



PoLiMeR

Polymers in the Liver - Metabolism and Regulation

Public Scientific Communication

Transferable Skills Module 3

Angelina Sekirnik, Tuesday 15 September
Angelina.Sekirnik@comettherapeutics.com



What is public communication of science?

- **Communication:** to inform and inspire the public about research.
- **Consultation:** to engage in two-way conversations about research and listen to public views.
- **Collaboration:** collaborating with the public, including co-creation, co-production of knowledge and citizen science.
- Diverse forms:
 - Media (traditional and social)
 - Public presentations (museums, festivals, cultural events)
 - Web based experiments (crowdsourcing)

Increasingly recognised and valued

The Researchers' Choice Communication Award 2020



ELSEVIER

The Researchers' Choice Communication Award (RCCA) recognizes early career researchers who have excelled in communicating the purpose, meaning and impact of their research to the wider public. The candidates are nominated by their colleagues and peers. The winner will be chosen from a shortlist by an expert panel of judges and announced at this year's virtual awards ceremony and will receive a grant of £1,500.

AAAS Early Career Award for Public Engagement with Science



ERC Public Engagement with Research Award

The European Research Council's (ERC) Public Engagement with Research Award 2020 is designed to recognize and celebrate ERC grantees who have demonstrated excellence in public engagement and outreach.

What is the goal?

- Public funding duty
- Share results
- Empower patients (inform)
- Combat disinformation
- Feedback from the general public
 - Do they understand
 - New ideas
- Inspire new generation of scientists



- Create awareness (of new issues/topics)

What is the goal?

- Responsibility from public funding
- Encourage excitement
- Widening participation
- Promote public trust
- Demonstrating caring
- Develop transferable communication skills
- Inspire about new discoveries
- Attract interest from potential funders



- Educate on issues requiring public response
- Lobbying (inter)national policy
- Reframe issues
- Combating disinformation
- Gaining new insights or ideas
- Researchers visibility and recognition in society
- Informing vs persuading?

What is the target group?

- Patients (informing without fear)
- Level of knowledge (may not be scientists but can be well informed)
- Which non-technical words to use



- Policy backgrounds, public context
- Funders – reporting on progress and potential
- What they want to know, questions

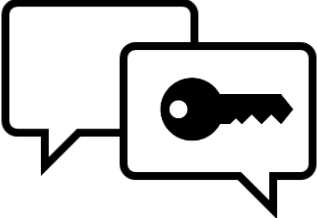
What is the target group?

- intra-specialist vs inter-specialist vs laypeople
- students, teachers, journalists, specialists in other areas, decision-makers, funders, businesspeople, youth
- Important to be aware of what general public knows
- Communication should be tailored to specific audience: adapt language and depth of information



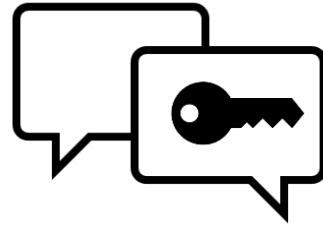
- Public responds emotionally as well as factually (WIFM?)
- Be aware of what you assume is obvious
- Demographics: age, gender, location
- Interests
- Topic fatigue
- Motivations behind resistance: economic, political, religious

What is the key message?

- How research translates to public benefit (patients)
 - Scientific advice:
 - Lifestyle choices
 - Treatment options
 - Progress made
 - Latest technologies
 - Integration of information
 - How to deal with uncertainty?
 - Expectation that scientists know everything
- 
- Feeling up to date about what is happening (patients and parents)
 - Encourage future participation in studies
 - Straightforward information (not patronising)
 - Explain the scientific process (justify use of animals etc.)
 - Why it is difficult and takes times!

