



**Bilateral Coordination of the Enhancement and
Development of S&T Partnerships between the
European Union and the United States of America**

Report of the BILAT USA 2.0 Conference
“New Frontiers in Science Diplomacy

–

Opportunities for U.S. –EU Cooperation



Table of Content

Background of the Conference.....	3
Science Diplomacy Conference Sessions.....	4
Opening	4
Key Note Speeches	4
Key Note Speech I – Peter Agre.....	5
Key Note Speech II – David O’Sullivan.....	6
Roundtable Discussion I: U.S. Cooperation with Europe on Energy Security; the Role of Science Diplomacy for Transatlantic Energy and Climate Change Actions	10
Roundtable Discussion II: Advancing Health Science Diplomacy in the context of Global Health Challenges	15
Roundtable Discussion III: New Frontiers in U.S.-EU Science Diplomacy - Where is common ground, where are differences, what potential for further cooperation?	21
Logistical information.....	26
Recommendations & key statements	27
Annex I – Conference Agenda	29
Annex II – Background Document for Session Participants / Speakers	33
Annex III – Press Release of the event for Dissemination.....	39

Background of the Conference

On request of the EC, BILAT USA 2.0 organized a conference on the subject of "Science Diplomacy" in Washington D.C. The subject was carefully selected and reflects one of the main thematic foci of EU Commissioner for Research and Innovation, Carlos Moedas. A conference on the subject matter is in particular interesting when it is looked at from a joint EU-U.S. angle and when participants / speakers from both sides jointly discuss the topic.

The conference gathered major EU and U.S. stakeholders, representatives of think tanks as well as active researchers and innovators to discuss, among others, the following key questions:

- How to advance
 - ***science in diplomacy*** – in forming foreign policy objectives with scientific advice
 - ***diplomacy for science*** – facilitating international science cooperation
 - ***science for diplomacy***¹ – using science cooperation to improve international relations between countries
- Where can the EU and the U.S. learn from each other's approaches with regard to Science Diplomacy? Where are potentials for cooperation?
- Do we have a common, transatlantic understanding of Science Diplomacy?
- Where are differences and cooperation opportunities when it comes to, in particular, Energy / Climate Change and Health Science Diplomacy?
- How similar / different are the motivations and approaches of different countries / regions – here in particular the EU and U.S. – in science diplomacy? What are some of the key differences?
- How can civil society advance science diplomacy?

The conference was organized by the [BILAT USA 2.0](#) project (FP7). Key partners in organizing the conference were CTR, FFG, inno TSD, NCURA, DMI and DLR.

The current report aims to summarize the main results from the conference and gives major recommendations to policy-makers. The roundtable session summaries were sent to all panelists for final edits and checks.

The conference sessions can be viewed again via the following links: [agenda](#); [Part 1](#); [Part 2](#); [Part 3](#); [Part 4](#); and [Part 5](#)

¹ Three terms coined in a joint conference of Royal Society and AAAS, "New frontiers in Science Diplomacy – Navigating the changing balance of power", January 2010, Royal Society, AAAS.

Science Diplomacy Conference Sessions

Opening

The Science Diplomacy conference was organized by the EU funded BILAT USA 2.0 (FP7) project on 28 September 2015 in Washington D.C. Dan Hamilton, Executive Director of SAIS Center for Transatlantic Relations opened the event in the facilities of the Kenney Auditorium at the Johns Hopkins University. Dan Hamilton welcomed speakers and participants and clarified the objectives of the conference, which can be summarized to the determination in what ways Science Diplomacy is done and what difficulties can be found when performing it. He made clear that within the discussions, the three terms in which Science Diplomacy can happen should be distinguished, taking into account the “science in diplomacy” (informing foreign policy objectives with scientific advice), “diplomacy for science” (facilitating international science cooperation), and “science for diplomacy” (using science cooperation to improve international relations between countries). Further, he outlined that although the conference was set up within the EU-U.S. frame, examples from other countries could and should be referred to.

Olaf Heilmayer, Coordinator of the BILAT USA 2.0 project and Head of Unit of Multilateral Cooperation at DLR-PT, Germany, also welcomed the speakers and participants and stressed the importance of Science Diplomacy in today’s times. Particularly in times of crises, Science Diplomacy offers an approach to keep the communication between two nations going.

Key Note Speeches

Two key-note speakers of high reputation and relevance to the topic of Science Diplomacy started the conference day. The U.S. side was represented by Peter Agre, Johns Hopkins Bloomberg School, Nobel Laureate and former President of AAAS. David O’Sullivan, Ambassador of the European Union to the United States of America provided EU views on the topic.



Figure 1: From left to right, keynote speakers David O'Sullivan and Peter Agre with Dan Hamilton (moderator)

The Key Note Speakers were not only selected due to their nationality – giving the frame of the EU-U.S. focus of the conference – but they also demonstrated the two sides of science diplomacy: Peter Agre – as scientists – has performed Science Diplomacy in his various projects and during travels to crisis-ridden countries and regions building up trustful relationships - thus performing “science for Diplomacy”. On the other hand, David O’Sullivan – as a chief diplomat – illustrated the diplomatic side stressing the importance of receiving evidence-based input from researchers and scientists for political decision-making (“Science in diplomacy”).

Key Note Speech I – Peter Agre

Peter Agre focused his speech on the third category: “Science for diplomacy” – scientific work amongst nations that brings countries closer together. In most cases this involved a lot of personal contacts. Peter Agre started out with an interesting comparison. He presented a slide with the world views on the USA. People in Arab countries like Marocco, Jordan, Saudi Arabia or others were asked about their perception of the USA. When it came to the USA as a whole, they generally had an *unfavorable* view of the USA, however, when it came to U.S. Science and Technology the picture was the other way around and they rated the U.S. as very favorable with almost 90% positive impressions. He concluded that there is something about Science Diplomacy that works well and that can cross borders extensively.



Caption Figure2: Peter Agre - Key note speech I

He further illustrated his practical scientific work with several case studies, among them Zambia, the Democratic Republic of Congo (DRC), Cuba and the Democratic People’s Republic of Korea (DPRK):

- In **Zambia** e.g. the important factor of the collaboration between the Malaria Institute at Johns Hopkins and the national Malaria Control Centers is that they work side-by-side – and on “eye level”. The U.S. scientists are not to be seen as mercenaries but rather as cooperators with local scientists in the country. Results that have been achieved through an active cooperation are very good, e.g. the hospitalization of children under five years has dropped immensely due to a much better treatment.
- In the **Democratic Republic of Congo (DRC)** he has encountered a very difficult situation. DRC could have a tremendous wealth, however, wealth is spread unequally and DRC has one of the lowest GDPs in the world. Peter Agre mentioned that sometimes Science Diplomacy approaches are great and fertile, other times they can be frustrating. In DRC e.g. a lot of the build infrastructure is declining, the trains are not running and this results in problems delivering medicine and medication treatment to the countryside.
- There have hardly been investments in the **Cuban** infrastructure however there is a very vibrant scientific community in Cuba. A vaccine and biotechnology center can be found in Havana. After the revolution, Cuba decided to prioritize and focus on prevention of disease rather than the establishment of new molecular techniques. This was a smart decision because they thus eradicated Malaria from Cuba. It was Fidel Castro’s son, a physicist, who invited staff of the Johns Hopkins University and Vaughn Turekian, AAAS, over to Cuba to get involved in certain scientific collaborations. Despite the differences still between the USA and Cuba, science cooperation works which has been proven by their joint work.
- Another large challenge was the **Democratic People’s Republic of Korea (DPRK)**. Peter Agre was part of a delegation that visited DPRK some time ago. Although U.S.-DPRK relations are difficult, he was part of a U.S. delegation visit to North Korea and some of their scientific institutions. “North Koreans are hungry for science” – they talked about life science, agricultural sciences etc. but not about “more difficult sciences”. Peter Agre also gave the example of the Pyongyang University of Science and Technology, the only non-governmental school engaged in research and that has the aim to further develop the partnership between North Korea and the USA. In order to avoid too many conflicts Peter said “So, all we talk about is science – and that is just fine!”

Peter Agre concluded with stating that his international experiences in his career are among the most precious ones – scientists making friendships across borders. The reputable scientist proved that **even in times of political crises and stalemate, the research cooperation offers a way of dialogue and “staying in touch”**.

Key Note Speech II – David O’Sullivan

Ambassador David O’Sullivan started out with the fact that the world currently faces various simultaneous global challenges that have the potential to make or break peace and security. Finding solutions to migration, climate change, energy and food security, resource efficiency or health pandemics is imperative to a society’s capacity. All these have a strong scientific dimension and require political decisions and joint international responses timely. Combining what is known through

science with what is pursued through diplomacy can be the key to guide leaders and unlock complex political decisions.

David O’Sullivan acknowledged that the reason for this is that **scientists cooperate across borders**, even when there is little or no political dialogue between their respective governments. Particularly in stalemate situations or in sensitive bilateral and multilateral engagement where few other mechanisms are feasible, Science Diplomacy can provide additional channels of communication and help build trust. Further, **solid scientific advice and technical information is increasingly indispensable for anticipating needs and events**, and for making forward-looking, evidence-based policy decisions. The diplomatic community is already active furthering international agreements on scientific collaboration aimed at co-development of research infrastructures and the removal of regulatory and other barriers (e.g. visas), but it is essential to be proactive in mainstreaming science into other relevant areas of international relations.



