DEPARTMENT OF SCIENCE, TECHNOLOGY,
ENGINEERING AND PUBLIC POLICY

# Developing science advice at the Embassy of Portugal in the United Kingdom

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FCT Fundação para a Ciência e a Tecnologia

Hosted by UCL Department of Science, Technology, Engineering and Public Policy (STEaPP)

# Foreword

**By Manuel Heitor**
**Minister for Science, Technology and Higher Education, Portugal**
*December 2021*

This booklet and the work of Luís Lacerda and Jean-Christophe Mauduit suggests that new paradigms of scientific diplomacy are emerging in terms of international academic, scientific and technological relations, as increasingly determined by a new era of international relations. These relationships consider activities fundamentally different from the traditional role of scientific and higher education institutions, involving, in most cases, the social and economic empowerment of regions and their actors.

It is of a critically relevance in the current European context, particularly after BREXIT. This is because the way in which structured and knowledge-based international relations are emerging at the international level, especially in a new era of intervention by governments and companies and other economic actors in association with knowledge, must be the subject of in-depth reflection. In fact, these international relations are increasingly being driven by political and economic interests, but also by a growing perception of evidence of the potential benefits resulting from the economic appropriation of the results and methods of science by society.

Despite scientific diplomacy being a secular topic, the understanding of its new paradigms in close articulation with the role of international partnerships in higher education and science will benefit from international networks and independent associations of researchers, such as PARSUK, as well as from in-depth studies, such as that of Luís Lacerda and Jean-Christophe Mauduit. They contribute to deepen and codify our growing knowledge of the operational advantages of large consortia and international R&D organizations. It also requires an understanding of the local characteristics of technological change processes and their specific normative and institutional constraints, appealing to our knowledge of the social construction of technological systems.

In fact, the emerging models of academic cooperation, which include relationships but do not seem hostage to traditional forms of international trade in services, may derive their uniqueness from the very nature of academic communities and from the strong meritocratic and universalist ideals that prevail in science at the international level, as well as the flow of students and researchers. They are also influenced by the common sense of being part of a “mission” for scientific and social development that motivates some of the best professionals from academic institutions around the world. However, under what conditions is such a model sustainable?

To answer this question, the main lessons learned from the Portuguese experience in the creation of international academic and R&D networks, such as PARSUK, include three main processes, namely: i) advanced training and the hiring of young researchers and the development of exchange programs for professors, researchers and entrepreneurs; ii) institutional development, promoting the role of scientific institutions in society, their links with the private sector and adopting policies that foster the creation of critical masses, including those oriented towards the promotion of R&D consortia with companies; and iii) “test beds” and thematic R&D networks, facilitating the integration of researchers and scientific institutions in international consortia with local relevance, facilitating the production and dissemination of knowledge and the exploration of new ideas for global markets.

It is in this context that this booklet suggests that structured international relations based on knowledge can act as agents of change if associated with forms of social and economic appropriation of knowledge. They also require understanding the nature of international cooperation beyond the export/import of “academic services” in all institutions involved. Furthermore, knowledge-based structured international relations break the traditional boundaries of “national innovation systems” and bring new challenges in terms of the institutional integrity that scientific and higher education institutions need to preserve and promote. It therefore requires public policies oriented towards the development of innovative forms of scientific diplomacy.

I strongly acknowledge and recognize the leading work and capacity of Luis Lacerda in organizing the series of meeting and workshops reported in this booklet. They were particularly important to raising awareness, garner interest and momentum around science diplomacy, as well as to promote the need for a concerted strategy across governments and a set of diversified stakeholders, including universities, industry, civil society.

Finally, I also want to recognize the already increasingly relevant relationship between University College London – UCL and Portuguese researchers and their institutions, which should be further capitalized, especially when it pertains to science policy and diplomacy policy impact on new frontiers of knowledge, namely with the UCL Department of Science, Technology, Engineering and Public Policy (STEaPP). The recommendations stemming from this report and the work of Luís Lacerda and Jean-Christophe Mauduit clearly suggest the need to deepen those relationships in a potential future UCL-Portugal program, following the Portuguese experience over the last 15 years in developing international partnerships under the “Go-Portugal Program – Global Science and Technology Partnerships Portugal”.

# Remarks on scientific diplomacy

**By Manuel Lobo Antunes**
**Portuguese Ambassador to the United Kingdom**
*January 2022*

Dr.Luís Miguel Lacerda has been carrying out a study and investigation work that I consider very meritorious around the theme generally known as "science diplomacy". This work occupied him both as president of the Portuguese Association of Researchers and Students in the UK (PARSUK), which brings together Portuguese researchers and students in the United Kingdom, and as a researcher at University College London, in the latter case in collaboration with Dr. Jean-Christophe Mauduit. Always with unsurpassed scientific rigor and intellectual seriousness, in addition to the interest and enthusiasm that are easily denoted in the way he approaches the object of his study.

The usefulness and opportunity of Dr. Luis Miguel Lacerda's work is indisputable. Firstly, because the concept of diplomacy, and diplomacy itself, has changed, and continues to evolve, over the last few years. The idea that diplomats are only responsible for the political analysis of the country where they are accredited or for monitoring trade relations, not to mention the tasks of pure diplomatic representation, is outdated. Diplomats are no longer just transmitters of opinion or information to their authorities, or actors in public relations or "representation". In the 21st century, they are required to have as in-depth knowledge as possible of all the "live" areas in the country where they perform their duties. No one has any doubts that today one of these areas is "science", in the broadest sense, including research, education, institutional framework, university life, etc., and everything related to these topics. But "science" does not have, in international relations, a static value. On the contrary, it generates dynamics between societies, exchange of people and institutions. Ultimately, it has its own specific "value" for the development and economy of States, it is what is now commonly called "soft power". That is why it increasingly occupies a central place in international relations and, in this way, in diplomatic activity. This reality is not new – the role of "science" as one of the pillars of the relationship between peoples is secular – but due to circumstances, the weight of "science" in modern societies that technological development and progress allow, occupies today a very special place in international relations.

