustration, zoological vertebrate illustration and paleontological illustration. The main goal is to qualify professional illustrators to act on the Biological Sciences, following international scientific illustration standards. The target audience is composed of professionals and students coming from the fields of Arts, Communications, and Biological Sciences. Classes are both theoretical and practical, aiming at the production of illustrations in a variety of research fields. The course pack is provided by the Scientific Illustration Laboratory, which has also been producing the Scientific Illustration Handbooks since 2007.

In 2015, classes started to get documented by Juliana Botelho in a blog called "Ilustração Científica UFMG" (https://ilustracaocientificaufmg.wordpress.com/), using with a variety of sources of photos, videos and scientific illustrations that describe the illustration techniques, the production process and well as the final outcomes.

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Paper ID:

How to train Science Communicators and Explainers in the Digital Age

Manuela Ringbauer
Open Science, Austria

Co-author: Karin Garber

When hiring new science communicators and explainers you want to ensure that they learn from the best. Tried and tested tricks and communication strategies should be passed on in order to maintain your high-quality standard in science communication. To achieve that, you might have implemented evaluation concepts and run feedback talks for each and every explainer. You might have mandatory practical trainings for all explainers on a regular basis... Sounds fairly easy?

In reality, all of this is rather time and cost consuming. Since you often have a big pool of science communicators, you might have to deal with the problem of high fluctuation. Instead of passing on the well-proven communication tools, you are facing the "Chinese whispers effect" and important information is lost on the way. How can you still guarantee to keep your high-quality standards?

We established video trainings as an additional tool for teaching young scientists to run hands-on laboratory workshops. In this poster, we will present conceptual ideas as well as DO's and DON'TS for producing video tutorials. We will discuss why video tutorials sometimes outrival theoretical lectures, for example in passing on established and well-proven communication tools to new personnel. We will also present a brief evaluation of this tool by presenting feedback of our science communicators who were trained via video tutorials.

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