Figure3: David O'Sullivan - Key note speech II

The EU and the U.S. are global leaders in science diplomacy. This status confers also a **joint responsibility** to raise its international profile and importance in supporting foreign policy objectives for climate change, peace, security, humanitarian aid and economic development. The ambassador underlined that the EU and U.S. scientific communities must join forces in tackling crises such as migration. In this context, it is essential to commonly tackle the roots of such migration e.g. cooperation with Diasporas and highly qualified migrants should be strengthened to promote brain gain and to offset brain drain. This can be done by leveraging expatriate talents around start-up

projects in the host country and the country of origin. Such projects can present a big opportunity to build transnational innovation and mutually beneficial research, scientific and business networks.

Several specific themes providing an EU perspective were presented by David O'Sullivan like among others:

I. Peace and Security through the Language of Science

Research and science played an important role in the unification of Europe after World War II through initiatives such as the establishment of e.g. the European Organization for Nuclear Research (CERN). CERN was set up after WWII to bring together scientists from former enemy countries in Europe. Twelve European countries chose to pursue a common path and created the largest research facility in the field of particle physics. CERN illustrates the importance of science and international research institutions in uniting nations to pursue a single noble goal. It has become a model for how to combine scientific excellence with Science Diplomacy. International research infrastructures are key visible and lasting examples for instruments of Science Diplomacy. Also, scientific cooperation can have a particular added value in highly religious or ideological societies, as it provides a non-ideological and non-religious framework for exchange of ideas between people, regardless of cultural, national or religious backgrounds.

II. Global environmental Challenges:

In the Intergovernmental Panel on Climate Change, IPCC, for example, the EU supports increased involvement of developing countries so that they have stronger ownership of the climate negotiations which IPCC performs. The EU itself strongly relies on scientific evidence assessed by IPCC in its climate change negotiations.

Another illustrative example is the Galway Statement on Atlantic Ocean Cooperation that was signed in 2013 between the U.S., Canada and the EU. This not only aims to provide a more complete understanding of how to protect the oceans but also engages international teams of researchers, whose combined efforts will produce better science for dialogue and conservation.

III. Global Health Challenges

The EU strongly supports global health research. It is a prime example of Science Diplomacy contributing to the EU's foreign affairs, security, development cooperation, humanitarian aid policy and international commitments such as the health-related Millennium Development Goals and the EU and the U.S. are the largest funders of global health research.

The Ebola outbreak in Western Africa has demonstrated the part that research and innovation plays in devising responses to health crises and emergencies. All relevant stakeholders - WHO, international and national regulatory authorities, public and private funders, researchers, academic institutions, pharmaceutical industry, NGOs and local populations - came together to urgently address the ominous research gaps. With increasing international collaborations and partnerships worldwide, the EU seeks to address global health challenges more effectively through multi-funder initiatives, such as the European and Developing Countries Clinical Trials Partnership, or the Global Research Collaboration for Infectious Disease Preparedness.

Concluding, the Ambassador stressed:

- **Science as an important tool in diplomatic relations and strategies** (“soft power” tool)
- Increasing **need for 'science diplomats' worldwide** and for more effective platforms, mechanisms and spaces for dialogue between policy-makers, academics and researchers working on foreign policy to identify projects and processes
- The EU and the U.S. need to engage more in science diplomacy and **ensure that science and technology and international collaboration further support external policy objectives** for climate change, peace, security, humanitarian aid and economic development.

Roundtable Discussion I: U.S. Cooperation with Europe on Energy Security; the Role of Science Diplomacy for Transatlantic Energy and Climate Change Actions

Panelists:

- **Robert F. Ichord, Jr.**, Deputy Assistant Secretary, Bureau of Energy Resources
- **Micah Lowenthal**, Director of the Committee on International Security and Arms Control of the National Academy of Sciences
- **Hans Otto Pörtner**, IPCC/AWI, AWI biologist Prof. Dr. Hans-Otto Pörtner, coordinating lead author for IPCC
- **Lars Nilsson**, Professor of Energy and Environmental Studies, Lund University, Sweden

Moderator: Tori Hill, Numeritics

Rapporteur: Berna Windischbaur, Austrian Research Promotion Agency (FFG)

The first roundtable session was dedicated to discussions on **EU-U.S. cooperation on Energy Security; the Role of Science Diplomacy for Transatlantic Energy and Climate Change Actions**. Topics regarding energy and climate change are critically important for the world and how we address these challenges will impact future generations.

Science Diplomacy creates a way to bridge between science and society. Scientists are responsible for communicating science to society and creating positive narratives for constructive solutions to global challenges.

10

Lars Nilsson introduced the work of IPCC (Intergovernmental Panel on Climate Change²) on climate change. IPCC is a leading intergovernmental scientific body but at the same time follows a diplomatic mission, in which 195 countries participate. It was formed in 1988 in order to establish a scientific consensus on climate change. It involves thousands of scientists. As it has been recognized at an early stage that Climate Change has a huge impact on society and international relations, it tries to be policy-relevant and functions as an international case for how science and policy can interact in responding to global challenges. There are 3 working groups, namely:

- WG1: “The Physical Science Basis of Climate Change”
- WG2: “Climate Change Impacts, Adaptation and Vulnerability”
- WG3: “Mitigation of Climate Change”

After this introduction **Hans Otto Pörtner** joined the discussion by emphasizing that climate change is really about the motivation to find the right balance between adaptation and mitigation. We are living in a changing world and most of the changes occur due to human activity; a fact that cannot be ignored. This change exposes people to increasing risks in various issues, such as sea level rise, global warming, ocean acidification and the oceans losing oxygen. People have to be aware of the scope of these changes, their impacts and the limits to the capacity of natural and human systems to adapt.

² <http://www.ipcc.ch/index.htm>

IPCC is an important body in terms of identifying and discussing the long term global goals, the climate targets and guardrails that should not be passed. An early political indicator has actually been the two-degree-target. We need to watch these guardrails closely and make sure that we remain significantly below the two-degree limit.

Recent IPCC 5th Assessment report confirmed this strategy and emphasized even not to pass the 1.5-degree limit. These long term global goals are big challenges to societies around the world.

The major message that IPCC sent to the world is that there is still the chance to make the right decisions now to build a better world. Old methods of energy generation such as fossil fuels should be banned and decision-makers should be motivated to push innovation into the right direction. This is a very positive presumption in order to open up a positive perspective in the future.



Figure 4: Panelists of Energy Session: Pörtner, Lowenthal, Ichord, and Nilsson (from left)

Lars Nilsson added that two-degree target is set by scientist and accepted by policy-makers. Meanwhile it went back to scientists to examine the implications of the two-degree target for the mitigation efforts. The target really involves value judgments and these value judgments are up to the policy-makers and society. Science cannot make the decisions on behalf of society. It can only provide the knowledge base for various options to enable the public to understand why and how these scientific results will impact their life and enable policy-makers to make the right decisions. Therefore, a sustainable dialogue between scientists, policy-makers and the wider public should be fostered.

In summary, science and technology are an integral part of daily life. Therefore communicating science to a non-scientific public is very important and it requires collaboration. Regarding the climate change issues, people must understand the guard rails.

Robert F. Ichord indicated that the recent visit of Pope Francis to the USA and his reference to climate change even brought the religious perspective and science together, as he said that climate change will have severe impacts on especially poor regions, hence poor people in the world. This incidental speech is very crucial because Pope Francis brought the climate change impacts to average peoples' attention and it can be seen as a contribution to climate change discussions on the way to a stronger commitment during the conference on Climate Change in Paris end of 2015. However, the road from Paris is more challenging in terms of actions and decisions that countries need to take for

implementing climate commitments and climate change challenges in emerging markets are severe due to lack of political forces.

The severe consequences of climate change are expected to happen in 10-20 years from now which may have a negative impact on the political decision making process. However, action needs to start now in order to prevent or at least eliminate some of the impacts.

When there is a lack of political power and results at the national level, other actors such as local governments take initiatives. The International Council of Local Environment Initiatives (**ICLEI**) is an organization of local governments and associations aiming to build local government capacity worldwide in order to solve local and global environmental problems³. 1000 cities work together, set targets and by that try to be more progressive than international negotiations.

In addition to IPCC-like instruments where scientists and diplomats come together, establishing dialogues between non-governmental / scientific initiatives in the international arena supports constructive policy dialogues.

When scientists who are involved in these collaborations enter political arenas, they bring with them a better understanding of their counterparts' perspectives. A chair of the Russian CISAC later became a key science advisor to President Gorbachev. Bill Perry, the Secretary of Defense in the Clinton Administration was also part of these dialogues. Perry started by putting together the cooperative threat reduction program after the collapse of the Soviet Union. John Holdren, currently the President's Science Advisor, was the chair of the group for ten years. Rose Gottemoeller, the former Undersecretary of State for Arms control and International Security, and Secretary of Defense Ashton Carter were further members.