By focusing his attention on this reality, Dr. Luis Miguel Lacerda proposes to reflect and participate in the debate on what scientific diplomacy is and should be today, how it should be articulated with the various instruments at the service of diplomatic activity and how it can it contributes to the strengthening of relations between States and citizens. Basing his study on the United Kingdom/Portugal partnership, two States with very old political-diplomatic relations, Dr. Luis Miguel Lacerda points out ways, proposes models and suggests alternatives that are very useful to diplomatic actors in both countries, and their respective governments, very opportune now, moreover, in a context of redefinition of their bilateral relations triggered by the so-called Brexit.

I have no doubt that it is very important for Portugal and the United Kingdom to intensify their partnership in the field of "science" at all levels because it will be a win-win bet with obvious and considerable gains and mutual benefits. The studies of Dr. Luis Miguel Lacerda are, in this context, not only pioneering but also with an excellent contribution on what can or should be done to achieve that objective.

## Executive summary

This booklet contains the reports that pertain to a series of three knowledge exchange events that took place in 2020-2021 under a project titled “Developing science advice at the Embassy of Portugal in the United Kingdom”, funded by the UCL Knowledge Exchange and Innovation Fund, as a partnership between UCL Science, Technology, Engineering and Public Policy Department (STEaPP) and the Portuguese Foundation for Science and Technology (FCT).

The events were designed to explore the development of science, technology and innovation (STI) capacity at the Embassy of Portugal in the UK, as one aspect of a larger science diplomacy strategy. Science diplomacy can serve to advance a country’s STI needs, to foster cross-country STI interests, to attract foreign investment and to participate in tackling global scientific challenges. As such these events therefore revealed the need for a coordinated and informed approach in designing such a strategy.

The first event (Event 1/Initial roundtable on 14th December 2020) helped understand what is needed to enhance the science-policy/diplomacy interface of the Portuguese Embassy. In particular, several Portuguese stakeholders, including the Minister for Science, Technology and Higher Education, Ambassador to Portugal in the UK, Vice-President of FCT and President of the Portuguese Association of Researchers and Students in the UK (PARSUK) reflected on their understanding of science diplomacy. This roundtable also provided insights into the drivers and institutional pathways that led to the establishment of the first-ever Scientific Advisory Board (SAB) at a Portuguese Embassy. Take-aways and next steps from Event 1 are summarized in Report 1 (Part III), among which the need to 1) provide a clearer picture of science diplomacy for all stakeholders, 2) delve deeper into current interface of PARSUK’s SAB and to 3) develop a common vision/agenda across Portuguese institutions regarding science diplomacy.

In the second event (Event 2/Mid-project workshop on 19th February 2021), UCL researchers presented on science diplomacy & policy interfaces, explaining core concepts and raising awareness about the work of science attachés. PARSUK and its SAB also delved deeper into their current mandate, structure, and operations to date. This workshop also served to highlight the challenges and opportunities of other relevant stakeholders in building a larger science diplomacy strategy, captured in more detail in Report 2 (Part II). Next steps and a suggested timeline are detailed in Report 2 (Part III) and include 1) creating an official working group for science diplomacy, 2) developing science diplomacy events and training for government stakeholders and 3) fund actionable, policy-driven research that would flesh out policy options contextualised to the Portuguese context.

The last event (Event 3/End roundtable on 25th June 2021) further broadened the knowledge exchange to external practitioners by convening a number of science diplomats deployed in London (Quebec, France, the Netherlands, the United Kingdom and Switzerland). They shared their experience and the way they operate within the scope of the larger science diplomacy strategy of their respective countries, providing an overview of the possibilities offered by appointing a science attaché. Noting that the design of a science attaché position will have to take into account the particular Portuguese context (science diplomacy strategy, institutional linkages, resources, etc.), it further highlighted the need to develop evidence-informed policy options for the Portuguese government to consider. Questions the policy brief should consider include 1) what institutional structures are needed to enable a coordinated Portuguese science diplomacy strategy, 2) what actions fall within the remit of PARSUK’s SAB; 3) what should the profile of a science attaché be according to needs & local context, and in which country is it most needed? Such a policy brief could be developed in partnership with UCL, Portuguese universities and Portuguese government stakeholders.

# Contents

# Event 1 – 14th of December 2020

## 1 Agenda

### 1.1 Short summary

This launch event is the first of three events designed to explore how to best develop science advice at the Embassy of Portugal in the UK.

It will serve as a platform to introduce the project's context and for the Portuguese stakeholders to exchange with staff at the UCL Science, Technology, Engineering and Public Policy Department (STEaPP), its Policy Impact Unit and other relevant UCL-wide staff.

The event will provide an opportunity to discuss and document the drivers and institutional pathways that led to the establishment of the first-ever Scientific Advisory Board at a Portuguese Embassy. It will aim to understand past policy choices, take stock of the current science advice mechanism and map out what research may be needed to evaluate potential future policy options. Therefore, this initial roundtable will also be an opportunity to identify stakeholders to invite in the following two events.

This project is funded by the UCL Knowledge Exchange and Innovation Fund, in partnership with UCL STEaPP and the Portuguese Foundation for Science and Technology.

