Europlanet summer school 2017
Introduction to science communication training

Anita Heward
Since 2005, the Europlanet project has provided European’s planetary science community with a platform to exchange ideas and personnel, share research tools, data and facilities, define key science goals for the future and engage stakeholders, policy makers and European Citizens with planetary science.
<table>
<thead>
<tr>
<th>Date</th>
<th>Funding</th>
<th>Project</th>
<th>Budget</th>
<th>Activities</th>
<th>Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-2008</td>
<td>FP6</td>
<td>European Planetology Network (Coordination Action)</td>
<td>2 M€</td>
<td>Networking activities (NA)</td>
<td>42 Partners from 17 Countries</td>
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<tr>
<td>2009-2012</td>
<td>FP7</td>
<td>Europlanet Research Infrastructure</td>
<td>6 M€</td>
<td>Networking Activities, Transnational Access, Service Activities and Joint Research Activities</td>
<td>27 Beneficiaries + 16 Associate Partners from 25 Countries</td>
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<tr>
<td>2013-</td>
<td>N/A (self-sustaining)</td>
<td>Europlanet Community MoU</td>
<td>-</td>
<td>Community organisation</td>
<td>70+ Signatories</td>
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<tr>
<td>2015-2019</td>
<td>Horizon 2020</td>
<td>Europlanet 2020 RI (Advanced Research Infrastructure)</td>
<td>10 M€</td>
<td>NA, TNA, JRA and services</td>
<td>33 Beneficiaries + 22 Associate Partners from 22 Countries</td>
</tr>
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</table>
5 Planetary Analogue Field Sites

- Rio Tinto, Spain
- Ibn Battuta Centre, Morocco
- Glacial and volcanically active areas of Iceland
- Danakil Depression, Ethiopia
- Tírez Lake, Spain
7 Laboratories in Distributed Planetary Simulation Facility (DPSF)

- Planetary Emissivity Laboratory, DLR, Berlin
- Planetary Environment Facilities, Aarhus University, Denmark
- Mars Chamber, Open University, UK
- High-pressure laboratory, VU University, Netherlands
- Cold Surfaces spectroscopy, IPAG, Grenoble, France
- Interactive Microbiome Research Facility, Medical University Graz, Austria
- Petrology-Mineralogy Characterisation Facility, Natural History Museum, UK

4 Laboratories in Distributed Sample Analysis Facility (DSAF)

- Radiogenic & non-traditional stable isotope facility: Geology & geochemistry
  - VU University, Netherlands
- Radiogenic, non-traditional stable & rare gas isotopes, CRPG, Nancy, France
- Radiogenic & stable isotopes, Open University, UK
- Radiogenic & non-traditional stable isotopes, University of Münster, Germany
Virtual European Solar and Planetary Access (VESPA)

- Virtual Observatory for Solar System sciences
- State-of-the-art, user-friendly access to diverse planetary datasets
- Visualisation, analysis and data mining tools for comparing and understanding planetary environments

http://www.europlanet-vespa.eu

Planetary Space Weather Services (PSWS)

- Services to trace propagation of planetary/solar events through the Solar System and model the response of the planetary environment
- 5 ‘toolkits’ to assist researchers and industry planning for space missions (General planetary space weather, Mars, Comets, Outer planets, “Event-diary” to predict and detect events e.g. meteor showers and impacts).

http://planetaryspaceweather-europlanet.irap.omp.eu
Focus on:

- Widening participation to countries with ‘newer’ space programmes and amateur astronomers.
- Fostering industrial-academia collaborations, through innovation working groups and technical roadmapping
- Supporting young scientists (20% workshop places set aside for early career researchers)

**25 workshops over the 4 years of Europlanet 2020 RI:**

- Topical science workshops
- Strategic scientific workshop, organised by International Space Science Institute
- Coordination meetings for ground-based observational campaigns
- Technology foresight workshops with industry

**Exchange program - short term visits and exchange of personnel**

Outreach

**Target audiences:** outreach providers, educators, informal learning, media, policy makers, industry, general public, teachers and students.

