Ladies and Gentlemen,

As an adjunct professor who has engaged in historical research, it is a great pleasure to be here today and attend the discussion about the importance of scientific knowledge in foreign policy. I want to thank the Council of Finnish Academies for organizing this event and enhancing the dialogue on this topical matter, Arctic and science diplomacy.

In my double role with a toehold in the scientific community and a larger one in politics I have come to the conclusion, that decision makers need to have access to the results of scientific research as much as possible, but even when these results are easily available it is not necessarily accessed or used where decisions are taken. This conclusion applies to social sciences, but does it also apply to the science relevant to managing the Arctic?

1. The role of scientific knowledge in managing the Arctic

As you all very well know, in terms of the natural environment the Arctic region is one of the purest and best preserved in the world. The Arctic environment is highly exceptional - but also extremely sensitive and vulnerable. Currently the Arctic region is undergoing a number of rapid, conflicting developments. Arctic areas are witnessing the effects of global warming more dramatically than any other part of the world.
According to the Intergovernmental Panel on Climate Change, the IPCC, about 50 per cent of the current tundra may become forested in the long term. At the same time, more carbon dioxide and methane are released from the ground than ever before. Global warming threatens particularly species typical of Arctic conditions. The animal species of tundra and cold deserts are losing their breeding and feeding habitats due to the changes in vegetation. In autumn 2012, the extent of Arctic sea ice reached an all-time low since the beginning of satellite monitoring.

Simultaneously and conflictingly, new arctic transport routes are opening up; energy resources and minerals are being exploited and tourism is on the increase. Economic and transport activity is increasing in the region. This always opens up new possibilities for economic advancement and progress for the people but also brings new problems and challenges.

The Arctic region is greatly affected by a wide range of global changes. This makes it necessary to pay increased attention to actions to mitigate climate change; conserve and protect the natural environment; promote the well-being of the local population and secure the viability of the traditional cultures of the indigenous peoples.

All this information regarding climate change and its impacts has a common denominator. It is scientific information and a result of expert and research activities. We don't assume or guess. We need to know the facts in order to be able to react in the best possible way. If we want to understand the Arctic regions and the change taking place there, we need to look at it from as broad a perspective
as possible. We must take into account natural resources, traffic routes and economic activity, on the one hand, and the environment and the people on the other. This calls for wide-ranging collaboration across the disciplinary and national boundaries: the future of the Arctic is a global issue and concern.

2. Finland's foreign policy and the Arctic

International cooperation in the Arctic is one of the key principles introduced in Finland's Arctic strategy in 2013, which also emphasizes Arctic expertise. Both national and international actions must be based on a comprehensive understanding of the situation in the Arctic, its causes and consequences. The Arctic is a space shared by many countries. In order to jointly manage this vast area, with its various challenges and opportunities, many forms of international collaboration have been established. Only by effectively applying information and engaging stakeholders from all backgrounds and levels - local, regional and global - can one fully comprehend the complexity of the challenges taking place in the Arctic and create a roadmap for the sustainable development in the region.

Finland has been active in promoting Arctic cooperation since its inception. At the end of the Cold War, a quarter of a century ago, this changed the geopolitical landscape and offered completely new opportunities for cooperation. Finland led the way in seizing this new opportunity. In 1989, Finland took the initiative for organized cooperation among the eight Arctic countries for the protection of the Arctic environment. This initiative led to the historic Ministerial Conference in Rovaniemi in 1991 which started
a continuous collaboration that was called at the time "Rovaniemi Process". This was the first step towards establishing the Arctic Council.

Finland was also instrumental in launching the Northern Dimension of the European Union and for the agreement in 2006 to turn it into a joint policy between the European Union, the Russian Federation, Norway and Iceland. The Northern Dimension provides a framework to promote dialogue and cooperation in several sectors, also in the field of research.

Finland currently holds the chairmanship of the Barents Euro-Arctic Council. In 2017 we will again take the chair in the Arctic Council. Finland's active role in the regional cooperation also gives us many opportunities to strengthen common research activities in the Arctic.