## 1.2 Event timetable

| PART I – Welcoming & introduction to the project | |
|---|---|
| **15.00 – 15.10** | **Welcoming session** |
| | • Uta Staiger, UCL European Institute<br>• Joanna Chataway, UCL STEaPP |
| **15.10 – 15.25** | **Portugal strategy for science diplomacy** |
| | • H.E. Manuel Heitor, Portuguese Minister of Science, Technology and Higher Education |
| **15.25 – 15.35** | **PARSUK/Scientific Advisory Board** |
| | • Marcia Costa, President of the Portuguese Association of Researchers and Students in the UK |
| **15.35 – 15.45** | **Quick introduction to project** |
| | • Luís Miguel Lacerda, ICH Research Associate & Secretary of PARSUK Scientific Advisory Board & JC Mauduit, Lecturer in Science Diplomacy, STEaPP<br>• José Paulo Esperança, Vice-President of Fundação para a Ciência e Tecnologia |
| **PART II – Roundtable discussion** | |
| **15.45 – 16.45** | **Informal roundtable** |
| **Timeline and topics for discussion** | 1) *Quick round of introductions*<br>2) *Informal discussion/Moderator(s):* Luís Lacerda & JC Mauduit<br>• Co-development of research for scientific advice & policy impact<br>• Current structures of scientific advice in public and foreign policy in the Portuguese context and bureaucratic capacity<br>• Strategy of engagement with the scientific diaspora, maximizing its impact and sustainability of their efforts<br>• Monitoring and evaluation, impact assessment and developing future policy options<br>• Mapping out the two future events: identifying relevant stakeholders on both research & policy side |
| **Participants** | All previous speakers (if available)<br>• Patrick Rebuschat – Lancaster University & President of PARSUK's Scientific Advisory Board<br>• Jorge Aranda, Portuguese Ministry of Foreign Affairs<br>• Chris Tyler, Florence Geatrix, Rita Pinho – UCL STEaPP Policy Impact Unit<br>• Olivia Stevenson – UCL Public Policy<br>• Arthur Petersen, Ine Steenmans (TBC), Lise Andersen, George Salter – UCL STEaPP |
| **16.45 – 17.00** | **Closing remarks** |
| | • Amb. Manuel Lobo Antunes |

# 2 Post-event report

## 2.1 Short Summary

This report pertains to the launch event of a series of three events designed to explore how to best develop science advice at the Embassy of Portugal in the UK, in the context of a project funded by the UCL Knowledge Exchange and Innovation Fund, as a partnership between UCL Science, Technology, Engineering and Public Policy Department (STEaPP) and the Portuguese Foundation for Science and Technology (FCT).

This project also indirectly contributes to highlighting the role of the science policy/diplomacy interfaces within universities and their knowledge-sharing capacity, such as STEaPP, its Policy Impact Unit (PIU), UCL Public Policy and other relevant stakeholders within UCL.

Part I presents the greater context of this project, Part II provides a short summary of the remarks during the event, and Part III suggests take-aways and next steps, useful for the next event.

## 2.2 Part I: The greater context

### The existing UK-Portugal collaboration in science

The event first highlighted the long-standing ongoing collaboration between the UK and Portugal in terms of research. Looking at the UCL-Portugal collaboration specifically through the Horizon 2020 programme, more than 2000 co-publications are included and contact among 65 partner institutions took place. Underlying these statistics is an established network of personal and professional collaborations which is often hard to map given their very dynamic nature. Maintaining a good relationship with the scientific diaspora is therefore essential, not only to track the generation of new links but also to develop opportunities to grow the network further.

One such cornerstone example of how the diaspora can benefit Portugal is the creation of the Scientific Advisory Board (SAB) (of the Portuguese Association of Researchers and Students in the UK – PARSUK) to the Embassy of Portugal to the UK. PARSUK is very well organized and provides collaboration and knowledge exchange opportunities for its members which often have very close links with policy and diplomacy. Following the original official impetus of the Portuguese governmental institutions to develop a strategy for science diplomacy in late 2016, PARSUK began to seek ways to actively contribute towards its implementation. Over the last couple of years, PARSUK has had the institutional support of the Portuguese Embassy and had discussions of what should be the role of a scientific attaché. Ultimately, the decision was taken to build a Scientific Advisory Board to fulfill these functions. After more than a year in operation, there is now a need to look back on this experience and re-assess, making sure that all the original expectations from the various stakeholders are being fulfilled.

### Science diplomacy

It is important to mention early on that there is a distinction to be made between international collaboration and science diplomacy as this will influence the mission of mechanisms such as the SAB. The former is the will and ability to collaborate across borders on common research projects while the latter is the more strategic alignment between science and foreign policy (e.g. to advance a country's national needs, address cross-border interests and to meet global needs and challenges). While the current relationship in international research collaboration between the UK and Portugal is thriving, Portugal's science diplomacy strategy (here specifically pertaining to the UK and through its Embassy) needs to be collaboratively refined around a common vision shared by a variety of stakeholders.

This project and series of events has been designed to further understand the context that surrounds the science diplomacy strategy for Portugal, to explore its current mechanisms and discuss future pathways for its implementation.

## 2.3 Part II: Short summary of the event & interventions

### Portuguese Strategy for Science Diplomacy/Scientific Advisory Board

The session started with welcomes from the UCL and STEaPP leadership, highlighting UCL as a leading "global university", particularly active in issues of science policy and diplomacy and how they best address 'grand challenges'. This is demonstrated through a number of university wide activities, as well as committed units within the university, such as UCL Public Policy, STEaPP and the PIU, among others – acting as research and training hubs at these interfaces of science and policy.

These welcomes were followed by opening remarks of H.E. the Portuguese Minister for Science regarding Portugal's endeavours in science diplomacy over the last couple of years. One of the first mentions related to the COVID-19 pandemic and the need to combine both the technical and scientific efforts with policy dimensions to enable the development and deployment of vaccines and short-term therapies to manage this global public health challenge. Arguably interlinked to the difficulty in managing the pandemic are other compounding global challenges such as climate change, pollution of the oceans and deep societal inequalities. In addition, these crises have shown the risk to increasing nationalistic movements and hence make an even stronger argument to invest in science diplomacy. Portugal has already taken a few major steps in that direction by pioneering the creation of an Atlantic International Research Centre as well as launching a space agenda, important to better track changes in our planet and inform the fight against climate change. The role of scientists to develop more sustainable products and systems was also mentioned as well as the ever-present need to develop basic science to understand disease mechanisms upon which new interventions can be developed.

This followed into a discussion of some of the drivers and institutional pathways that led to the establishment of the first-ever Scientific Advisory Board at a Portuguese Embassy. Despite its successes in terms of fostering and mapping international collaboration between Portugal and the UK, the SAB has not necessarily fulfilled its "Advisory" role.

**Beyond international collaboration and enhancing interfaces between science and policy/diplomacy**

A brief description of this project was also shared by the two project's co-leads at UCL. This project is focusing broadly on how to reinforce the capacity of the Embassy in dealing with STI matters (and in particular how the SAB may help towards that mission), laying out and exploring a variety of options through stakeholder engagement in a series of meetings.