12

One of the major challenges in communicating science to public and even to politicians is that international scientific reports are usually very technical, very long and very difficult to read and understand by people that are not scientists. Hans Otto Pörtner referred to the **Structured Expert Dialogue**, as a new instrument within the IPCC structure where scientific experts and negotiators are brought together. Scientists extract the essence from the scientific assessments and inform the negotiators about the implications of long term global targets such as the 1.5-degree target.

For example, Working Group 2 has 30 chapters and around 300 scientists are working on these chapters. In summary, there are 1600 pages compiled per WG (considering that there are three working groups this means in total 5000 pages). In a distillation process, based on key messages a first technical summary is compiled. Based on this technical summary, a 30-35 pages summary for policy-makers is prepared which is brought into the negotiation process. These summary reports are negotiated line by line, word by word. It is expected to provide insights for policy-makers to build on their policies.

The Structured Expert Dialogue can be taken as a good example, an instrument for bridging between science and policy-makers.

However there are some other challenges. Lars Nilsson emphasized the following factors that are very difficult to deal with in these Expert groups:

³ ICLEI <http://www.iclei.org/>

- Language fairness, equity and justice
- Developing countries feel that they should have different environmental targets than developed countries for a host of reasons. Decisions on what metrics to use and what environmental targets to require are difficult, and discussions can be polarizing

For more information on how these factors really frustrate participants can be followed by Robert Stavins's (Harvard) blog.

More and more countries in the world face various challenges of Climate Change such as hurricanes, droughts, desertification, etc. Science of global climate change has advanced but there is social, economic and environmental impact as a result of climate change.

The debate is moving from how to define the problem towards what are the scientific, technological implications of different options in terms of how it will affect people's lives and linked to that, what are the financial resources that are necessary to be able to deal with these questions.

Following this remark of Robert Ichord, Hans Otto Pörtner added that **we need to have a better understanding of challenges at the regional level. When it comes to regional implications uncertainties are rising.** Regional views and scenarios are still in the process of improvement. The next IPCC assessment will take this aspect into consideration. Therefore, data accumulation and sharing on regional implications of climate change is of utmost importance.

Economy is an important dimension of the transformation to low carbon societies, using greener energy resources. In this respect Robert Ichord pointed out that financing and mobilizing coalitions between government, private sector and NGOs are recently heavily discussed in the U.S.

For example the sustainable energy committee indicates some financing options in transition to a green economy. They try to develop estimates for what it would take to meet the goals of 2030 in these areas and come up with innovative financing mechanisms, green bonds, how to leverage and work with grants and loans. However, one of the major issues is that a very little fraction in global capital markets goes into emerging markets, which is also called "high risk markets".

Therefore, the role of these emerging countries in enabling the environments for investments, availability of loans and guarantees to reduce the risk on investments, aggregating portfolio of projects or institutional programs to mobilize public-private partnerships is very important.

Financing options need to be developed that are dealing with renewable energy transformation. Other methods would be to get away from direct investments to fossil fuel, using public procurement, direct / indirect subsidies, and infrastructures to support market transformation towards renewable energy. For example some pension funds in UK invest no more in fossil fuel companies.

Thanks to the early initiatives in Europe bearing the major R&D costs of early developments of the renewable energy technologies, there are already many new technologies on this field (compared to 3-4 years ago) which may help the governments to make long term investment decisions. For example, wind and solar became very competitive with fossil fuels in many areas which led investors to diversify their utility investments. More and more banks are interested in these investments since they can make better predictions about the future of the renewable energy sector compared to the future of oil and gas prices, even if the upfront capital costs of renewable energy are higher.

In addition to local initiatives and strategies to deal with climate change as indicated before, consumers can also have an impact on the market. There are examples in the world that consumers can make a change towards green economy. The trends show that consumers worldwide intend to purchase more environmentally friendly products which again forces companies to produce more of them.

Non OECD countries are still in the urbanization process. This is going to create enormous pressure on climate change but at the same time creates enormous opportunities for technology development.

The most challenging sector is the basic industry (steel, coal, plastic). The transformation of these sectors requires international collaboration.

Performing a transformation to a low carbon society does not mean to become a down-turner for the country's performance. Regulations, policy initiatives will also support the transformation of social norms within the society. In the future, it will become very natural not using the fossil fuel regardless of its price. It is also about improving the quality of our lives and our urban environments.

The following research areas are indicated as possible areas of EU-U.S. research collaboration in the field of energy and environment:

- **Arctic** is the key area that U.S. and Europe should work together
- **Smart grid technology** on climate change
- **Nuclear energy** is still in place in U.S. and in Europe. However, the plants are getting old and handling these aging nuclear plants is an important issue to deal with
- **Combustion inefficiencies**, high temperature materials
- **Biofuels catalytics**, increasing biofuel production

Scientists have the responsibility to answer to societal needs and guide policy-makers with evidence-based knowledge. It is not too late; there are solutions available. Driving forces of this change process are technological development, commercial benefit, public awareness and demand, regulations and policy support.

Roundtable Discussion II: Advancing Health Science Diplomacy in the context of Global Health Challenges

Panelists:

- **Tom Inglesby**, CEO of the Center for Health Security at the University Pittsburgh Medical Center, Baltimore
- **Jeremy Bray**, policy advisor health research at DG R&I, European Commission
- **Hannah Akuffo**, Senior Research Advisor, Lead specialist Research Cooperation at the Swedish International Development Agency

Moderator: Riitta Mustonen, Director of Development, University of Turku, Finland

Rapporteur: Svetlana Klessova, Director, inno TSD

Riitta Mustonen, in her opening presentation, reminded how timely the topic of the session was and provided some background on the history of Health Science Diplomacy: from the foundation of modern international science diplomacy about 160 years ago with the First Sanitary Conference in Paris (1851) where a first International Sanitary convention was signed and marked the beginning of the establishment of a multilateral and multilevel system to strengthen international efforts in the field of health and the treatment of diseases, towards the scientific definition of Global Health Diplomacy given by Adams V., Novotny TE. and Leslie H. in their work “Global Health Diplomacy” in 2008, described as a “*political activity that meets the dual goal of improving public health and strengthening the relations among the nation states*”. Riitta Mustonen also mentioned two organisations that hold an important role in emphasizing the role of science in diplomacy: the **American Association for the Advancement of Science (AAAS)** established in 2008 and its Center for Science Diplomacy, and the **Graduate Institute of International Studies in Geneva** for its Global Health Programme, that she invited the audience to read the Symposium report “Health Diplomacy meets Science Diplomacy” (2013).

Each speaker was then invited to provide a short statement to express a personal view or raise important questions and suggestions on one or two of the key questions of the session:

- What are the elements of health diplomacy?
- What are the ultimate goals of EU-U.S. and global health science diplomacy?
- What are best-practice examples of health science diplomacy?
- What and where are conflicting issues? (“Science **for** diplomacy”)
- Where are different opinions / approaches regarding the field on both sides?
- Is it important to have joint U.S.-EU global approaches to health science diplomacy? Why?
- What is the role of scientists / policy-makers? (“Science **in** diplomacy”);

Riitta Mustonen also brought her own additional questions to the debate:

- Why is health so important in the context of international science diplomacy?
- Who are the optimal targets to promote science diplomacy and get the highest impact?
- From a scientific point of view, how to deal with uncertainty, which evidence should we use in health science diplomacy?

- In the current context that brings exactions on the population and a crisis of migration, do we need to think international Health diplomacy from new perspectives also?

Following the introduction, **Tom Inglesby, CEO of the Center for Health Security at the University Pittsburgh Medical Center, Baltimore**, gave a presentation with examples of his own professional interest in health science diplomacy, promoting dialogue on issues such as epidemic responses, diseases surveillance, bio-safety and biosecurity related activities, in the USA and around the world. He covered four key questions:

- **What is the value of science and health diplomacy?** It is a way of building trust and friendship sometimes in places where both is missing; science can be a way of solving problems below the level of political disagreements. Two supplementary aspects should be taken into account: the potential role of scientists in helping move forward international cooperation as scientists often have common professional values and shared scientific goals; and the importance of a shared scientific language, a language that is common to scientists but that sometimes political leaders do not speak very well.
- **Should civil society be engaged in international science diplomacy?** Yes, especially as universities and NGOs have “more time and freedom”, including the independence to spot issues and devise the structures to solve problems.
- **Where do EU and U.S. need to work together, and why?** Four priority areas were suggested:
 - **The Global Health Security Agenda**, a partnership that started last year, representing cooperation between the USA and 40 other countries and the WHO and the World Organization for Animal Health. This initiative launched an effort to improve global capacity to prevent attack and respond to major infectious diseases, in complement to existing WHO efforts and international health regulations and was launched before Ebola was identified as a serious threat. The USA announced an investment of a billion dollars at the summer 2015 for the building of Global health capacities, followed by other countries, starting a flexible and open process with a yearly multilateral commitment meeting in rotating capitals.
 - **Recommitment and common efforts towards the strengthening of the WHO** is crucial. In today’s model, only 25% of WHO budget comes from standing assessed contributions, with the rest being voluntary contributions from countries. There is no core fund for emergency response. Tom Inglesby advocated for a political mechanism implemented to reverse the erosion of the WHO capacities. Some initiatives are beginning to happen notably following the Ebola response; also with the support of the United Nations Secretary General Ban Ki-Moon. The WHO should not be mobilized only in the cases of emergency responds, but should be seen as a strong global asset in fighting emerging infectious diseases on a routine basis.
 - The necessity to reflect on **how the global community should approach research that is considered particularly dangerous – but perhaps particularly beneficial - to the global community?** What should be the expectations between countries when pursuing this kind of work? Tom Inglesby gave the example of the work in the last couple of years that while intended to improve preparedness for influenza pandemic, required the engineering of highly lethal influenza to become transmissible. There are no international rules to guide whether this work should proceed. The EU and

the U.S. should work together toward developing a common approach on such issues.