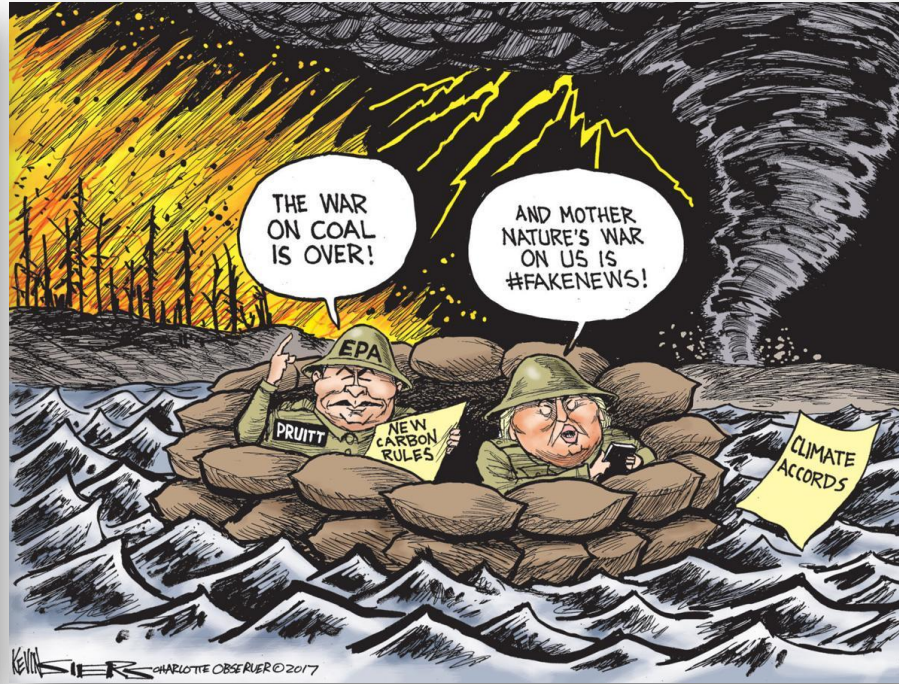
What is the key message?

- Main points of information you want your audience to **hear**, **understand**, and **remember**
- What you do, why you do it, how you are different, and what value you bring
- Understandable and engaging
- Relevant to lives of intended audience
- Concise: don't try to say too much
- Do not assume they want to hear/care up front
- Credible: don't overexaggerate or dumb down
- Concrete rather than abstract
- Real (active voice)
- Be aware of technical jargon
- Confidentiality?



What happens when scientific communication fails

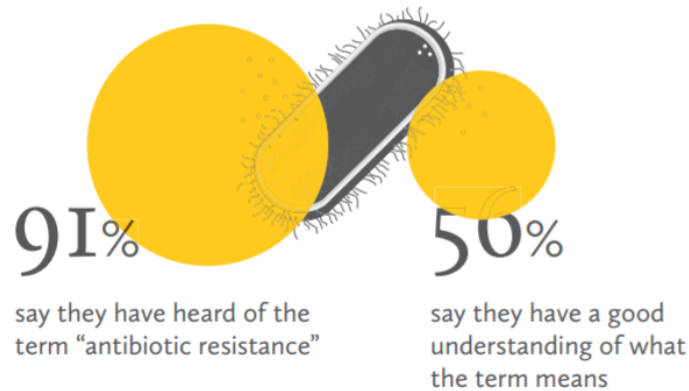
- Outrage, dread and stigma



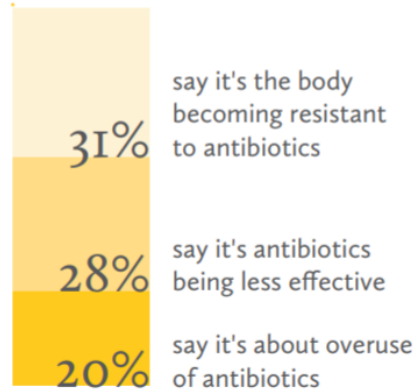
What happens when scientific communication fails^[1]

Antibiotic resistance

Knowledge and understanding of antibiotic resistance



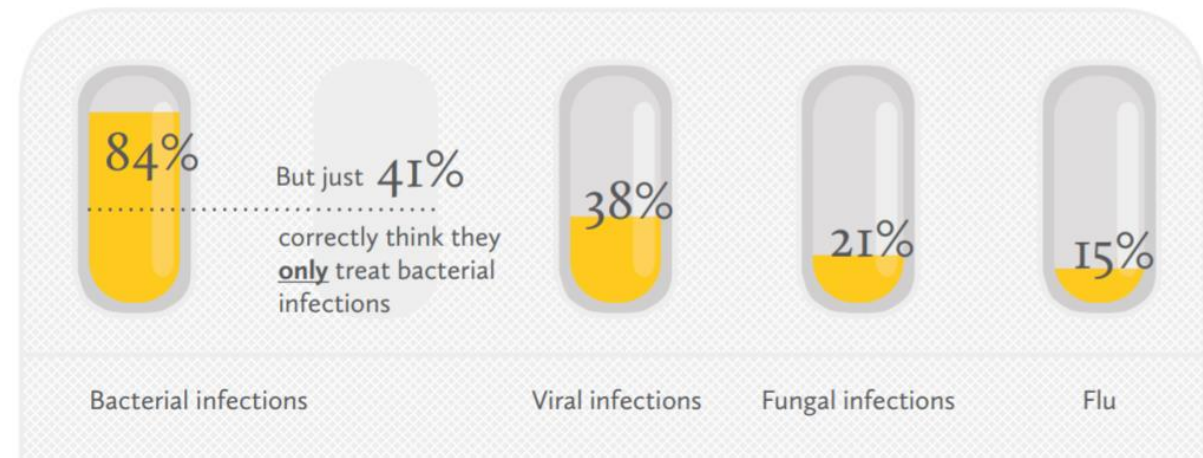
What do people understand by the term "antibiotic resistance"?