H.E. the Portuguese Ambassador also clearly exposed the need for science diplomacy (similar to other topical areas such as economic diplomacy) as a vehicle to be more informed about novel research breakthroughs and technological applications which can both benefit Portugal and draw on Portuguese expertises. Nonetheless, the creation of these interfaces is not straightforward and must be developed in collaboration between all stakeholders that will benefit from the implementation of a science diplomacy strategy.

The experience of the several stakeholders from the UCL sphere – including the PIU, UCL Public Policy and remaining staff members of STEaPP – capitalized on this notion that any meaningful arrangement of science advice will rely heavily on the bridges built to relay information between the different stakeholders. Furthermore, it is absolutely essential to define needs and expectations that can be conveyed through those bridges and discuss how to ensure the sustainability of mechanisms such as the SAB, or in developing other such mechanisms.

## 2.4 Part III: Take-aways and next steps

The event showed the strong interest and support of the various Portuguese government institutions for this project and in understanding how to best leverage a rich and diverse set of stakeholders to inform its future science diplomacy agenda.

To advance a science diplomacy strategy, strong bridges are needed between the different government institutions (and hence people within) as well as with the various other stakeholders to maximize policy coherence and expectations. Therefore, the interfaces and interlinkages between the various Portuguese stakeholders is one of the main topics that should be further investigated. Their interests and expectations should also be clarified and aligned, in particular between the scientific diaspora (represented by PARSUK and its Science Advisory Board), the Portuguese Embassy (and by extension the Ministry of Foreign Affairs) and the FCT together with the Ministry of Science, Technology and Higher Education.

The discussions that took place clearly showed that there is an opportunity to inform some of the future policy options through careful consultations with all the Portugese stakeholders as well with internal and external experts. A structured approach (via collective input, additional research, landscape analysis, etc.) may help to further align the known policy needs, identify potential opportunities that may otherwise be missed as well as defining the most salient systems and processes to maximize these.

In anticipation of the second event, the three main points below would be beneficial to discuss:

1. Providing a clearer picture of science diplomacy for all stakeholders, including different modes of operation and how they can be useful for the STI engagement of the Portuguese Embassy and the government;
2. Focus on the current interface of PARSUK's Scientific Advisory Board:
    a. Its mandate and work to date;
    b. How to best monitor and evaluate funded activities;
    c. Increase the effectiveness and impact of its work (especially on medium to long-term timeframes)
3. Developing a common vision/agenda across Portuguese institutions regarding science diplomacy

# Event 2 – 19th February 2021

## 3 Agenda

### 3.1 Short summary

This event follows from the launch of the collaborative project between STEaPP and FCT to best develop science advice at the Embassy of Portugal in the UK. In this second event, we will explore in further detail and in a more informal setting the main issues that were identified in the first event.

### 3.2 Event timetable

| | |
|---|---|
| **10.00 – 11.00** | **MINI-WORKSHOP I: Science diplomacy; modes, missions & stakeholders** |
| | Small 5 minutes introduction to frame event in a series and address people in the room |
| | 1. Short presentation & discussion on science diplomacy (e.g. definitions/taxonomies, implementation), science attaches & alternative modes of operations (deployment, activities/ functions, profiles, etc.) |
| | 2. Review of current and possible 'future' activities of the Science Advisory Board (SAB) |
| | a. Short presentation on the SAB's current role & activities (collaborations, mapping, etc.) and discussion on evaluating impact, monitoring & evaluation, necessary resources, etc. |
| | b. Discussing potential future activities & engagement<br>i. Engaging with the UK ecosystem (BEIS, FCDO, UKRI & other government stakeholders, universities, private sector, etc.)<br>ii. Leveraging London and cities in STI (city government & STI ecosystem)<br>iii. Science advice for the Embassy of Portugal |
| **11.00 – 1200** | **MINI-WORKSHOP II: Developing a common vision across Portuguese stakeholders** |
| | 3. Developing a common vision: harmonizing a diverse set of priorities & setting common expectations |
| | a. Embassy of Portugal in the UK (Portugal's STI foreign policy and UK engagement)<br>b. Ministry of Foreign Affairs (engagement with the diaspora)<br>c. Ministry of Science, Technology and Higher Education (leveraging scientific capacity)<br>d. Foundation for Science and Technology – FCT (operationalizing processes)<br>e. Scientific diaspora (PARSUK & SAB) |
| | 4. Developing channels of communication across stakeholders (e.g. working groups, bridges, etc.). |
| | a. Specific channels to be discussed<br>i. Local ecosystem – PARSUK/SAB<br>ii. PARSUK/SAB – Embassy<br>iii. Embassy – Portugal (MFA, MScience, FCT)<br>iv. Portugal – Portugal (MFA, MScience, FCT) |
| | b. Discussing the relevance of creating working groups representative of the stakeholders |

# 4 Post-event report

## 4.1 Short Summary

This report pertains to the second event of a series of three events designed to explore how to best develop science advice at the Embassy of Portugal in the UK, in the context of a project funded by the UCL Knowledge Exchange and Innovation Fund, as a partnership between UCL Science, Technology, Engineering and Public Policy Department (STEaPP) and the Portuguese Foundation for Science and Technology (FCT).

This project also indirectly contributes to highlighting the role of the science policy/diplomacy interfaces within universities, their knowledge-sharing capacity and policy demand driven research potential, such as STEaPP, its Policy Impact Unit (PIU), UCL Public Policy and other relevant stakeholders within UCL.

Part I details an overview of the event as well as a summary of interventions, Part II provides a short summary of the perceived needs and goals of all relevant Portuguese Stakeholders responsible for developing a shared agenda for Science Diplomacy Part III suggests next steps and a timeline to develop a strategy for science diplomacy.

