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# Science Communication

CITAB - Centre for the Research and Technology of Agro-Environmental  
and Biological Sciences.



*By Dr. M. M. Essiwi*



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**Science communication** encompasses a wide range of activities that connect science and society.<sup>[1]</sup> Common goals of science communication include informing non-experts about scientific findings, raising the public awareness of and interest in science, influencing people's attitudes and behaviors, informing public policy, and engaging with diverse communities to address societal problems.<sup>[2]</sup> The term "science communication" generally refers to settings in which audiences are not experts on the scientific topic being discussed (outreach), though some authors categorize expert-to-expert communication ("inreach" such as publication in scientific journals) as a type of science communication.<sup>[3]</sup> Examples of outreach include science journalism<sup>[4][5]</sup> and health communication.<sup>[6]</sup> Since science has political, moral, and legal implications,<sup>[7]</sup> science communication can help bridge gaps between different stakeholders in public policy, industry, and civil society.<sup>[8]</sup>



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**Science communicators** are a broad group of people: scientific experts, science journalists, science artists, medical professionals, nature center educators, science advisors for policymakers, and everyone else who communicates with the public about science.<sup>[9][10]</sup> They often use entertainment and persuasion techniques including humour, storytelling, and metaphors to connect with their audience's values and interests.



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## Science Communication

### Why do we communicate?

Countries and governments increasingly value the **role of science as the driving force of the Knowledge Society**.

Scientific and technological advancements have impacts on political stability, economic growth, personal and social well-being and overall progress. Therefore, **science communication is an area that is growing and gaining recognition**.



## Science Communication



Promote more positive attitudes towards science and technology



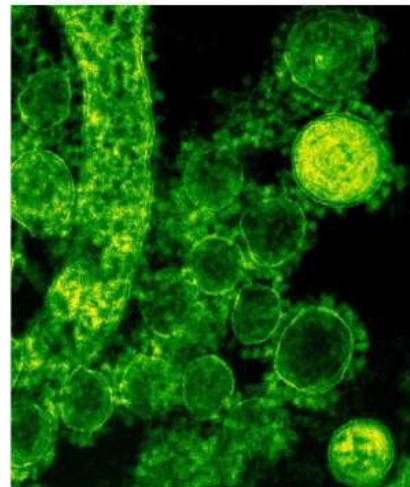
Enhance recognition and trust in science



Encourage public engagement in scientific issues



Empower citizens to make informed decisions and influence policy-making





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## The Power of Science Communication

help scientists to be better science communicators in order to:

- help the public understand science as part of their real lives,
- see not only the importance of the science and its source of pleasure and wonder, but also to be able to make decisions about it as citizens, policymakers, funders, etc.
- help in educating citizenry, concerned about the threats facing our planet to better shape the direction of political and policy decisions,

Mihaela Sabina Jucan<sup>a</sup>, Cornel Nicolae Jucan<sup>b,\*</sup>



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## Science communication: a contemporary definition

The aims of scientific awareness, understanding, literacy, and culture may be distilled into five broad personal responses to science. If sufficient people exhibit these responses, then they may be considered as applying to the public. These personal responses may be grouped under the label

AEIOU (the vowel analogy): Awareness of science; Enjoyment or other affective responses to science; Interest in science; the forming, reforming or confirming of science-related Opinions (or attitudes); and Understanding of science. The vowel analogy— AEIOU—is a concise label that personalizes the impersonal aims of scientific awareness, understanding, literacy and culture, and thereby defines the purpose of science communication.

## Science communication: a contemporary definition

### Science Communication

#### The vowel analogy

SciCom may be defined as the use of appropriate skills, media, activities, and dialogue to produce one or more of the following personal responses to science.



#### Awareness

Make the citizen aware of and familiar with aspects of science



#### Enjoyment

Enjoyment or other affective responses, e.g. appreciating science as entertainment or art



#### Interest

The citizen will become voluntarily involved with science or its communication



#### Opinions

Be able to form, change, or confirm opinions, ideas, attitudes regarding a scientific subject



#### Understanding

Comprehend science, its content, processes and social factors



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## Science communication: a contemporary definition

To date, science communication has not been clearly defined. “Science communication is typically thought of as the activities of professional communicators (journalists, public information officers, scientists themselves)” or simply as “. . . the promotion of the public understanding of science .

The 2000 report “Science and the public: A review of science communication and public attitudes to science in Britain” defines science communication as a term that “encompasses communication between:



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## Science communication: a contemporary definition

- groups within the scientific community, including those in academia and industry
- the scientific community and the media
- the scientific community and the public
- the scientific community and government, or others in positions of power and/or authority
- the scientific community and government, or others who influence policy
- industry and the public
- the media (including museums and science centers) and the public
- the government and the public.