- **Governments' investment in basic science and in advanced development of new medicals and vaccines.** Tom Inglesby recalled the U.S. government's efforts since the years 2000 to work towards a system allowing different parts of the medicine and vaccine development community to work more effectively together (basic research, advanced development, regulators, and the biopharma industry). In the U.S. experience it became clear that a dedicated organisation would be needed to work on translating basic science into medicines and vaccines when the private sector is not likely to do it on its own (examples of Ebola, Influenza, SARS, and Chikungunya). A dedicated regulatory approach was also a key development here. Tom encouraged the EU and the U.S. to explore this model and to see what they might learn from each other's experience on these issues.

Hannah Akuffo, Senior Research Advisor and Lead specialist Research Cooperation at the Swedish International Development Agency (SIDA) presented challenges, lessons learnt and best practices through the presentation of her own organization under a "development cooperation" perspective as well as her experience in large consortia on Health projects, such as the **European and Developing Countries Clinical Trials Partnership (EDCTP)** initiative. The Swedish policy started about 40 years ago when the Parliament decided to use the development funding to better support research cooperation. SIDA is thus particularly engaged through its activities in the reducing of poverty and the improving of the situation of poor people. Hannah Akuffo emphasized how important it was that rather having a situation "where research is done by others for others", to have "research done in and by people in low-income countries", to enable them to work on issues that are relevant for them, and to get the necessary skills.

17

In development cooperation, research cooperation is certainly a tool for science diplomacy, and is important for the culture of enquiry and the use of evidence. Different conceptions of "ownership" in development cooperation are possible, but the outcomes of cooperation are more likely to be sustainable when local institutions own the process and the research they are doing. Furthermore, capacity building in low-income countries is important to ensure participation in the decision process in the development of international research agendas. Other questions related to international science cooperation include the following:

- Who drives the research being advocated internationally?
- Who sets the international agenda?
- Who sits at the table when international decisions are being made regarding science?
- How can funders of global health research better cooperate in order to address the myriad of global health problems that exist today?

Hannah Akuffo ended her statement with a focus on the EDCTP, going through the long history of this international partnership that started as a unique programme under the European Union's 6th Framework Programme, and was first called the European clinical trials programme (ECTP) before the African context was brought into its name (EDCTP). The African States were indeed step by step invited to take part in the main decision making organ, first as observers, and now as joint partners, with an equal number of African and European countries represented and similar decision making

rights. She advocated for opening the EDCTP partnership to a broader cooperation, including with the United States of America. EDCTP shows that programmes need time to become mature in their activities but also in their governance, and that the process in itself is sometimes painful and needs patience and perseverance but is interesting and valuable in terms of learning and potentially bodes well for a long-term endeavor.

Jeremy Bray, policy advisor for health research at DG Research and Innovation, European Commission, represented the view of the European Commission in the debate. He briefly described the health related elements of the **Horizon 2020** programme, the European Union's Framework Programme for Research and Innovation for 2014-2020, which disburses around 1 billion euros annually for a range of R&I activities in health in Europe, and which frequently involve non-European actors. These activities cover the full range of the R&I spectrum and include: collaborative research projects with partners from different countries of the EU but also external partners including from the U.S.; direct and targeted support to individual small businesses; public-public partnerships on areas of common interest to leverage national efforts on common challenges; public-private partnerships with the example of the Innovative Medicines Initiative, a partnership that the EC runs and that brings together the pharmaceutical industry with academia, patient groups and regulators in an open innovation environment; and finally financial guarantees for access to finance. Jeremy reflected that in accession negotiations for new members of the EU, it is usually the chapters which deal with R&I which are the first to be closed, demonstrating that science presents something of an "open door" for preliminary diplomatic efforts, illustrating this by reference to the large participation of non-European entities in Framework Programme health related projects.

Two ongoing initiatives were presented and contrasted by Jeremy as being illustrative of the different approaches which enable effective international co-operation in health R&I: (1) the **EDCTP 2** that was prior to this evoked by Hannah Akuffo which resulted in successes; it is important to continue working on adapted mechanisms notably to ensure other actors can also be brought in the process, in terms of bringing funding, such as for example philanthropic organizations willing to do so; and (2) the **International Rare Diseases Research Consortium (IRDiRC)**, a very large partnership including research organizations from Europe, North America, Asia and Australia, bringing public and private organizations involved in rare disease research together, whom he presented the funding and governance process. He contrasted the detailed framework which underpins the EDCTP2 with the lighter "pay to play" model of the IRDiRC noting that each has its strengths in being adapted to the different kinds of organizations involved and the differing goals of the projects.

Jeremy Bray also referenced the EU's response to the Ebola epidemic, recalling the epidemic response timeline, from July 2014 when the EC launched a first request for FP7 projects to work on Ebola, 8 August 2014 when the WHO declared it as a "Public Health Emergency of international concern" to the mobilization of funding on the EC side from September on, and notably in the context of the IMI Call 2. He concluded that the response to the epidemic may be considered as quick, but the EC and the world still need to put mechanisms in place to respond immediately to such crisis – and that indeed this is in progress with GlopID-R, the **Global Research Collaboration for Infectious Disease Preparedness**.

The main lessons learnt from those initiatives which are of relevance to efforts to further diplomacy through scientific activities in whichever field are: **the need to have the right people around the table**, to have **flexible structures** as there is no blueprint for success and **different challenges require**

different responses (the problem to be solved must dictate the response, rather than science diplomacy being seen as a solution looking for a problem), and the need for **global preparedness to global challenges** whether acute or chronic.



Figure 5: Health Session Panelists: Bray, Akuffo, Inglesby, Mustonen (moderator; from left to right)

After the statements and some one-to-one exchanges with the moderator, the discussion was open and the panel replied to additional questions:

What is the role of different actors, diplomats, scientists, civil society in Health Science Diplomacy, and how to get scientists involved in diplomatic issues, what could be their incentives? How to make scientists better aware that the research they are doing might have more impact through Science Diplomacy?

Tom Inglesby replied that on the U.S. side there is indeed a need to do more from the university side to encourage scientists and health leaders to contribute to the policy development process and diplomatic efforts, **however the problem is that the time spent working with governments is often seen as a distraction from their research work** and not always valued by scientists themselves or their universities. On the role of scientists, in some cases the **languages** around diseases, vaccines, risk factors, and health crisis are not part of the lexicon of senior government officials on either side of the Atlantic, and so scientists can help translate important health goals and concepts into language that makes most sense to political leaders.

Jeremy Bray insisted on **being cautious not to overburden the scientists** with additional responsibility, beyond asking them to communicate about their work in an effective manner, and on the **role of policy-makers to ensure and contribute to building and maintaining an environment where scientists are willing to exchange and bring advice to policy-makers.**

Following the concept of “diplomacy for science”, how can diplomacy support health science and research – setting up funding opportunities for collaborative projects for example, but what about if there would be a need for a larger project, eg. on infrastructures, between the EU and the U.S.?

The panelists agreed on the importance of such challenges, and **insisted on the role of advocacy of Nobel Laureates and eminent scientists to raise the interest of policy-makers on the strong needs**

for action. An example is the setup of the European Research Council that came out of discussions between European scientists and research organizations at a time when no such mechanism in Europe to support basic research on a broad front existed. In some cases, even small groups of people speaking common voices, coming from distinguished scientists and the civil society can have a great impact if they have clear arguments. The role of NGOs in EU and U.S. – working closely with governments - was also considered important to create move.

If we all agree that the ultimate goal of Science Diplomacy is global health and global well-being, are there other elements?

Where possible, the element of education and training of people should be an integral part of the projects, to embed the next generation of people in a strong research environment.

This broad and very dynamic session ended with questions from the audience. An issue of attraction of private funds raised – for example, Germany is currently holding the G7 presidency and **the issue of neglected and poverty related diseases is on the agenda, private funds' attraction is important.** The type and amount of funding that one could mobilize usually depends on the disease and requires different solutions (example: ebola and funds mobilization).

Roundtable Discussion III: New Frontiers in U.S.-EU Science Diplomacy - Where is common ground, where are differences, what potential for further cooperation?

Panelists:

- **Tom C. Wang**, Director for International Relations, Deputy Director, Center for Science Diplomacy, Executive Editor, Science & Diplomacy, AAAS
- **Cathleen Campbell**, President and Chief Executive Officer, CRDF Global
- **Stephen Ezell**, Vice President, Global Innovation Policy at the Information Technology and Innovation Foundation
- **Anne Glover**, University of Aberdeen, former Chief Scientific Advisor to the President of the European Commission
- **Kerstin Eliasson**, former State Secretary at Swedish Ministry of Education, Science and Culture, Science Counsellor at the Office of Science and Technology, Swedish Embassy, Washington DC
- **Minh-Hà Pham**, Counsellor for Science and Technology at the Embassy of France in Washington, D.C.