- **Science diplomacy** can serve to advance a country's science, technology and innovation (STI) needs, to foster cross-country STI interests and to participate in tackling global scientific challenges. It is not limited to developing international scientific collaboration. In the context of an Embassy, it may involve deploying specific STI capacity within it, which can take different forms depending on identified needs.
- An effective science diplomacy strategy requires continuous articulation and clarification of expectations across different stakeholders. It is therefore important to **create an official working group for science diplomacy** which could include representatives of the Ministry of Foreign Affairs, the Ministry of Science, FCT, the Portuguese Embassy in the UK and the scientific diaspora (e.g. PARSUK and its Scientific Advisory Board).
- There is a clear need **to fund actionable, policy-driven research** to answer essential questions such as: What institutional structures are needed to enable a Portuguese science diplomacy strategy? What would an appropriate mode of S&T advice to an Embassy be, and in which country is it most needed? What should the profile of a science attaché be according to needs & local context? What actions fall within the remit of PARSUK and its Scientific Advisory Board?
- **Events and training** need to be organized to raise awareness around science diplomacy and to further inform, reconcile and align the different needs and expectations of bureaucrats, diplomats and scientists. These would also serve as crucial data gathering initiatives that feed into actionable policy research extending the breath of science diplomacy to other Embassies and diasporas.
- **Actionable next steps are proposed in Part III of this report**

## 4.2 Part I: Short summary of the event & interventions

The session started with a short presentation from Dr. Jean-Christophe Mauduit on science diplomacy, introducing the concept and its wide range of actions, which can include advancing a country's national needs in science, addressing bilateral/multilateral STI interests, or developing the capacity to address global challenges underpinned by science. As such, science diplomacy goes well beyond fostering international scientific collaboration. Given the pace and complexity of STI developments (global health, artificial intelligence, environment, etc.), their disruptive nature and impact on international relations and economies, countries rely on their networks of science attachés for policy-making and collaborative opportunities. As one of the many science diplomacy arms of a country, the presentation highlighted the roles and work of science attaches. It also presented the diversity of their modes of operations (deployment, activities, functions, profiles, etc.) that a country can choose from depending on its specific STI needs.

The session then moved to a review of current and possible 'future' activities of the Science Advisory Board (SAB). Dr. Patrick Rebuschat, president of the SAB, as well as Dr. Márcia Costa, president of the Portuguese Association of Researchers and Students in the UK (PARSUK) gave a short presentation on the SAB's current role & activities (collaborations, mapping, etc.) and discussed the need to develop monitoring & evaluation strategies to track the evolution of the SAB (further needs are identified in part II of this report). Following the first two presentations there was time for initial reactions which commented on the possibility of expanding the SAB's role to encompass a full science diplomacy strategy. As it will be described ahead in this report and mentioned in the event, further research regarding capacity and expectations must be had before answering that question. One of them is regarding the profile of a science attaché, who are bridges between their country's national STI ecosystem and the local one in which they are deployed (specifically in cities where the Embassies are located).

Finally, Dr. Tim Moonen presented the latest developments on cities. Indeed, cities are becoming more diplomatic, engaged and globally partnered. Scientists, innovators, entrepreneurs and citizens are now being able to engage directly in the urbanization of innovation and internationalizing of their own strategies. They add another dimension to be considered when planning the extent of the science diplomacy strategy through the local Embassies role.

## 4.3 Part II: Challenges and opportunities in the context of Science Diplomacy from the perspective of different Portuguese Stakeholders

In the first event's report, it was highlighted that "over the last couple of years, PARSUK has had the institutional support of the Portuguese Embassy and had discussions of what should be the role of a scientific attaché."

During this event where both the Ministry of Foreign Affairs (MoFA), Ministry of Science Technology and Higher Education (MSTHE), FCT, PARSUK and Embassy were present, it became clear that there is a disconnect regarding expectations and pathways to knowledge transfer from where the information is, to where it should be applied. Based on the discussion that took place during this workshop and also from previous informal discussions leading up to the realization of the event some challenges and opportunities were identified in the context of science diplomacy. These are summarized in the table below.

| Institution | Challenges and opportunities in the context of Science Diplomacy |
|---|---|
| **Portuguese Embassy in the UK** | The Portuguese Embassy in the UK has the potential to organize local initiatives with the Portuguese community directed towards the STI ecosystem both through engagement with the diaspora (e.g. PARSUK), with the UK government agencies and other UK institutions as well as other embassies in London.<br><br>Hence, **there is a need for specific human capacity focusing on STI-related issues** that can leverage STI information & experts to inform national STI policies, facilitate academic collaborations, showcase Portuguese science & know-how to the UK, facilitate academic collaborations & liaise with the scientific diaspora, engage with the STI-relevant private sector and link innovators with investors, and/or to negotiate & implement S&T agreements.<br><br>This will ultimately enable the Portuguese Embassy to be better equipped to participate and dialog with UK stakeholders in many crucial STI areas (environment, energy, decarbonization, vaccination, etc.) and have quick access to digestible scientific information that can be acted on to operationalize the government's strategy. |
| **Ministry of Foreign Affairs (MoFA)** | As a central point for the management of Portugal's relationships with the world, the Ministry of Foreign Affairs has many missions, amongst which establishing and maintaining relationships with the Portuguese Diaspora. Although this mission can be accomplished partially through the Embassies that exist throughout the world, the MoFA has also been responsible to organize several campaigns to attract investment back to Portugal and provide the opportunities to enable the return of its nationals and establishment of foreign citizens (for example: https://pnaid.mne.gov.pt/pt and https://www.programaregressar.gov.pt/en/).<br><br>Given the pace and complexity of STI developments (global health, artificial intelligence, environment, etc.), their disruptive nature and impact on international relations and economies, **there is a clear need to access and leverage scientific expertise** that can inform policy making.<br><br>**Science diplomacy training** is important to raise awareness around these topics and to further inform, reconcile and align the different needs and expectations of bureaucrats, diplomats and scientists. This can also help identify cross-institutional structures and knowledge management processes that could benefit the MoFA. |