The importance of Arctic research cooperation has also been recognized in the European Union. Last November I attended a seminar in Brussels where the central message was that we need to combine scientific understanding with Arctic stakeholders’ in-depth knowledge and experience in order to properly address the challenges the Arctic will face. Incidentally, my calendar is almost half-full of various Arctic seminars. Tomorrow in Brussels in Greenpeace seminar. Next week again in Helsinki.

With its extensive Arctic expertise, Finland has a great deal to offer to Arctic cooperation. Finland has several biological research stations in Lapland studying Arctic ecology. The Arctic Centre, an institute affiliated to the University of Lapland in Rovaniemi,
carries out interdisciplinary research on the effects of global changes and on the consequences resulting from the fact that man has disturbed the natural balance of Arctic nature and Arctic societies. The University of Oulu is a center for Arctic medical sciences. Arctic-related issues can be found also in the teaching and research programs of many other institutions of higher education in Finland.

As mentioned, Finland will take its turn in chairing the Arctic Council after the United States in 2017-19. Addressing the impacts of climate change, protecting land areas and the marine environment in the Arctic and working for sustainable development will certainly remain top priorities for the Arctic Council during our chairmanship.

One of the most important tasks of the Arctic Council is to monitor and assess the state of the environment in the Arctic region and to alert to any changes. Arctic Council programs are based on solid research and carried out in close interaction with the global scientific community. This cooperation is needed more than ever to cope with the challenges the rapid changes expected in the region will pose in the coming years and decades. Currently, an Arctic Council Task force is discussing an agreement on scientific cooperation among the Arctic countries. All of these countries do not see a pressing need for such an agreement. Finland certainly does not oppose facilitating scientific cooperation in the Arctic region through an agreement or a memorandum of understanding, but we are aware that significant Arctic research is carried out also in other countries, and indeed through global networks.
Ladies and Gentlemen,

The relationship between science and foreign policy is important but far from straightforward. On the one hand science has a central role in informing foreign policy objectives. Evidence-based decision-making is the order of the day, and obviously rightly so. On the other hand, science alone cannot provide us with all the solutions to the problems we face – joint policies still require decision-making and the will to implement these decisions. What is more, science only rarely, if at all, can point towards the objectives and final goals that we should pursue: these stem, as they should, from our values and belief systems. I believe that sustainable development is the common nominator for all approaches.

The Royal Society and the American Association for the Advancement of Science (AAAS) have been actively participating in the discussion considering science and foreign policy. In a report published 2010 they suggested that there are three dimensions of science diplomacy:

Firstly, (1) *science in diplomacy* meaning informing foreign policy objectives with scientific advice. Secondly, (2) *diplomacy for science* refers to facilitating science cooperation. Thirdly, using science cooperation in order to improve international relations between countries is called (3) *science for diplomacy*. I will briefly touch upon all of these facets in turn.
(1) There are encouraging examples of how scientific work can influence international policies and cooperation. The report "Impacts of a Warming Arctic" by the Arctic Climate Impact Assessment which was published in 2004, was a game changer in many ways and started a process that led to the establishment of the Arctic Council's Task Force for Action on Black Carbon and Methane in 2013. The Arctic Council and the non-governmental International Arctic Science Committee guided the study, which had three hundred scientists participated in it over a span of three years in the beginning of Millennium. A recent example of the Arctic Council's close science collaboration is the Arctic Futures initiative project, which is based on the 2013 seminar jointly organized by the Finnish Prime Minister's Office, the Academy of Finland and the International Institute for Applied Systems Analysis (IIASA). Aiming to enhance the interdisciplinary activities at the science-policy interface, the central theme in the research initiative is the usability of the Arctic research results in decision making.