Moderator: Kathie Olsen, Founder and Managing Director of ScienceWorks

Rapporteur: Jesse Szeto, Senior Manager, Global Operations, NCURA

Kathie Olsen introduced the panelists and posed the question: “What are the future challenges in Science Diplomacy, and what are the areas for the U.S. and the EU to take on together?” Tom Wang made the additional point that Science Diplomacy has been practiced by both the U.S. and the EU, and particularly the latter in its “European project,” but in most cases, **science diplomacy has not been named as such and has been pursued in an ad hoc fashion**. Furthermore, the context has changed in the past few decades. Whereas the U.S. and the EU have previously engaged with other countries’ scientists and researchers by attracting them to their own labs, it is now more accurate to say that science is practiced all around the world and not just through student movement. Despite this global nature of the science community, the *instruments* for funding and evaluating science are still much more national in scope and are thus fragmented. There is a disconnect between the globalized nature of the science community and the fragmented and mainly nationalistic / regional nature of research funding instruments. This, then, would beg the question of **how to make the funding instruments more international in scope**. In light of this context, then, Tom Wang posed the following three questions to the panelists:

- Given the still **nationalistic mechanisms for funding science and research, how can we create more multilateral / global mechanisms** to better reflect the global nature of the science community? Related to this, how can these mechanisms be better attenuated to the “bottom-up” collaborations that occur organically between scientists across national boundaries?
- **Innovation can be seen as a competitive advantage and thus makes cooperation more difficult**. In this context, how can Science Diplomacy continue to flourish?
- How can the **EU and the U.S. work together on the geopolitical difficulties of the day**, e.g., the Ukraine, Russia, the Middle East, and the Arctic?

Kathie Olsen directed the following specific question to Kerstin Eliasson: *we have had previous panel sessions on energy, health, and water issues – all “grand challenge” issues – how can governments work together on these grand challenge issues and truly foster international cooperation?*

Kerstin Eliasson responded by emphasizing the need for global cooperation on grand challenge issues such as poverty, hunger, economic development, cybersecurity, anti-terrorism, and the Millennium Development Goals. In fact, these are issues that can only be resolved through a global approach. While science cannot solve all of them, it can and must contribute. **One point to be aware of is the need to involve other countries, including lower income countries as their contribution to science and research is growing and can be quite innovative in comparisons to industrialized countries.** Her recommendation is that the EU and the U.S. should take the lead in addressing global challenges and at the same time be more open to other countries’ contributions. After all, science and innovation are not just a matter of economic competitiveness; rather, the survival of the world and human society is at stake.



Figure 6: Roundtable Session III: Pham, Eliasson, Glover, Ezell, Campbell, Wang (from left to right)

Kathie Olsen then directed the next question to Cathleen Campbell: *how can the U.S. and the EU bring in more countries into the scientific community?*

Ms. Campbell responded by first introducing CRDF’s work, which is based in 40 countries, with a particular focus on countries that are (1) **endeavoring to become knowledge economies** and / or (2) **emerging from a period of isolation**. CRDF’s work is clearly in the category of “science for diplomacy” in the sense that scientific collaboration is the basis upon which diplomatic policies and collaboration can be built. She clearly feels that there are many opportunities for the EU and the U.S. to collaborate in third countries, and she points out the **stellar example of the EU’s opening up Horizon 2020 to the Ukraine at concessionary rates**. She also noted the example of **SESAME**, which is an EU-funded project that engages a number of Middle Eastern countries. From her perspective, this is just scratching the surface of the possibilities, and much more collaboration is in fact needed. Another area that is ripe for further EU – U.S. collaboration is in **measuring the impact of Science**

Diplomacy, for there is not currently a standard and generally accepted methodology for assessing the impact of Science Diplomacy.

Kathie Olsen directed the next question to Minh-Hà Pham: *what are the areas in which Science Diplomacy has had impact?*

Minh-Hà Pham brought up climate change as an important way in which impact can be measured. In fact, with France hosting the next round of climate talks (COP 21/CMP11) at the end of this year, **impact as measured by solutions to address climate change are an integral part of the planned proceedings.** The U.S. is a major player on this issue, and part of the efforts of the Embassy of France in the U.S. has been to organize conversations with 3,000+ people including scientists, corporate executives, students, and NGOs through FACT – the **French-American Climate Talks**-which is a series of 12 conferences in which stakeholders can discuss issues related to water access, sea level rise, and agriculture in a lively and open environment. Their U.S. partners have consistently thanked the Embassy for sponsoring the forums as they have been excellent opportunities to learn about these critical issues.

Kathie Olsen directed the next question to Anne Glover: *what are the effects of cultural differences, including the social sciences, culture, and values, on science diplomacy?*

Anne Glover noted that **cultural differences are ignored at their peril.** She shared an example of a panel discussion on biotechnology and genetically modified crops that she had with the then U.S. counselor on science in Brussels. At one point in the discussion, the U.S. counselor insisted that the European consumer is not well-served by EU legislation banning genetically modified crops from the markets. Anne Glover's response was to note that in Europe, we do not generally consider ourselves as "consumers;" rather, we think of ourselves as "citizens". That may be one of the reasons for the difference in approach between the U.S. and the EU with regards to genetically modified crops. With regards to the current **Transatlantic Trade & Investment Partnership (TTIP)** discussions between the EU and the U.S., she provided **two more examples of cultural differences that illustrate the complexities of the discussions:** (1) in the U.S., eggs are washed and dried before being sold in the market, whereas that is not allowed in the EU, and (2) in the U.S. chicken is routinely cleansed through a chlorine wash before being sold in the market, and again, this is not allowed in the EU. In both these cases, there are scientific reasons for one or the other sides of the debate, **but the fundamental difference in these cases are not due to science per se but to differing cultural values.**

Kathie Olsen noted that New Zealand had had a town hall meeting on the issue of genetically modified foods, and for most New Zealanders, at the end of the discussion, they did not care about the scientific reasons; rather, they just did not want these foods. And, the party that organized these discussions was roundly defeated in the next elections.

Kathie Olsen directed the next question to Stephen Ezell: *what impact does innovation have on Science Diplomacy?*

Stephen Ezell began by noting that the **sources of innovation have changed substantially** in the past few decades. In the 1970s, almost all innovation came from specific corporations, e.g., the famed Bell Labs. Today, fully **two-thirds of innovation comes from collaboration**, and 35% of these are from international collaboration. He would make the case that there is not nearly enough collaboration: he notes that only 4% of FP7 awardees were U.S. entities. **His recommendation would be to set a**

benchmark, e.g., let's have a 6% U.S. participation rate in Horizon 2020, and similarly, a 6% European participation rate in NSF. He would further make the case that the goals that the practitioners of science diplomacy have set for themselves are not audacious enough. It has been estimated that every \$1 of research funding for the Human Genome Project has generated \$244 in economic benefit. That being the case, what is the next grand challenge? What is the next base of scientific research that will lead to new companies?

At this point, Kathie Olsen opened the panel to questions from the floor. One questioner asked how **S&T agreements can be improved to actually have meaning and concrete benefits.** Minh-Hà Pham responded by detailing France's experience with its S&T agreement with the U.S. From her perspective, she felt that the benefits became much more concrete when the topics were focused, the participants were familiar with the topics, and the roadmap for cooperation was made clear. Ms. Campbell further noted that **S&T agreements** in the U.S. are not generally funded, **and at best, they create an enabling environment.** She noted that 8-9 years ago, CRDF Global had proposed the idea of a Global Science Fund to co-fund international research partnerships and scientific exchanges. However, the economic recession at the time made funding impossible for such an idea. Perhaps it is time to reconsider this concept.

A participant from the floor made a comment that the grand challenges may actually not call for grand solutions. In fact, it is likely that science and technology cannot solve the grand challenges by themselves; rather, policy issues will need to be addressed, too.

Another question from the floor concerned whether there were **any negative effects to science and technology collaboration.** Tom Wang responded by noting that if research collaboration between two countries becomes important, the withdrawal of support can become a weapon if relations deteriorate. Minh-Hà Pham further noted that even if there is scientific collaboration, **there must be joint interest in the results.** An example of this is the agreement that France and China has signed to ensure there **is fairness in how researchers conduct research on compounds used** in traditional medicines. Anne Glover further noted that **trust** is paramount in any successful collaboration, **while international collaboration sometimes results in what appears as inefficiencies.** However, **the net positives from collaboration far outweigh the negatives,** especially as large research infrastructure like CERN cannot be built and maintained by a single country. It should further be noted that different countries have different capabilities, and when collaboration makes use of these differences, that is when science and diplomacy are at their best.

Kathie Olsen concluded the discussion by noting that there is **broad consensus that the EU and the U.S. should continue research collaboration as it is important not only for themselves but for the world,** and all panelists would also agree that the grand challenges discussed in the overall forum will not be resolved by any single country but will require expertise from the greater, worldwide scientific community.