Beliefs around antibiotics

multiple answers allowed

What do people believe antibiotics treat?



What happens when scientific communication fails



#EuropeSaysNO

- GM opt-out notified
- No opt-out notified
- Non-EU country

17 countries and 4 regions
opt out of EU GM crop approvals



What happens when scientific communication fails

- Antibiotic resistance:

- 31% of respondents in a survey by the Wellcome trust thought antibiotic resistance means the body becoming resistant to antibiotics (only 9% referred to bacteria becoming resistant)¹
- 20% said it was about overuse of antibiotics, but 38% believe antibiotics can treat viral infections.

- GMO crops:

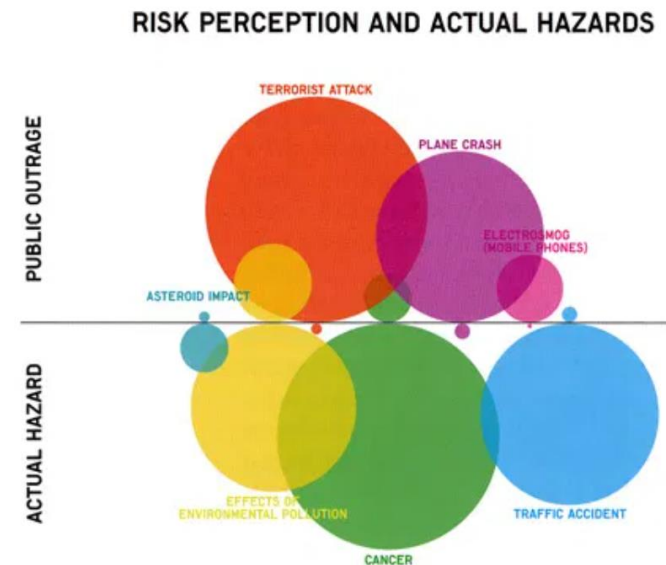
- 1994 Favr Savr tomato by Calgene first ever GM food product to reach consumers
- 1996 and 1999: equivalent tomato paste sold in UK (20% cheaper) outsells normal
- 1998 Pusztai affair: comments on British TV claiming detrimental health effects in lab rats fed GM potatoes
- 1999 Supermarkets pledge none of their house brand products would contain genetically modified ingredients
- 2003 EU develops most stringent GMO regulations in the world.

How to counteract?



- Proactive (vs reactive)
 - Understandable factual release before “rumours”
 - Monitoring to understand audiences

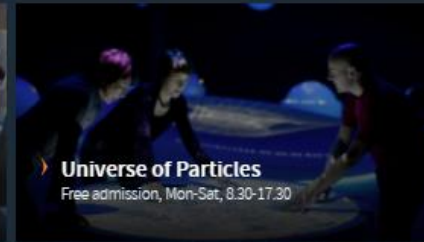
- Public assesses risk in a different way to scientists - 'fright factors'^[2]
 - involuntary (air quality) > voluntary (smoking)
 - identifiable victims > anonymous victims
 - contradictory statements
 - unfamiliar/novel sources
 - hidden/irreversible damage
 - children/multigenerational risk



Communication wins




EXHIBITIONS



GUIDED TOURS



Role of traditional media



MailOnline Science & Tech

Home | News | U.S. | Sport | TV&Showbiz | Australia | Femail | Health | **Science** | Money | Video | Travel | DailyMailTV | Discounts

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Cern scientists discover two new particles by smashing protons together - and they could shed new light on how the universe works