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|---|---|
| **Ministry of Science, Technology and Higher Education (MSTHE)** | The Ministry of Science Technology and Higher Education is the highest representative for the Portuguese STI ecosystem and is responsible for ensuring that the work developed in this sphere can be harnessed to advance society. Over the past decades, large investments in the formation of highly qualified human capacity has led to Portugal being increasingly recognized as a strong innovation player in Europe (https://ec.europa.eu/docsroom/documents/41887).<br><br>By investing in and coordinating **science diplomacy activities** in collaboration with the MoFA and other stakeholders, the MSTHE can further connect to international STI networks, develop large scale scientific collaborations, attract international students for the Portuguese Higher Education system and enable Portugal to become an STI hub for international researchers & professionals. Initiatives such **as mapping and leveraging the scientific diaspora** will help reinforce a long-term agenda for STI**.**<br><br>Promoting Portugal science worldwide (e.g. its innovative "Atlantic Interactions" agenda) through a dedicated network overseas could also elevate its role in contributing towards societal challenges and bring to the fore the role of science for the development of a country. |
| **Foundation for Science and Technology (FCT)** | The Foundation for Science and Technology works in very close collaboration with the Ministry for Science, Technology and Higher Education and is the primary agency for funding R&D activities in Portugal. Some of the main FCT goals are to showcase international recognition of portuguese R&D; recruit foreign investment (qualified human resources) and academic researchers; attract financing; and mobilize national and international actors through innovative approaches in several areas of knowledge.<br><br>In this context, access to the international landscape facilitated via **science diplomacy actors** can be essential. There is an opportunity to collaborate more closely with PARSUK and the SAB to map the scientific diaspora which could be helpful to some of the goals of FCT mentioned above. Similarly, FCT could help **fund actionable, policy-driven research** that will inform future policy decisions around **science diplomacy actions**. |
| **PARSUK and its Scientific Advisory Board** | The Portuguese Association for Researchers and Students in the UK (PARSUK) has been instrumental to act on the initial intent of the Portuguese government to develop a science diplomacy strategy, having organized the first forum for a formal discussion on science diplomacy and facilitating the creation of the first Scientific Advisory Board to a Portuguese Embassy.<br><br>The SAB's main objectives are to advise PARSUK and FCT regarding STI issues and strategic areas of interest to advance Portugal's scientific strategy; benchmark best practices that can be translated to the Portuguese reality and promote the development of alumni networks/cooperation between both the UK and Portugal.<br><br>However, PARSUK and the SAB develop all their work on a voluntary basis and have very limited resources in both funds and manpower to manage initiatives. Furthermore, there is a lack of a framework/context in which PARSUK and SAB operate. Therefore, **there is a need to invest in a science diplomacy strategy that includes PARSUK and the SAB** and explores their potential to inform the Portuguese Embassy regarding strategic areas of interest to advance Portugal's scientific strategy, potentially liaising with dedicated STI capacity at the Embassy. |

## 4.4 Part III: Proposed next steps for the development of a science diplomacy strategy

The implementation of this strategy has multiple levels, which are here presented with a tentative timeline.

- **Summer 2021:** An effective science diplomacy strategy requires continuous articulation and clarification of expectations across different stakeholders. It is therefore important to create an official working group for science diplomacy.

  This working group could feature the following characteristics:

  1. Representation from the Ministry of Foreign Affairs, Ministry of Science, FCT, the Portuguese Embassy in the UK and the scientific diaspora (e.g. PARSUK and its Scientific Advisory Board).
  2. Liaising with the National Council for Science, Technology and Innovation (CNCTI) to articulate national and international realities/strategies for STI
  3. Designing events and training to raise awareness around science diplomacy and to further inform, reconcile and align the different needs and expectations of bureaucrats, diplomats and scientists
  4. Discuss modes of overseas deployment of science diplomacy capacity (e.g. a full or part-time science attaché, a 'scientist in residence' programme, etc.), potential sources of funding, and research needed for informed policy decisions in this realm
  5. Broaden the reflection on science attachés & science diplomacy strategies to other Embassies and diasporas by including their respective representatives
  6. Further refine the scope and content of a larger science diplomacy strategy to advance Portugal's STI needs, to foster targeted cross-country STI interests and to participate in tackling global scientific challenges

- **September – December 2021:** Development of science diplomacy events/training in order to:

  a. Provide opportunities to further inform, reconcile and align the different needs and expectations of bureaucrats, diplomats and scientists. These would also serve as crucial data gathering initiatives that feed into actionable policy research;

  b. Integrate STI matters/actors with other institutions generally represented within embassies (AICEP, Instituto Camões, Commerce Chambers, Others);

- **January 2022 onwards:** Fund actionable, policy-driven research that would flesh out policy options and help the Working Group answer essential questions such as:

  a. What institutional structures are needed to enable a Portuguese science diplomacy strategy?

  b. What would an appropriate mode of S&T advice to an Embassy be, and in which country is it most needed?

  c. What should the profile of a science attaché be according to needs & local context?

  d. What actions fall within the remit of PARSUK and its Scientific Advisory Board?

In the first event of this series, an initial discussion regarding science diplomacy took place between a select group of Portuguese stakeholders and UCL researchers/staff experienced in science policy/diplomacy. It set the scene for the event which this report pertains to, where different modes of science diplomacy were discussed and expectations shared amongst different Portuguese stakeholders.

Communication across every stakeholder identified in this report (Ministry of Foreign Affairs, Ministry of Science Technology and Higher Education, FCT, PARSUK and the Embassy) is essential to drive a science diplomacy agenda forward.

Further dedicated funding (beyond UCL's initial grant) would be needed to better assess what is the best way to deploy scientific expertise within Embassies in the Portuguese context, with what priorities, and what are the most strategic locations to do so. This would lead to a set of informed policy options. In the meantime, it is important to initiate landscape analyses and to engage in benchmarking exercises.

The last event of this knowledge exchange series will therefore focus on convening a number of science attachés (or other science diplomacy representatives) from the London area to contrast and compare different science diplomacy strategies deployed by foreign governments. This open and free-flow discussion will be a first step towards a greater reflection on what could be relevant options to explore given the Portuguese context.

# Event 3 – 25th June 2021

## 5 Agenda

### 5.1 Short summary

This is the last of three events designed to explore how to best develop science advice at the Embassy of Portugal in the UK.