Closing of the conference

James Gavigan, Minister-Counselor – Science, Technology & Innovation at the EU Delegation to the United States, closed with a statement on Science Diplomacy and the EU's International Research and Innovation Cooperation Strategy. Firstly, he mentioned the main objectives of DG RTD's International Cooperation Strategy: a) **raise excellence and attractiveness** of European Union and in terms of science, technology and innovation, b) **solve global and societal grand challenges**, c) **support EU's external policies**. Furthermore, he pointed out that its specifically strategic dimensions relate to: 1) **openness** meaning increasing the participation of international cooperation in the EU Framework Programme, H2020; 2) **differentiation** referring to varying levels of scale, scope and ambition and capabilities of the respective partner country, 3) focus on **few top priorities**.

Science Diplomacy is placed at the center of this strategy, however, given the nature of Science Diplomacy, this topic is rather more implicit aiming at the overall effect from **cooperation of a mutual benefit, economic prosperity and solving and tackling global challenges**. Science Diplomacy is embedded and needs to be coordinated with other policy goals such as trade, development, coordination or environment.

James Gavigan elaborated on how the transatlantic strategy has been playing out over the past two years. Among the visible deliverables of the strategy are the so called sets of **roadmaps** looking at the S&T cooperation with nine different countries, among them Russia, China, Brazil or the USA. The roadmaps illustrate the S&T cooperation in a dedicated way with the partner country depicting the priority / focus areas for cooperation as well as strategic goals. The U.S. is, as in several other areas, one of the most important partners for the EU when it comes to S&T cooperation. One illustrating example of Science Diplomacy was the signing of the **Galway Statement** in mid-2013 which is giving rise to a series of Atlantic Ocean Cooperation projects and endeavors (Transatlantic Research Agenda). There are other examples of cooperation (e.g. in health or in transport research) however, on a less politically visible level. James Gavigan stressed that the EC flags such priority areas within specific calls in the Framework Programme H2020, in order to enhance cooperation..

An evaluation of the first round of calls in Horizon 2020 (first year) was made: Most Grant Agreements (GAs) have now been put in place and of these 48 had participations of U.S. researchers (26 have signed the GA and the others are linked to the project). However, if you look at MSC Actions, the number is much higher (258 participations).

When looking at the way forward regarding EU-U.S. transatlantic research cooperation, James Gavigan mentioned that the Horizon 2020 new work programme for 2016-2017 was going to be published on 13 October 2015 and that **there are a number of calls therein that encourage EU-U.S. cooperation and EU-international cooperation**. The new work programme includes a number of calls that address the topic of European Science Diplomacy research and coordination.

Carlos Moedas has placed Science Diplomacy at the heart of his strategic priorities and therefore in the next months and years, a number of activities and projects can be expected that further advance on this issue. In the end he stated that **where and how the EU and the USA work together will also depend on ad-hoc circumstances that will or will not require a joint approach to tackle the challenges**.

The Minister-Counselor Research & Innovation lastly thanked the BILAT USA 2.0 project and Johns Hopkins University for having organized the event and closed the conference.

Logistical information

The conference was a well-visited event in Washington D.C. It gathered around **20 experts/speakers in different fields** discussing in two key note sessions and three roundtables challenges, opportunities and views on the subject matter of Science Diplomacy. It has to be stressed that for an event in Washington D.C. the interest in the event was very large. Approximately, 90-110 people were present throughout the day. At the peak when Peter Agre and David O’Sullivan spoke, the interest was largest with around 145 participants in the audience.

The event can be viewed under the following links: [agenda](#); [Part 1](#); [Part 2](#); [Part 3](#); [Part 4](#); and [Part 5](#).

Recommendations & key statements

“Science Diplomats”

There is an increasing need for 'science diplomats' worldwide and for **effective platforms, mechanisms and spaces for dialogue between policy-makers, academics and researchers** working on foreign policy to identify projects and processes. On the one hand, scientists need to be able to “translate” their research and their results into an understandable language, on the other hand, policy-makers and diplomats need to be open to these results and consider them for an evidence-based decision making.

Areas of common interest in the field of Energy and Climate Change

Scientists have the responsibility to answer to societal needs and guide policy-makers with evidence-based knowledge. The following research areas were indicated as possible areas of EU-U.S. research collaboration in the field of energy and environment:

- **Arctic** is the key area that U.S. and Europe should work together
- **Smart grid technology** on climate change
- **Nuclear energy** is still in place in U.S. and in Europe. However, the plants are getting old and handling these aging nuclear plants is an important issue to deal with
- **Combustion inefficiencies**, high temperature materials
- **Biofuels catalytics**, increasing biofuel production

Strengthening EU-U.S. cooperation in health research

Four areas were suggested in particular:

- **The Global Health Security Agenda** represents cooperation between the USA and 40 other countries and the World Health Organisation and the World Organization for Animal Health. This initiative launched an effort to improve global capacity to prevent attack and respond to major infectious diseases. The USA announced an investment for the building of Global health capacities, followed by other countries, starting a flexible and open process with a yearly multilateral commitment meeting in rotating capitals.
- **Recommitment and common efforts towards the strengthening of the World Health Organisation** is crucial. A political mechanism was advocated for in order to reverse the erosion of WHO capacities.
- There is a necessity to reflect on **how the global community should approach research that is considered particularly dangerous – but perhaps particularly beneficial - to the global community?** What should be the expectations between countries when pursuing this kind of work? There are no international rules to guide whether this work should proceed. The EU and the U.S. should work together toward developing a common approach on such issues.
- **Governments' investment in basic science and in advanced development of new medicals and vaccines:** There is a need for a system allowing different parts of the medicine and

vaccine development community to work more effectively together. A dedicated organisation would be needed to work on translating basic science into medicines and vaccines when the private sector is not likely to do it on its own. A dedicated regulatory approach is a key development here. The EU and the U.S. should explore existing models to see what they might learn from each other's experience on these issues.

Funding international research cooperation

Given the still nationalistic mechanisms for funding science and research, **ways of more multilateral or even global (funding) mechanisms should be thought of in order to better reflect the global nature of the science community's needs** (e.g. via more coordinated calls between countries etc.). A rapid, non-bureaucratic possibility of obtaining funding for international research cooperation projects would enable researchers to more effectively tackle global challenges.

Cultural differences

Cultural differences between the EU and the U.S. are at times ignored by e.g. policy-makers. However, these **cultural differences should be kept in mind** when making agreements such as TTIP e.g. Different societies may react differently to the results of research or different processing although they are very "normal" in one country. Trust is important but cultural differences should be taken into account at all times.

[BILAT USA 2.0 project homepage](#)

Authors:

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Annex I – Conference Agenda



**NEW FRONTIERS IN SCIENCE DIPLOMACY -
Opportunities for U.S.-EU Cooperation**

BILAT USA 2.0 EU-U.S. Science, Technology and Innovation (STI) Cooperation Forum

28 September 2015, 9 am – 4.30 pm

Event Location: The Kenney Auditorium
Paul H. Nitze Building
School for Advanced International Studies
Johns Hopkins University
1740 Massachusetts Avenue, NW
Washington, DC 20036

08.30-09.00	Registration	
09.00-09.15	Welcoming Remarks	<ul style="list-style-type: none"> • Vali Nasr, Dean, Johns Hopkins SAIS or • Dan Hamilton, Executive Director, SAIS Center for Transatlantic Relations • Olaf Heilmayer, BILAT USA 2.0 Coordinator, DLR Germany
09:15-9:40	Key Note speech I – Key elements of U.S. Science Diplomacy	<ul style="list-style-type: none"> • Peter Agre, Johns Hopkins Bloomberg School; Nobel Laureate; former President of AAAS. <p>Introduced by <i>Dan Hamilton, SAIS</i></p>

9:40– 10:05	Key Note speech II – Key elements of EU Science Diplomacy	<ul style="list-style-type: none"> • David O’Sullivan, Ambassador of the European Union to the United States of America <p>Introduced by X or Dan Hamilton, SAIS</p>
10.05-10.45	Moderated Q&A discussion with speakers and audience	Moderated by Dan Hamilton , Executive Director, SAIS Center for Transatlantic Relations
10.45-11:15	Coffee Break	
11.15-12:30	Roundtable Session I Roundtable Session I U.S. Cooperation with Europe on Energy Security; the Role of Science Diplomacy for Transatlantic Energy and Climate Change Actions	<p><i>Moderator:</i> Tori Hill, Numeritics <i>Rapporteur:</i> Berna Windischbaur, FFG</p> <p>Brief Introductory Remarks <u>2 US speakers</u></p> <ul style="list-style-type: none"> • Robert F. Ichord, Jr. Deputy Assistant Secretary Bureau of energy Resources • Micah Lowenthal, Director of the Committee on International Security and Arms Control of the National Academy of Sciences <p><i>EU-speakers</i></p> <ul style="list-style-type: none"> • Hans Otto Pörtner, IPCC/AWI, AWI biologist Prof Dr Hans-Otto Pörtner, coordinating lead author for IPCC • Lars Nilsson, Professor of Energy and Environmental Studies, Lund University, Sweden
12.30-13.30	Lunch Break	
13.30-14.45	Roundtable Session II Advancing Health Science Diplomacy in the context of Global Health Challenges	<p><i>Moderated by Riitta Mustonen</i> <i>Rapporteur:</i> Svetlana Klessova, inno TSD</p> <p><i>Moderated discussion</i></p> <p><u>2 US speakers</u></p> <ul style="list-style-type: none"> • Tom Inglesby, CEO of the Center for Health Security at the University Pittsburgh Medical Center, Baltimore <p><u>2 EU speakers</u></p> <ul style="list-style-type: none"> • Jeremy Bray, policy advisor health research at DG R&I • Hannah Akuffo, Senior Research Advisor, Lead specialist Research Cooperation at the Swedish International Development