Science can potentially open up new discussions, address problems and finally lead to new international initiatives. However, one should keep in mind that science can only flourish when it is independent. Securing scientific freedom and the independence of research is always necessary to ensure its quality. All kinds of manipulation of the process through which science concludes its decisions and recommendations are strongly to be avoided. Independence is a fundamental character of science and a precondition for scientific success. One has to be brave enough to study things that cannot be predicted. Thus scientific integrity should be emphasized every time when scientific work is being
funded or taken into account in policy and decision making by the public and state actors.

Keeping the scientists' integrity in mind, improvement is still needed to make scientific analysis as well as policymaking and strategic foreign policy planning match in a best possible way. Let me take an example of climate change research in relation to security policy. As we know, climate change is increasingly also seen as a security issue. This is indicated in a number of studies published lately. However, most of the studies dealing with these security threats in different sectors of society leave the in-depth analysis of governance tools for tackling the security problems with too little consideration. In addition to identifying the possible security threats caused by climate change, foreign policy making also requires concrete guidelines for preventive measures to be taken. The existing studies considering climate change as a security policy question still leave many of these questions open.

All actors engaged in the Arctic region need to have the capacity to evaluate and manage the risks and potential outcomes of their activities. This cannot be achieved without interdisciplinary scientific measures. Yet, too often, the links between the scientific community and foreign policy makers are too weak. With a constructive spirit on both sides, I believe that further bridges between these two can and need to be built.

(2) Tackling climate change is a good example of a global challenge where policymaking sorely needs the support from scientists. Quite often, however, science also needs support from policymakers. It is possible, and desirable, to advance science by
diplomatic means. Facilitating international and interdisciplinary scientific discussion belongs to the priorities of Finnish foreign policy. In order to enhance international scientific cooperation in Arctic issues Finland has been actively working for the establishment of the EU Arctic Information Centre in Rovaniemi.

(3) The third interpretation of science diplomacy implies that international scientific collaboration can strengthen diplomatic relations between nations. Indeed, one way to operate with other countries is to operate in scientific terms. Rationality, transparency and universality are known as the universal values of science. These values can also serve as a good foundation for international governance and in creating mutual trust among nations.

Frances Colón, Deputy Science and Technology Adviser to the US Secretary of State, has suggested that researchers sometimes are like "mini diplomats" when solving problems with their international colleagues. During her visit to the University of Helsinki last autumn, Colón reminded that despite the two countries' tense relations, American and Cuban marine biologists have been working in close collaboration to improve the condition of the coral reef in the area. And perhaps it was due to their efforts that we have an opening in US-Cuban relations.

Another good example of science sometimes serving diplomacy is education: young researchers and students who move abroad to pursue studies often maintain close ties with their home country. This has the potential to promote intercultural understanding. Therefore, we should not underestimate the role scientists can play in enhancing diplomatic relations.
4. **Closing remarks**

The French 19th century scientist, chemist and microbiologist Louis Pasteur argued that "*science knows no country, because knowledge belongs to humanity, and is the torch which illuminates the world*". In other words, science doesn't take national borders into account.

As we all know, dealing with Arctic issues means dealing with them on a global scale. It has been said that what happens in the Arctic doesn't stay in the Arctic. Both Arctic matters and scientific research are strongly related to foreign policy which makes the concept of science diplomacy very appropriate for this discussion.

There is a long history of scientists supporting decision making. Therefore, utilizing science in foreign policy making is not a completely new innovation. However, I would still like to underline the central role of scientific research and cooperation when dealing in Arctic issues. Broad-based access to and transparency of Arctic knowledge are of key importance. This need is further emphasized by the rapid transition that the Arctic region is currently undergoing, accompanied by a growing international interest. It is vital for all of us to understand what the transition in the Arctic is all about.

There is a growing need to deepen the dialogue between national governments, international actors and the international scientific community. Science diplomacy can help us achieve this goal: providing crucial information for decision makers, strengthening
international scientific collaboration and helping scientists in their work as "mini diplomats".

I am certain that this discussion will continue in various Arctic and foreign policy in the future.

Thank you.