In the first event of this series, an initial discussion focusing on science diplomacy took place between a select group of Portuguese stakeholders and UCL researchers/staff. The second event highlighted the need to clarify different modes of science diplomacy and how Portuguese stakeholders may develop a common vision and overarching strategy.

For this final event, we will gather UCL STEaPP staff, Portuguese stakeholders (most importantly the Embassy) and invited science diplomacy representatives of selected Embassies in London and the UK Foreign Commonwealth Office Science Innovation Network. This roundtable will further broaden the knowledge exchange to external stakeholders. The goal is to open a broader set of discussions around the various interfaces currently used by various countries and explore the importance of S&T capacities in Embassies, in particular within the UK context.

## 5.2 Event timetable

| | |
|---|---|
| **10.00 – 10.10** | **Welcoming session** |
| | • Uta Staiger, Pro-Vice-Provost, UCL European Institute<br>• Jo Chataway, Head of Department, UCL Science, Technology, Engineering and Public Policy<br>• José Paulo Esperança, Vice-President of Fundação para a Ciência e Tecnologia (Rui Munha) |
| **10.10 – 10.25** | **Quick introduction to the project** |
| | • JC Mauduit, Lecturer in Science Diplomacy, STEaPP<br>• Luís Miguel Lacerda, ICH Research Associate & Secretary of PARSUK Scientific Advisory Board<br>• Patrick Rebuschat, Lancaster University & President of PARSUK's Scientific Advisory Board |
| **10.25 – 11.05** | **Short presentations for a 'landscape analysis' of mode operations in Science Diplomacy** |
| | In alphabetical order:<br>• Lutz-Peter Berg (Head of Science & Innovation, Embassy of Switzerland)<br>• Marjolein Bouwers (Chief Innovation Advisor, Embassy of the Netherlands)<br>• Ludovic Drouin (Science Attache, Embassy of France)<br>• Cade Hamilton (Head of Operations and Governance, United Kingdom Science and Innovation Network)<br>• Jean-Christian Lemay (Research & Innovation Attaché, Québec Government Office) |
| **11.05 – 11.55** | **Informal roundtable** |
| Timeline and topics for discussion | **Moderators:** Luis Lacerda & JC Mauduit<br>**Participants:** Open to all (please see list below)<br>Suggested thematics:<br>• The importance of having S&T capacity at an Embassy and more specifically in the UK context: roles and day to day activities<br>• Issues of operation and financing: what is the current mode of deployment of S&T capacity (if any) and how is/are the position(s) financed (e.g. M. of Science, MoFA, etc.)?<br>• The 'return on investment' of a science attache/diplomatic engagement on S&T issues; how is M&E and impact measured?<br>• How are national S&T priorities aligned to the work of science attaches? How are the various S&T & diplomatic stakeholders communicating?<br>• Collaboration vs. competition: how is collaboration in S&T leveraged in the London area |
| **11.55 – 12.00** | **Closing remarks** |
| | • Ambassador Manuel Lobo Antunes |

# 6 Post-event report

This report pertains to the final event of a series of three events in 2020-2021 designed to explore the development of science advice at the Embassy of Portugal in the UK. The project is funded by the UCL Knowledge Exchange and Innovation Fund, as a partnership between UCL Science, Technology, Engineering and Public Policy Department (STEaPP) and the Portuguese Foundation for Science and Technology (FCT). It aims at leveraging the knowledge-sharing capacity and policy-demand driven research potential of universities at the science policy/diplomacy interfaces, such as UCL STEaPP.

## 6.1 Short Summary

The session started with initial remarks from UCL stakeholders highlighting the importance of this series of events and the participation of academics in the co-production of knowledge enabling evidence-informed policies. The same message was highlighted by the Portuguese stakeholders who further added the need to leverage the existing research at these interfaces and increase co-participation in decision-making and public policy development. The science attachés and officials present lauded the approach of organizing events and developing policy-driven research that can inform the development of an effective science diplomacy strategy and a potential science attaché position.

The open and free-flow discussion was the first step towards a greater reflection on what could be relevant options to explore given the Portuguese context. Part I provides different modes of operation in science diplomacy and identifies a subset of characteristics to be taken into consideration when devising a science attaché position. Part II suggests recommendations to develop a strategy for science diplomacy in the Portuguese context.

- This particular series of events focused on informing the creation of science, technology and innovation (STI) capacity at the Embassy of Portugal. It is important to note however that this is only one aspect of a larger science diplomacy strategy. Science diplomacy can serve to advance a country's STI needs, to foster cross-country STI interests, to attract foreign investment and to participate in tackling global scientific challenges (e.g. Gluckman et al. 2017). As such these events therefore also revealed the need for a coordinated and informed approach in designing such a strategy.
- The first two events focused on the work and role of the diaspora association PARSUK and its Scientific Advisory Board (SAB) and the perspectives of the various Portuguese stakeholders on science diplomacy. They also served to highlight that a science diplomacy strategy, and by extension the work of a science attaché, is not limited to developing international scientific collaboration. In addition, the functions of the SAB (as a board of volunteers) should be clarified and differentiated from what a (funded) science attaché position could add.
- This last event convened a number of science attachés or science diplomacy representatives (Quebec, France, the Netherlands, the United Kingdom and Switzerland) present in London to contrast and compare different government strategies in deploying science attachés overseas. They shared their experience and the way they operate within the scope of the larger science diplomacy strategy of their respective countries. This report summarises some of the characteristics highlighted during the event, providing an overview of the possibilities offered by appointing a science attache.
- It is important to note that these are non-exhaustive and pertain to specific country's strategies and context. The design of a science attaché position will therefore need to take into account the particular Portuguese context. As such, it will require the coordinated and active participation of all relevant stakeholders (e.g. see the report on Event 2) to discuss a larger science diplomacy strategy and the development of a science attache position, as well as carefully designed research that can further inform the process and enable evidence-informed policies. Indeed, several questions remain to be addressed. What institutional structures are needed to enable a coordinated Portuguese science diplomacy strategy? What actions fall within the remit of PARSUK's Scientific Advisory Board? What should the profile of a science attaché be according to needs & local context and in which country is it most needed?

