A team of academic researchers is conducting a survey of scientists interested in cell-cell communication. The aim is to initiate a discussion on a transformative health project requiring between $100M and $1B, to be designed and executed by the relevant scientific community. The “Snowmass Process”, regularly conducted by particle physicists, is an example of a community level consultation to define the most important questions in a scientific field and identify promising opportunities to address them, including large-scale projects. Our work on science philanthropy suggests that such an effort in the biomedical field could hold considerable appeal to donors.

1- It is important to communicate clearly to our colleagues and to the rest of society the benefits for human health that the project will bring. For example, cell-cell communication plays a key role in most human diseases, including cancer, cardiovascular disease, neurodegeneration, immunological and infectious diseases. Altered intercellular communication is also one of the hallmarks of aging. Please suggest which scientific and medical benefits should be presented in detail or emphasized.

2- A concern for a large scientific effort is to avoid groupthink and support diverse innovative approaches. It is also important to provide recognition to the participants. It might be desirable for the scientific community to be in charge of the consultation, to make sure that everyone’s voice is heard. Do you share these concerns? If so, how might the organizational efforts be designed to achieve this?

3- From initial discussions it emerged that it would be transformative to have a complete picture of the signals acting on cell receptors and of their functional effects. This would include their actions individually and in combinations, in different tissues, *in vitro* but most importantly also *in vivo*. How could such an effort be designed? Which techniques should be used or improved? Are there any important data that are presently impossible to obtain because of technological limitations? Should experts in bioinformatics and data analysis be involved? Feel free also to suggest alternative or additional transformative aims.

4- A challenge that might be beyond the capabilities of individual laboratories or institutions is mapping the integration of intercellular signals beyond the local tissue level. How do cell types from different tissues signal to each other dynamically and specifically? Can we define the cell-cell communication network at different levels within the whole body?