**Instructions**

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| Please fill in your group responses to the assigned questions.  This document can serve as your online notes that record the collective outcome of our discussions. |

**Tutorial 1**

* **Exploring the importance of science communication**

Discuss the following questions with your group members. Your group will be selected to share your insights with the rest of the class.

1. Why do scientists need to communicate to the public and their peers from different disciplines?

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| **Student Name** | **Group Response** |
| Group1 | By communicating with their peers, they are able to connect their studies across different disciplines. Moreover, this helps scientists themselves realize the importance and societal impact of their own work (e.g., climate studies aiding in the implementation of public policies).  When scientists directly communicate with the public, instead of depending on the media to report new findings, this can prevent the spread of misinformation which could result in panic among the public (e.g., the false information that Covid-19 was created in the laboratory).  The information also helps increase the public’s knowledge of certain scientific topics, helping society make more informed decisions. (e.g., animal activists misunderstanding the way animal testing is done coupled with its necessity in propagating research and development).  Scientists also have the moral obligation to share the outcomes of their research with the public as they are using large amount of resources to do their work (e.g., government funding and facilities). |
| Group 2 | These scientists are experts in their own field, it’s their responsibility to:  - To correct misunderstandings / incorrect knowledge (eg: fake news – Vaccination gives children autism and magnetic powers; <https://timesofindia.indiatimes.com/life-style/health-fitness/home-remedies/the-science-behind-healing-crystals-explained/articleshow/70482968.cms> - HEALING CRYSTALS)  - The nature of scientific research can be very technical and take years of expertise and specialised study to understand at times. We cannot expect the general public to fully understand a research article after reading it for the first time. Thus, it is up to the ability of the scientist to relay the information in a more understandable manner.  - Share ideas with others from different disciplines (for example, to allow for possible collaborations between different departments to tackle problems that are multi-disciplinary in nature)  - can help government bodies to make changes in the law according to new findings etc climate change or anti vaxxers  - promote science to the public. (eg, make science more popular to the young – if no one is interested in science, how will the world improve)  - To allow people to make more informed decisions in their daily lives, e.g. people do not know that antibiotics are meant for bacteria, not viruses  - Encourage activism for changes. (e.g., now, climate change is known to be worsened by human activities. Hence, there are now more human activists discouraging the use of fossil fuel and encouraging the transition of natural gases to renewable energy. This will pressure the governments and the private companies to also consider the environmental impacts of their organization and act accordingly rather than for them to focus on the financial gains.) |
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1. Do you think science communication skills are important to you as a science student and future scientist? Please explain.

| **Student Name** | **Group Response** |
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| Group 3 | Yes. it is important. Because it is necessary to make scientific jargon accessible for the general public to understand because they might not have the background to understand such terminologies. (Eg. convince investors who are usually not well-versed in science to invest in our research)  It can also further our understanding in the topics that we are unfamiliar with.  (Eg: It helps people who are not studying science related degrees to understand scientific jargon better as the subject discussed is more general and holistic)  Helps us understand the general public’s needs and wants by thinking from their point of view (e.g. user testing??) |
| Group 4 | Yes   * + being able to relay information increases trust between us and the general public – perceive our research as obscure – if communicate properly, they will understand it better   + On the other hand, communicating ideas effectively reduces misunderstanding and inaccuracies --> ensure that the audience is well-informed   + Also, if we can relay the information effectively and accurately, investors will be more likely to invest in the research --> important to have sufficient research funding * E.g. in the context of lab animals; if the public is not well-informed about how the animals are being handled and used, they might jump to conclusions and deem animal testing to be immoral; not all animal tastings are harmful and unethical (<http://blogs.nature.com/naturejobs/2016/11/04/the-black-box-effect-in-science-communication/?WT.mc_id=FBK_NatureJobs>), extracting slime from snails through stimulation   No  Science is objective in nature  However, the way we present the data is subjective  Thus communication is still important |
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* **Exploring popular science writing**

1. According to the above extracts, what is the purpose of popular science writing?

| **Student Name** | **Group Response** |
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| Group 1 | Its purpose is to simplify, and yet sustaining the importance, accuracy and emphasis (impact/significance) of, scientific findings for those with no scientific background to be able to grasp easily.  Popular science writing makes these complex scientific topics more relatable to the general public through simplifying scientific jargon and making connections to current affairs. Thus, reducing the susceptibility of the public to misinterpret the message being conveyed or finding the topic too complicated that they choose to disregard it. |
| Group 2 | Scientific communication de-mystifies the results of a scientific experiment  - Take complex scientific findings and convert into them into a simple form that people will be to understand easily without prior knowledge while also being enticing for them to read (even scientists from different fields will find it difficult to understand research from another discipline)  - informs readers how their life will be changed (eg: readers read an article about how intermittent fasting can prolong one’s life --> makes better life decisions)  Can help people who are not versed in the subject understand how other things come together and affect society.  "Popular science writing also informs readers about the nature and working of sciences themselves. Corson’s article, in addition to sharing lobster-related facts, also talks about the advantages and drawbacks of field-based versus laboratory-based research methods, and about how a scientist’s choice of tools will influence what he or she learns."  To help people be interested in and understand scientific developments |
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1. Do you think that the popular science writing genre is easy or difficult to accomplish? Explain your response. E.g. have you ever tried to explain a complex concept to someone who wasn’t from your discipline?

| **Student Name** | **Group Response** |
| --- | --- |
| Group 3 | Difficult if the audience has no prior background knowledge (they don’t know what they dont know)  The person explaining assumes that the audience has what he thought was basic knowledge, but is by no means basic  There is no visual reference that can help the audience visualize abstract concepts  Complex concepts are required to be broken down into more basic building blocks before they can be truly understood by the public.  Scientists have the skills in doing the experiments and producing accurate results. But the problem comes when they need to explain the findings to the wider audience. |
| Group 4 | Accomplish means audience understands information easily and does not have misconceptions  Use a hook (general appeal)  Quite difficult   * Making scientific terms easier to understand whilst preserving the meaning behind what you’re trying to explain. * People are not naturally receptive to ideas they are not familiar with or not interested in |
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