		Agency
14.45 – 15.00	Break	
15.00-16.15	<p>Roundtable session III</p> <p>New Frontiers in US-EU Science Diplomacy - Where is common ground, where are differences, what potential for further cooperation?</p>	<p><i>Moderated by Kathie Olsen, Founder and Managing Director of ScienceWorks</i></p> <p><i>Rapporteur: Jesse Szeto, NCURA</i></p> <p><u>3 US speakers</u></p> <p>Brief Introductory Remarks</p> <ul style="list-style-type: none"> • Tom C. Wang, Director for International Relations, Deputy Director, Center for Science Diplomacy, Executive Editor, Science & Diplomacy, AAAS • Cathleen Campbell, President and Chief Executive Officer, CRDF Global • Stephen Ezell, Vice President, Global Innovation Policy at the Information Technology and Innovation Foundation <p><u>3 EU speakers</u></p> <ul style="list-style-type: none"> • Anne Glover, University of Aberdeen, former chief scientific advisor to the President of the European Commission • Kerstin Elliasson, former State Secretary at Swedish Ministry of Education, Science and Culture, Science Counsellor at the Office of Science and Technology Swedish Embassy, Washington DC • Ms. Minh-Hà Pham, Counsellor for Science and Technology at the Embassy of France in Washington, D.C.
16:30	<p><i>Science Diplomacy and the EU's International Research and Innovation Cooperation Strategy</i></p> <p>Closing of the conference</p>	<p>James Gavigan Minister-Counselor Research & Innovation at the EU Delegation to the United States</p>
<p>Networking Cocktail Reception with conference participants on-site from 16:30 – 18:00</p>		

Background

The promotion of scientific cooperation is an essential element of foreign policy. Research and innovation cooperation between countries can help solve common problems, address grand societal challenges and build constructive international partnerships. Many countries integrate science as an important part into their international agendas utilizing the term ‘Science Diplomacy’ to describe international cooperation in research and innovation cooperation, even in times of crisis. Although experts may use a variety of definitions for science diplomacy, the term now has become an established approach that encompasses a variety of formal and informal technical, research-based, academic or engineering exchanges.

US Science Diplomacy, coordinated by the U.S Department of State, engages a range of U.S. agencies and scientific organizations in activities with scores of partners worldwide. The European Commission coordinates EU Science Diplomacy for the EU together with EU member states. And the U.S. and EU together are engaged in an ambitious program of cooperation, even as each engages with third parties around the world.

This conference will gather major EU and US stakeholders as well as active researchers and innovators to answer, among others, the following key questions:

- How to advance
 - ***science in diplomacy*** – informing foreign policy objectives with scientific advice.
 - ***diplomacy for science*** – facilitating international science cooperation.
 - ***science for diplomacy*** – using science cooperation to improve international relations between countries.
- Where can the EU and the US learn from each other’s approaches with regard to Science Diplomacy? Where are potentials for cooperation?
- How similar / different are the motivations and approaches of different countries / regions - here in particular the EU and US - in science diplomacy? What are some of the key differences?
- How can civil society advance science diplomacy?

Join experts and practitioners from each side of the Atlantic for a discussion of these issues, the result of a two-year collaborative effort to promote US-EU cooperation in science and technology to address common societal challenges.

The conference is organized by the EU-funded BILAT USA 2.0 project (FP7) to enhance EU-US Research and Innovation Partnerships and cooperation. The project is coordinated by DLR, Germany and 12 additional partners. Key partners in organizing the present conference are CTR, FFG, DLR and inno TSD.

Annex II – Background Document for Session Participants / Speakers

Background document

“New Frontiers in Science Diplomacy – Opportunities for U.S.-EU Cooperation”

Washington D.C., 28 September 2015

Purpose of the document

The present document is a guidance to the speakers and presenters at the BILAT USA 2.0 Conference on Science Diplomacy. For each conference speech or session participation, key questions and thought-provoking suggestions are provided that the speech / discussion could evolve around.

However, speakers are free and particularly asked to present their perception and personal ideas about the topic of discussion.

In general, the conference audience is supposed and will be encouraged to actively take part in the conference as well as pose questions.

Background of the conference

The promotion of scientific cooperation is an essential element of foreign policy. Research and innovation cooperation between countries can help solve common problems, address grand societal challenges and build constructive international partnerships. Many countries pro-actively integrate science as an important part into their international agendas and foreign policies utilizing the term ‘Science Diplomacy’ to describe international cooperation in research and innovation cooperation, even in times of crisis. Although experts may use a variety of definitions for Science Diplomacy, the term now has become an established approach that encompasses a variety of formal and informal technical, research-based, academic or engineering exchanges.

U.S. Science Diplomacy, coordinated by the U.S Department of State, engages a range of U.S. agencies and scientific organizations in activities with scores of partners worldwide. The European Commission coordinates EU Science Diplomacy for the EU together with EU Member States. In particular, EU Commissioner for Research and Innovation, Carlos Moedas has repeatedly stressed the importance of Science Diplomacy in current times. And the U.S. and EU together are engaged in an ambitious program of cooperation, even as each engages with third parties around the world.

This conference will gather major EU and U.S. stakeholders, representatives of think tanks as well as active researchers and innovators to answer, among others, the following key questions:

- How to advance
 - ***science in diplomacy*** – informing foreign policy objectives with scientific advice
 - ***diplomacy for science*** – facilitating international science cooperation

- *science for diplomacy*⁴ – using science cooperation to improve international relations between countries
- Where can the EU and the U.S. learn from each other's approaches with regard to Science Diplomacy? Where are potentials for cooperation?
- Do we have a common, transatlantic understanding of Science Diplomacy?
- Where are differences and cooperation opportunities when it comes to, in particular, Energy / Climate Change and Health Science Diplomacy?
- How similar / different are the motivations and approaches of different countries / regions – here in particular the EU and U.S. – in science diplomacy? What are some of the key differences?
- How can civil society advance science diplomacy?

The conference is organized by the EU-funded [BILAT USA 2.0](#) project (FP7) to enhance EU-US Research and Innovation partnerships and cooperation. The project is coordinated by DLR, Germany and involves 12 additional EU and U.S. partners. Key partners in organizing the present conference are CTR, DLR, FFG inno TSD and NCURA.

Expected Outcomes of the Conference

Receive input from policy-makers, science counsellors, researchers and experts as well as the general public on the topic of discussion. This input will be compiled into a report that will provide summary conclusions, suggestions and recommendations on EU-U.S. Science diplomacy focusing on aspects such as:

- Input on where the EU and the U.S. need to seek joint and coordinated approaches when it comes to international cooperation and why this is necessary
- What and where the EU / the U.S. can learn from each other's approaches?
- Potential needs for future EU-U.S. joint activities in thematic areas such as energy / climate change and health (but also others)
- An analysis of where approaches diverge and why this is the case, respectively what (negative) consequences this entails
- Input on how civil society can be engaged in international science diplomacy decisions and processes?
- Input and suggestions on evidence-based decision-making of policy-makers.

Target group of the Event

The number of expected participants is around 100 people. Participants may be representatives from the following levels:

⁴ Three terms coined in a joint conference of Royal Society and AAAS, "New frontiers in Science Diplomacy – Navigating the changing balance of power", January 2010, Royal Society, AAAS.

Policy-level: MS / EC representatives, EU Delegation, EU and US Science, Technology and Innovation policy-makers, Science Counsellors etc.

Science Technology and Innovation community: Representatives of research institutions (principally engaged in energy/climate change and health research), think tanks, public policy consultancies etc.

General public: the conference is open to the interested public. Civil Societies engagement is welcome.

Key Note Speeches

These speeches will be held by **Peter Agre** (Johns Hopkins Bloomberg School, Nobel Laureate and former President of AAAS) as well as **David O’Sullivan** (Ambassador of the European Union to the United States of America).

Length of the speeches / presentations: approx. 20-25 minutes

Power point presentation is possible, if wanted.

Key questions the speech could evolve around are:

- What are key elements of EU/U.S. Science Diplomacy?
- What significance do EU / U.S. Science Diplomacy have?
- What institutions / actors are key actors involved on both sides? How do they collaborate?
- How are Member States / Associated Countries’ representatives involved in EU SD?
- What are advantages of Science Diplomacy as opposed to ‘usual’ diplomacy in times of crisis?
- From your point of view: what specific scientific areas / fields need a joint Science Diplomacy engagement of both, the EU and U.S.? Where is it useful and why?
- Please feel free to express any further thoughts/ideas you have on the topic

The key note speeches will be followed by a 40-minutes long moderated discussion with a Q&A session from the audience to the key note speakers.