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## Communication in Science

### Press Relations

Build and maintain relationships with journalists

### Website

Powerful online tool that informs, engages and update an organization like CITAB

### Social Media

To engage with the public, share updates, and respond to comments and messages

### Events

Essential for building relationships, sharing knowledge, engage stakeholders



### Meetings

Regular meetings are used to discuss projects, goals, and important updates

### Mailing List

Daily updates with relevant information for all the researchers

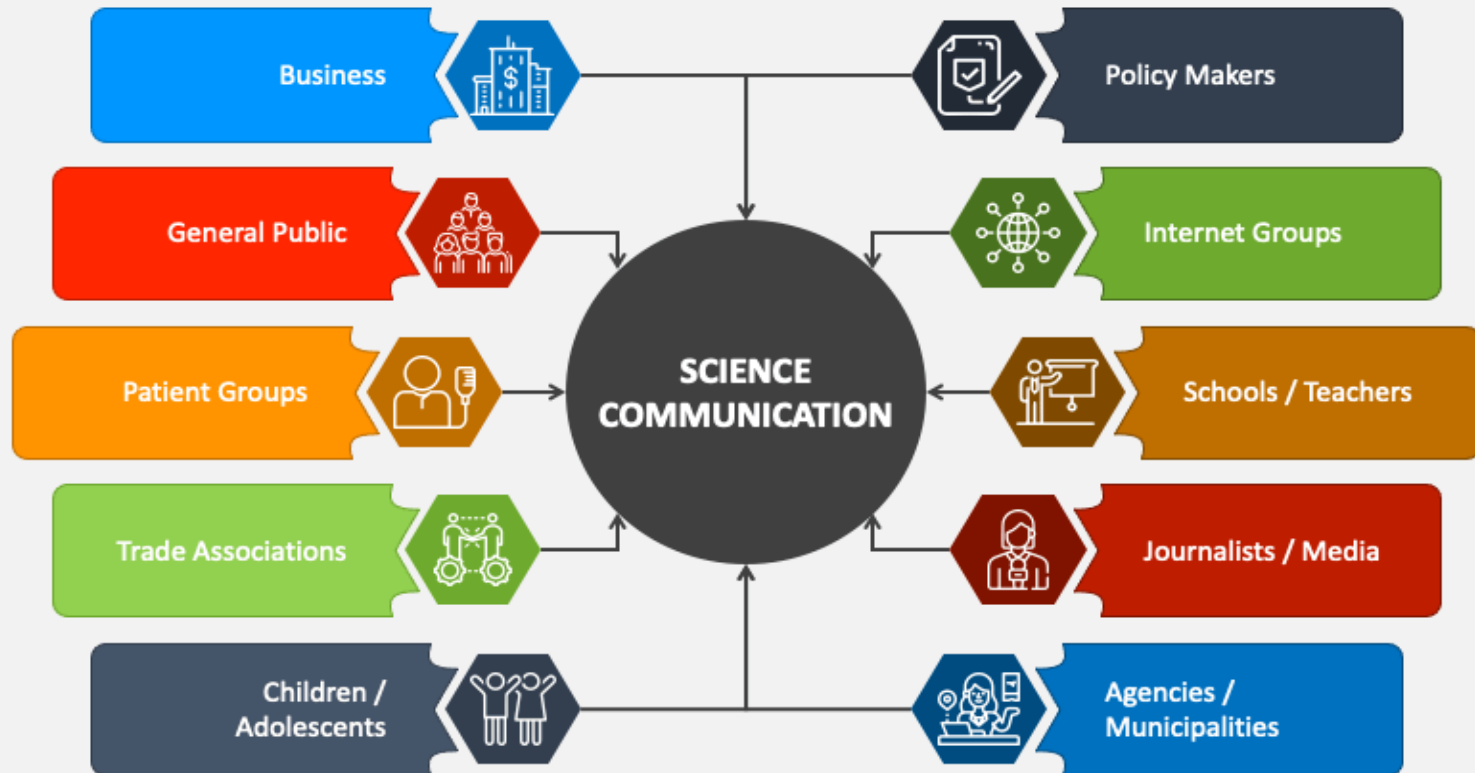
### Newsletter

Update on CITAB's news, achievements, and upcoming events

### In-person Communication

Face-to-face conversations are essential for effective internal communication

## SCIENCE COMMUNICATION





## Public Relations



If I was down to my last dollar, I would spend it on public relations.

Bill Gates

# Communication in Science

## Public Relations (PR)

Public relations is a field that encompasses the management of an organization's **relationships with various publics**, including customers, investors, employees, government agencies and the general public.



## Press Relations (Media Relations)

Press relations, on the other hand, is a subset of public relations. It specifically focuses on **managing an organization's interactions with the media**, such as newspapers, magazines, television, radio, and online news outlets.