- **Outreach services and community support**
  - Best practice meetings, training workshops
  - Collections of planetary-related outreach activities
  - Funding scheme and Europlanet Prize for Public Engagement

- **Dissemination to stakeholders**
  - Europlanet Media Centre (Press releases, blogs, interviews)
  - Social media (Twitter, Facebook, Instagram, LinkedIn, Webinars)
  - Policy engagement (Dinner debates, briefings, conference sessions and exhibitions)

- **Outreach tools**
  - Europlanet Climate Detectives - Raspberry PI climate sensors
  - 5-minute animations on planetary topics
Modules for the Europlanet 2017 Summer School:

- Basics of Science Communication
- Writing for the Media
- Engaging with Schools
- Engaging with the Public
- Social Media Communications
- Interactive best practice and feedback in science communication
Science Communication Tasks:

- Elevator pitch (during session)
- Writing a press release (long assignment)
- Developing a schools activity (during session/optional assignment)
- Developing a public engagement activity (during session)
- Social media communications (encouraged throughout the workshop! #europlanet2017)
- Interactive best practice and feedback in science communication (during session)
Your Trainers

Rosa Doran
Nuclio

Eleni Chatzichristou
IASA

Thilina Heenatigala
Science Office

Pedro Russo
Leiden University
About me

- BSc Physics and Space Science, MSc Earth Observation Science, PGDip Science Communication, MA Creative Writing
- Freelance science communicator (media, public, policy) since 2001
  - Europlanet (2006 - present)
  - Twinkle Space Mission/UCL (2015 - present)
- Exhibition Developer/Curator at the National Space Centre, Leicester (1998-2001)
Who are you communicating with and why?

Anita Heward

Europlanet 2020 RI - Public and Policy Engagement
Two central questions for ALL science communication:

- What are your communication goals?
- Who is your audience and what is the context for the communication activity?

WARNING: COMMUNICATION IS NOT AN EXACT SCIENCE
What are you trying to achieve in your communication?

1. Inform?
2. Inspire?
3. Entertain?
4. Counter a misconception?
5. Defend a point of view or action?
What do you need to know about your audience and why?

1. Scientific-technical literacy — — — — — — — Explanation
2. Pre-existing beliefs/misconceptions ——— Persuasion
3. Pre-attitudes

4. Relevance (interest) — — — — — — — — — — Catching attention
Never underestimate the intelligence of your audience or overestimate their background knowledge
How can I find out about my audience?

For mass audiences:
- surveys (e.g. Eurobarometer)
- audience studies (e.g. readership or listenership figures)
- read/follow the publication/channel closely over time

For small audiences:
- ask the organisers
- ask the teachers
- ask presenters who addressed the audience previously
- study evaluation of previous/similar events

Above all: use your general social skills and judgement to find the right pitch for your audience
More than half of Europeans (56%) have studied science or technology.
- 44% studied at school
- 16% studied
- 3% studied somewhere else.

Are people interested in science?

In my daily life, it is not important to know about science

Blue : Agree
Red : Disagree
Light blue : neither agree nor disagree
Grey : Don’t know

Eurobarometer 2014
Public perceptions of science, research and innovation

Eurobarometer 2005
Europeans, Science and Technology
QC1. In everyday life, we have to deal with many different problems and situations, where we feel more or less interested and confident. I am going to read you a number of statements. For each of them, please tell me whether you are…

- Environmental problems: 37% Very interested, 51% Moderately interested, 11% Not at all interested, 1% Don’t know
- New medical discoveries: 32% Very interested, 50% Moderately interested, 17% Not at all interested, 1% Don’t know
- New scientific discoveries and technological developments: 30% Very interested, 49% Moderately interested, 20% Not at all interested, 1% Don’t know
- Sports news: 25% Very interested, 40% Moderately interested, 35% Not at all interested, 0% Don’t know
- Culture and arts: 20% Very interested, 49% Moderately interested, 30% Not at all interested, 1% Don’t know
- Politics: 18% Very interested, 50% Moderately interested, 31% Not at all interested, 1% Don’t know
Q1. Let us talk about those topics in the news, which are of interest to you. For each topic I read out, please tell me if you are interested, or not interested.