- The Large Hadron Collider in Geneva has discovered two new particles
- Discovery was made by smashing protons at 99.9999% the speed of light
- This replicates the conditions of the Big Bang and creates new particles that do not naturally occur on Earth today
- The two new particles are called Xi_b'- and Xi_b* and are each six times more massive than a proton
- Finding new particles improves our knowledge of subatomic physics
- And it also reveals how the universe works beyond our models

By [JONATHAN O'CALLAGHAN FOR MAILONLINE](#)
PUBLISHED: 11:54 BST, 20 November 2014 | UPDATED: 11:06 BST, 9 January 2015



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GENE-IOUS ADVICE What is the BRCA 'Angelina Jolie' gene, does it increase cancer risk and how does testing work in the UK?

Angelina Jolie, whose mum died from ovarian cancer, had preventative surgery after finding out she carried the faulty gene

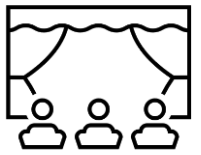
Josie Griffiths
18 Jan 2018, 12:20



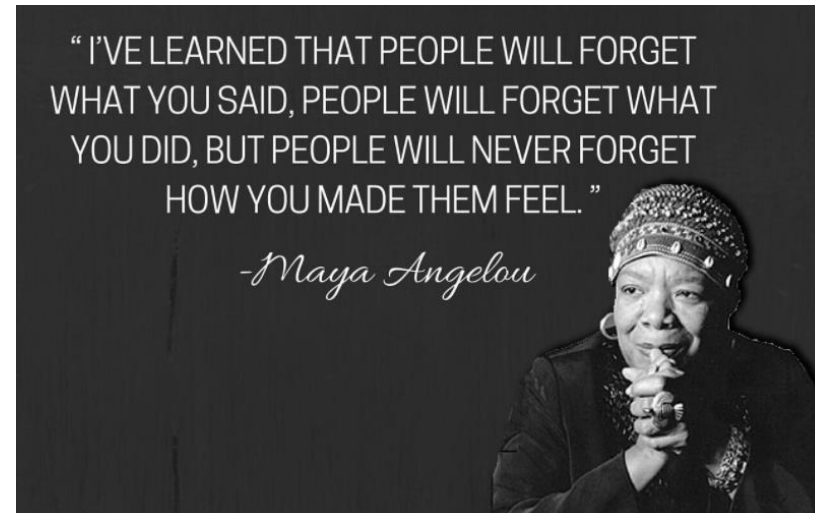
Assignment

- Create a video explaining the project for the general public
- Maximum 3 minutes (“Three Minute Thesis”)
- Videos will be posted on the consortium website to showcase our research
- Groups
 - WP2: Gaia, Filothei, Yvan
 - WP3: Hadjar, Madhulika, Flavio
 - WP4/6: Siti, Chilperic, Christoff, Ghadeer, Eugenio
 - WP5: Ligia, Maria, Kishore, Hong
- Examples: <https://www.youtube.com/watch?v=SnJoLaxD-xA>
- Tools: <https://www.openshot.org/> <http://avidemux.sourceforge.net/>
- Submit: one submission per group by email to Karen k.van.eunen@umcg.nl

How do I actually do it?!



- Plan with structure
- Speech:
 - Clear with variety
 - Pace, rhythm and pauses
- Body language
 - Confident
 - Eye contact
 - Gestures/movements
 - Habits/fidgeting
- Practice (a little)
 - Record and listen to yourself
- Analyse examples and role models



Starting points

- Brainstorm **key message** concepts
- List of **technical words** and how you can explain in straightforward terms
- Write an attention catching **opener**

References

1. Ipsos MORI (2016) Wellcome Trust Monitor, Wave 3. London: Wellcome Trust (<http://dx.doi.org/10.6084/m9.figshare.3145744>).
2. Infographic by Susanna Hertrich
3. Brownell SE, Price JV, Steinman L. Science Communication to the General Public: Why We Need to Teach Undergraduate and Graduate Students this Skill as Part of Their Formal Scientific Training. *J Undergrad Neurosci Educ.* 2013;12(1):E6-E10. Published 2013 Oct 15.
4. Besley, J. C. (2018). Scientists ' views about communication objectives. <https://doi.org/10.1177/0963662517728478>
5. Besley, J. C., Dudo, A. D., Yuan, S., & Ghannam, N. A. (2016). Qualitative Interviews With Science Communication Trainers About Communication Objectives and Goals. <https://doi.org/10.1177/1075547016645640>