

**ICSU Committee on Freedom and Responsibility
in the conduct of Science (CFRS)¹**

Advisory Note² "Science Communication"

This Advisory Note was informed by the International Forum on "Science Communication: Responsibilities of the Scientific Community and the Media" that was held in Bogota on 18-19 November 2010. The event was co-sponsored by the ICSU Committee on Freedom and Responsibility in the conduct of Science (CFRS), the Colombian Academy of Sciences and the National University of Colombia, with support from several local and international organisations. It was attended by about 500 students, academics and journalists.

Science communication in context

The effective communication of scientific results and viewpoints to the public is an important responsibility of the scientific community. This is particularly so for science that has been publicly funded.

New information and communication technologies provide both enormous opportunities and new threats for effective science communication. Provided that issues of accuracy, transparency, accountability and openness are taken seriously, then the use of rapid, worldwide communication tools can improve public understanding and engagement. It is important that these principles are embraced by science and society as a whole.

Many of the issues on which science can contribute are complex and need to be addressed by multiple disciplines and approaches. Explaining and communicating this complexity- its relative certainties and uncertainties- is a particular challenge for the scientific community.

The processes of science, including evaluation of evidence via peer review and integrated assessments, are often poorly understood. There is an onus on the science community to explain these processes, both generically and in relation to specific scientific issues.

As public communication becomes central to the scientific endeavour, it should be rewarded and valued accordingly. Teaching and training in communication skills should be an important part of science education.

Guidelines and responsibilities of scientists

1. Scientists are individually accountable for their public communications and should be aware of their potential impact on both science and society.
2. Regardless of the audience, communications should be accurate and considered, reflecting the status of scientific evidence and uncertainty.
3. Estimates of the importance, future implications and impact of scientific results should be realistic.
4. Despite pressures to the contrary, public communication of new scientific findings should normally follow acceptance by peer review.
5. Scientists have a special duty to communicate findings that have implications for human survival or well being, including threats to the environment.

¹ The CFRS is a policy committee of the International Council for Science (ICSU). See www.icsu.org/freedom-responsibility/ for its terms of reference and further information.

² This note does not necessarily reflect the views of individual ICSU Member organisations. The responsibility for its contents rests with CFRS.

6. Scientists responding to public emergencies should be aware of the potential ramifications of their messages and take particular care to avoid both undue alarmism and complacency.
7. Scientists should be transparent in communicating the limits of their own personal expertise and make the distinction between those areas of science in which they might reasonably be considered by their peers to have expertise and other areas on which they may express views.
8. As members of the broad and diverse public, scientists need to understand the different audiences that they communicate with, and what those audiences' requirements are in terms of appreciation and understanding of the subject matter.
9. Science communications may be directed primarily towards selected groups in society, such as politicians, industrialists and advocacy groups, but they should, as far as possible, be publicly accessible.
10. Communication is a two-way process: scientists should not only present their findings but should also be prepared to engage in relevant debate and discussion.

With regard to journalists and the news media

The science community, when adhering to these guidelines, expects journalists to take care to report scientific findings and views correctly, and take precautions to avoid misleading interpretations. To this end, the science community has an obligation to assist the media, whilst recognising the independence of both parties.

With regard to providing scientific policy advice

The science community should also note the recommendations of the OECD Global Science Forum and specifically its observations on "Communicating and using the advice":

"Premature, inaccurate or biased reporting can undermine the whole advisory process. 'Who is responsible for communicating what and to whom?' is a critical operational question for any advisory process. The individual and institutional responsibilities and limits with regards to internal and external communication should be fully understood. This understanding should include definition of the advisory and decision-making responsibilities of all the actors in the advisory process; decision making protocols should be established in advance.

Transparency in scientific advisory processes is of the utmost importance. As far as possible, scientific advice and associated evidence should be made publicly available in a timely manner. Policy-makers should be transparent in their use of scientific advice. They should be able to explain how any requested scientific advice has been considered when drawing up policy. In particular they have a duty to explain the rationales when making policy-decisions that are in clear conflict with solicited scientific advice."³

³ Scientific advice for policymaking: the role and responsibility of expert bodies and individual scientists (April 2015), p. 6. See www.oecd-ilibrary.org/science-and-technology/scientific-advice-for-policy-making_5js3311jcpwb-en