Roundtable Session I – Potential Role of Science Diplomacy for Transatlantic Energy and Climate Change Actions

This session, moderated by Tori Hill from *Numeritics*, will be based on open discussions among the speakers elaborated upon the questions indicated below.

The session will start with two short “impulse giving” presentations delivered by one EU and one U.S. speaker in order to address the important issues by providing provoking remarks and questions. Others speakers will be expected to further elaborate on these remarks and questions.

Potential key questions the session could evolve around are:

- What are the driving forces of using science diplomacy in Energy field for EU-U.S. relations?

- Which specific areas of Energy promise a common future for long-term EU and U.S. cooperation?
- What could be the possible legal or political hurdles in R&I cooperation in energy field? What are the recommendations to overcome such hurdles?
- How to secure and maintain confidence and commitment in science diplomacy?
- Recently published Council conclusions on Energy Diplomacy endorse various actions at the political level including cooperation with key partner countries indicated in the Energy Union Framework Strategy, which includes USA, Canada China, India, Brazil and some others . What would be the expected role of non-political organizations and multilateral networks that promote scientific cooperation to support these policy dialogues?
- What are best-practice examples of energy / climate change science diplomacy?
- What and where are conflicting issues (exemplified in projects)? (“Science for diplomacy”)
- Is it important to have joint U.S.-EU approaches to energy / climate change science diplomacy? If so, why?

Roundtable Session II – Advancing Health Science Diplomacy in the context of Global Health Challenges

The session will be moderated by Riitta Mustonen (Director of Development, University of Turku). The session is not intended to be compiled of different presentations but rather an open discussion between the invited speakers.

The roundtable session will start with an opening presentation by the moderator on the topic and purpose of the session, and also introduce the roundtable participants (about 5 minutes).

Each speaker will then be invited to provide a short statement (5 minutes maximum) to express their personal view on one or two of the key questions of the session – besides expressing a personal view, the short statements can also aim at raising important, thought-provoking issues, aspects, suggestions and questions. The speakers will be given the choice the show a presentation (power point type), if wanted so. The session rapporteur Svetlana Klessova (S.Klessova@inno-group.com) and the session moderator Riitta (riitta.mustonen@utu.fi) will be able to guide the speakers on the preparation of their short statement in advance where necessary.

A moderated discussion will follow for about 30 minutes, in which the speakers will be given space for discussing around the key questions of the session. The conference audience will also be invited to comment or question the speakers’ view / suggestions.

Potential key questions of the session could be:

- What are elements of health diplomacy?
- What are the ultimate goals of EU-U.S. and global health science diplomacy? What can they result in?
- What are best-practice examples of health science diplomacy? E.g. [EDCTP](#) or [IRDiRC](#)
- What and where are conflicting issues (e.g. exemplified in projects)? (“Science for diplomacy”)
- Where are different opinions / approaches regarding the fields on both sides?

- Is it important to have joint U.S.-EU /global approaches to health science diplomacy? If so, why?
- What is the role of scientists / policy-makers in health science diplomacy? (*“Science in diplomacy”*)
- On what evidence / data can health policy-makers best base their decisions?
- Is the policy-level reacting / able to react quickly (enough) in times of crisis?
- How to advance EU-US and global health science diplomacy in the future? What could be the next steps?

Finally, the session will close on a short summary by the moderator on the main ideas that were discussed in the roundtable.

Roundtable Session III – New frontiers in U.S.-EU Science Diplomacy

The session will be moderated by **Kathie Olsen**, *Founder and Managing Director of ScienceWorks*. The session is not intended to be compiled of different presentations but rather an open discussion between the invited speakers and questions from the audience. The session rapporteur is Jesse Szeto (Szeto@ncura.edu).

The moderator will briefly introduce all speakers of the session and will further clarify the session objectives (around 5 minutes).

An “incentive presentation” will be done by Tom Wang (AAAS) for around 5 minutes to raise important, thought-provoking issues, aspects, suggestions and questions. After that, the roundtable discussion is going to be an interaction between the session participants and the moderator.

37

Potential key questions the session could deal with:

- What challenges / global concerns will require the cooperation of the US-EU science communities to address? Where do the EU and the U.S. need to work together? And why?
- How can the EU and U.S. decide between or align approaches, how can we maximize **flexibility of approach** in various countries / regions to be able to respond to challenges with the (perhaps different) approaches that each challenge will require?
- What can the EU / the U.S. learn from each other’s approaches? Where are the approaches different and where similar?
- On the EU side, we have a very heterogeneous culture with individual approaches? Should they be further aligned? What are advantageous / disadvantageous?
- Should civil society be engaged in international science diplomacy? If so, how to best do that?
- What evidence / data can policy-makers best base their decisions on?

The moderator is kindly asked to also encourage the audience to pose questions in order to get different points of view into the discussion (last 20-30 minutes of the session).

Further Reading

[The EU approach to science diplomacy](#), Carlos Moedas, 1 June 2015

[New frontiers in Science Diplomacy](#) – Navigating the changing balance of power, January 2010, Royal Society, AAAS

[International Research Update](#), May 2015

[President Juncker welcomes world-leading scientists, discusses role of science in competitiveness and announces new mechanism for scientific advice](#), Press release, 13 May (and here see also: [Science Advice Mechanism](#))

[Addressing shared challenges through Science Diplomacy](#), Speech Moedas, 13 April, 2015

[Center for Science Diplomacy](#), AAAS, USA

[Evolving Institutions for Twenty-First Century \(Science\) Diplomacy](#) , Vaughan C. Turekian, 30 June 2015

[Scientific Drivers for Diplomacy](#)

[National Approaches to Science Diplomacy](#): An Education Resource, AAAS

[Health Diplomacy meets Science Diplomacy](#), The Graduate Institute Geneva, Global Health Programme, Swiss Academy of Medical Sciences (SAMS), Symposium Report, November 2013

Annex III – Press Release of the event for Dissemination

New Frontiers in Science Diplomacy – Opportunities for EU-US Cooperation

Washington, 28 September 2015 – On the initiative of the EU-funded [BILAT USA 2.0](#) project, high-level policy-makers, reputable scientists as well as high level experts and political advisors came together to discuss on the importance of science diplomacy and areas of potential cooperation for both sides of the Atlantic.

Dan Hamilton, Executive Director of the SAIS Center for Transatlantic Relations, as well as **Olaf Heilmayer**, coordinator of the BILAT USA 2.0 project opened the conference and introduced the two key note speakers of the conference on Science Diplomacy – a topic that politically ranks high both in the USA and in Europe. The Nobel Laureate **Peter Agre**, now at the Johns Hopkins Bloomberg School and former President of the AAAS conveyed what science diplomacy implies in practical terms and what tremendous success can be achieved by science cooperation illustrating this with lively examples from his own career. His visits to – among others North Korea (DPRK), Cuba or the Democratic Republic of Congo (DRC) – illustrated the efforts, difficulties and challenges science diplomacy faces, like e.g. the lack of infrastructure and transportation or different political systems, backgrounds and standards. **David O’Sullivan**, Ambassador of the European Union to the United States of America, stated that science diplomacy was a powerful tool that could guide political leaders to complex political decisions as it combines evidence-based science with foreign diplomacy. There have been many examples of when scientists cooperated although there has been little or even no political dialogue, therefore science diplomacy could offer one channel of keeping the communication between nations ongoing – as Peter Agre has proved with his work.

39



Key note speakers David O’Sullivan and Peter Agre with Dan Hamilton

The three following roundtable discussions elaborated on energy and Health Science diplomacy, and common approaches and differences in science diplomacy. Key aspects mentioned were among others that cultural differences between regions or nations have to continuously be kept in mind and acknowledged, which is true not only for the collaborating scientists but in particular also of the society the research may affect. Further, very practical questions and challenges arose such as that science was generally international but that the mechanisms to fund this science are to the greatest part national instruments. Competitiveness and its regulation complexities were mentioned as potentially hindering issues for cooperation. However, certain grand societal challenges can only be solved if nations collaborate, as was shown among other examples by the impressive example of European & Developing Countries Clinical Trials Partnership (EDCTP). Science Diplomacy needs differentiation which means that cooperation needs to acknowledge and be responsive to capabilities of different countries, researchers and scientific fields.

With an average of 100 participants and an active participation of the audience, the conference was well received and proved the need for an exchange on this topic.

A **report** of the conference is currently under preparation and will be published on the project's [website](#). View the conference and related materials are here: [agenda](#); [Part 1](#); [Part 2](#); [Part 3](#); [Part 4](#); and [Part 5](#)

BILAT USA 2.0 Coordination and General Project Information

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Duration: 3 years
Website: www.EuUsScienceTechnology.eu



The project is coordinated by the German Aerospace Center (DLR) and consists of 12 further partners: Academy of Finland (AKA), Austrian Research Promotion Agency (FFG), BIOCAT - Spain Diplomacy Matters Institute Inc - US (DMI), Florida International University - US (FIU), inno TSD -, France, Institute of Fundamental Technological Research - Poland (IPPT PAN), Johns Hopkins University - US, National Council of University Research Administrators - US (NCURA), Intrasoft International (IISA) - Luxembourg, The Research Council of Norway (RCN), Scientific and Technological Research Council of Turkey (TUBITAK).