Base: all respondents
% "Interested" shown, EU27
IF VERY OR MODERATELY INTERESTED IN ‘NEW INVENTIONS AND TECHNOLOGIES’ OR ‘SCIENTIFIC DISCOVERIES’:
Which science and technology developments are you most interested in? % EU25

- Medicine: 61%
- The environment: 47%
- Humanities (history, literature, theology, etc.): 30%
- The Internet: 29%
- Economics and social sciences: 24%
- Astronomy and space: 23%
- Genetics: 23%
- Nanotechnologies: 8%
- None of these (SPONTANEOUS): 3%
- DK: 1%
Survey suggests half of EU citizens believe scientists are 'dangerous'

According to a Eurobarometer survey, a majority of people don’t trust scientists. The only way to reverse this trend is for academics to step up their efforts to communicate with the public, writes Eoin Leitice.

Worrying too is the finding that 53% of European respondents (46% of UK respondents) agree with the statement that, because of their knowledge, scientists "have a power that makes them dangerous." Not potentially dangerous, notice, but dangerous. When you take into account the 23% who didn’t know or who neither agreed or disagreed, the survey suggests that just 24% of EU citizens believe that scientists are not dangerous.

Some consolation can be taken from the fact that in the equivalent Eurobarometer survey in 2005, 59% of EU respondents (58% in the UK) thought scientists were dangerous.

According to the latest survey, a majority believe that scientists do not put enough effort into informing the public about new developments in science and technology (57% of EU respondents and 56% of UK respondents).

The majority of EU citizens (63% of respondents) feel that scientists working in university or government laboratories are best qualified to explain scientific and technological developments. Just 32% believe that scientists working in industry are best placed and a mere 16% of respondents (14% in the UK) that newspaper journalists are best equipped to discuss such developments.

Compared with 2005, there has been a noticeable shift towards trusting scientists in academia or the public services to explain science and technology (up 19 percentage points in the UK) and away from newspaper journalists (down 9 percentage points in the UK).
Findings of science communication research

1. Men tend, in general, to be more knowledgeable and have a more positive attitude towards science and technology.

2. Men tend to be more interested in the physical sciences and technology and women in the life sciences.

3. The younger the person is, the more likely they are to closely follow and appreciate techno-scientific advances.

4. People with more science courses at school tend to have higher levels of relevant knowledge and - probably - are more favourable to science.

5. HOWEVER The most “scientifically literate” members of society are not always the most deferential to science
But who is the ‘General’ Public?

Why is residual public not interested?

1. Not scientifically minded
2. Not my job
3. Not relevant

Why *are* people interested in science?

1. Relation to public values (risk, benefit, progress, sex, crime, moral/religious positions, national prestige)
2. Public policy (addressing audience members as citizens)
3. Personal decisions & behavior (e.g. health advice)
4. “Wonder” (exploration, pushing boundaries, contradictions to expectations)
5. Scientific answers to “philosophical” questions (”Where do we come from?”)
How interested/informed are you in other areas of science? e.g.

- Genetics?
- Epidemiology?
- Neuroscience?
- Oceanography?
- Anthropology?
Deficit Model

- Top down
- One way
- Paternalistic
Dialogue

- Listening as well as explaining
- See public as holding lay expertise
- Reaching consensus or balanced opposition
- Accepting science is often not only/decisive voice in discussion
Barriers to Dialogue

- Assuming a person will behave in the same way in other situations
- Trying too hard to construct a consistent picture of the other
- Being influenced too much by first impressions
- Making positive/negative evaluations about people based on their background
- Being influenced too much by negative points
- Lack of attention
Listening skills

- Interpreting (Paraphrasing, summarizing - in own words)
- Empathising (Expressing an understanding of the speaker’s feelings)
- Asking questions
- Paying attention (Eye contact, head nods to show involvement)
- Suspending judgement (Open mind; evidence & argument)
- Eliminating distractions (Turning off mobile phones etc.)
- Taking notes
Communication skills

- Less is more (keep it short and simple)
- Find a good hook to start with
- Spell out acronyms (and avoid them where possible)
- A picture says 1000 words
- Use the right tool (channel) for the right job
- Think about evaluation
- Proof read everything
- Be yourself!
Your Challenge - The Elevator Pitch

- You have 1 minute to convince the group why we should care about your area of research (or astronomy/planetary science in general)