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## Final Notes



### Media agenda

A press officer needs to stay updated and understand how to align research with the media agenda



### To be patient and persistent

We shouldn't expect all results immediately. Public relations take time because they are built between people. It's necessary to let connections form between journalists and press officers



### Identify your audience

The same message cannot be delivered in the same way to different audiences. Speaking to peers or to society is very different



### Is all research communicable?

It depends on the type of research, its relevance, and the target audience. Some research may be highly technical and relevant only to a specific audience



### Choose good spokespersons

People who are more skilled at communicating can convey a specific message more effectively. This is obvious, but it's true



### Media training

All people can acquire communication skills. For those who have more difficulties, there is training available in this area. Being able to communicate effectively is within everyone's reach





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I know of no area of human endeavor  
in which science has not had at least  
one important thing to say

Carl Sagan



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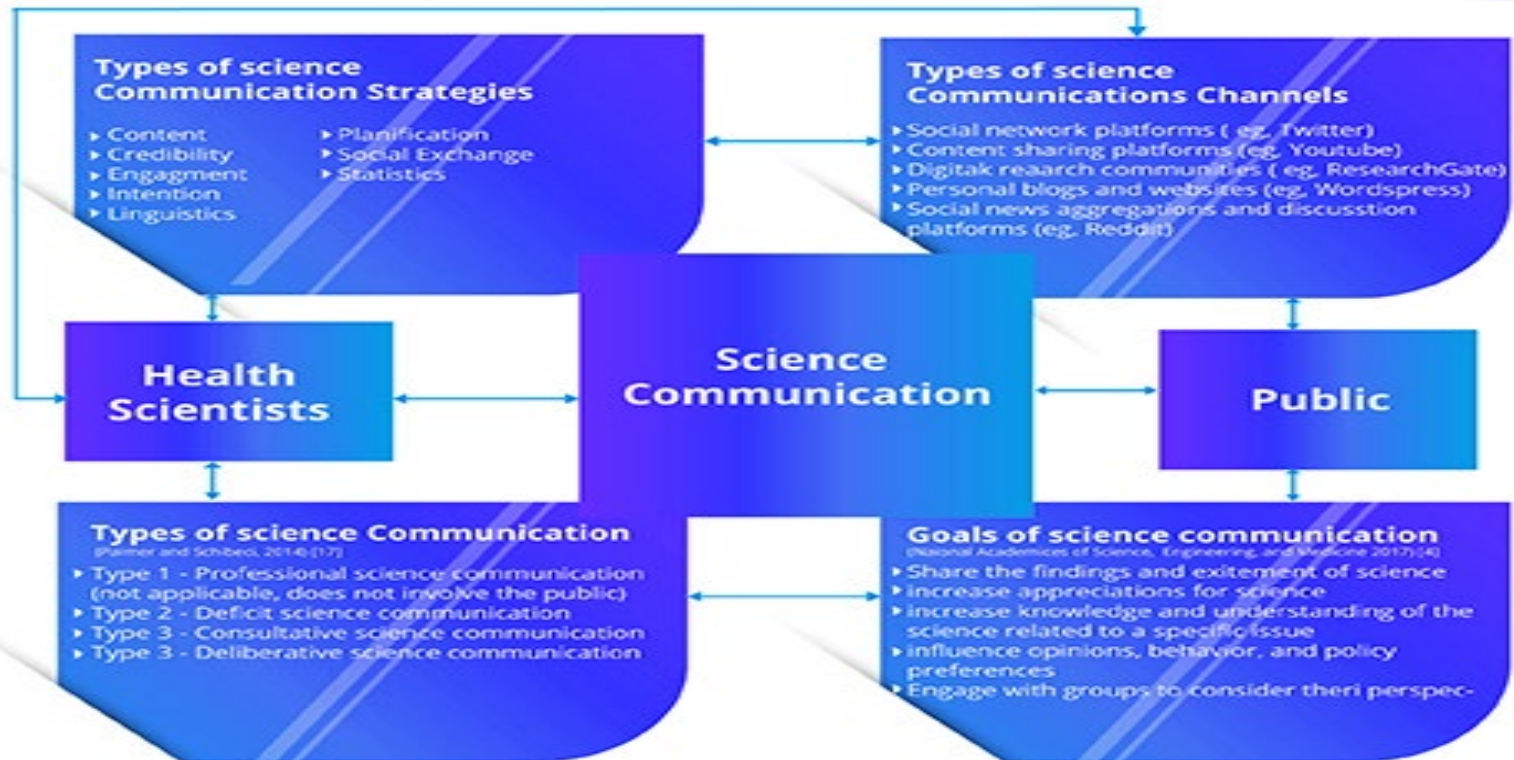




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# Ethics of Scientific Communication in Biomedicine





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