## 6.2 Part I: Modes of operation in science diplomacy

The diversity of activities and modes of operation reported by the science attachés highlighted that there is not a 'one size fits all' science diplomacy strategy, which depends upon the context and needs of the country. This holds true for the deployment of science attachés, which can also differ in strategy depending on the particular posting at an embassy within a particular foreign country, which in turn has its unique context to leverage. It is this bridge between the home country's context and the local country in which the attaché is deployed which is important to investigate and define, in order to maximize its impact.

In fact, there are a set of considerations that should be discussed when deciding on a mode of operation in science diplomacy, which are summarized below based on the discussions that took place in this event. It is to be noted that these are non-exhaustive since they reflect only information presented by the five science attaché networks present at the event. Many more activities and operations can be designed depending on context (e.g. see Ruffini 2017, Ittelson & Mauduit 2019). In particular, a careful landscape analysis should be undertaken to expand on the perceived challenges and opportunities identified in the report of Event 2.

Several (iterative) steps would be needed to decide upon and inform the deployment of a science attaché position. Figure 1 below presents some of these steps. Further information on each step, collected from oral interventions in the event, is given in the tables contained in this section.

The tables below contain a summary of the remarks from the various science attachés or science diplomacy representatives who contributed to the event. As the discussion was under Chatham House rules, those are not quotes but digested and unattributed snippets of information. In addition, it should be emphasized that they only capture the experience and diversity of the five countries represented at the event. More research on a larger set of countries would allow for a more comprehensive overview of available options.

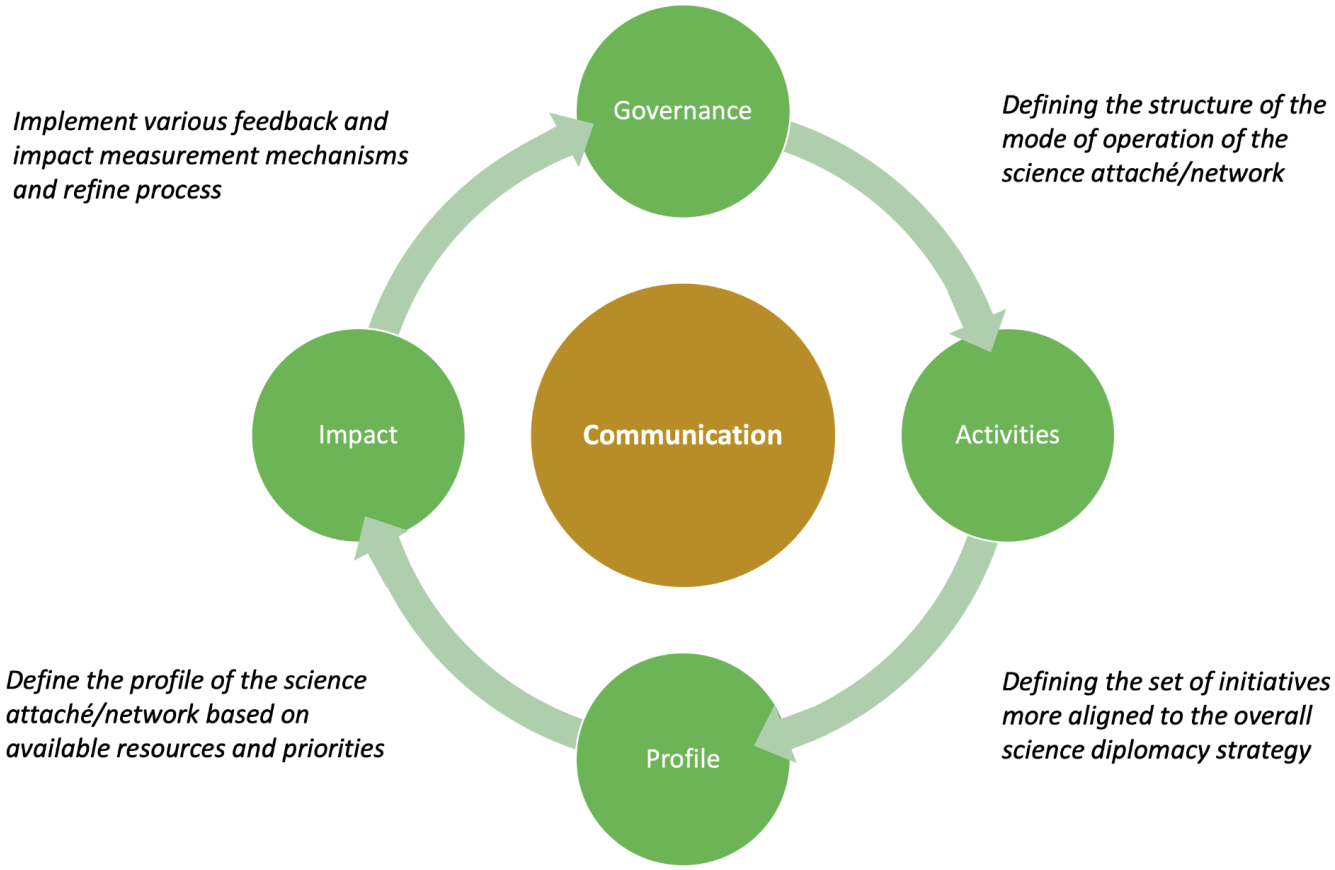


**Figure 1:** Steps to consider when devising a new mode of operation for a science attaché/network in the context of a larger science diplomacy strategy. Note that this is an iterative cycle.

### 6.2.1 I.1 Governance, deployment and financing

| | Governance | Deployment | Financing |
|---|---|---|---|
| **Questions asked** | What institutions' remit do the science attaché positions fall within? | What are possible modes of deployment? | How are the science attaché networks financed? |
| **Existing options presented by attachés & officials present** | • A mix of Ministry of Foreign Affairs and Ministry of Science<br>• Joined efforts together with the Ministry of Education<br>• the networks involving science attachés evolved into innovation networks reporting to different stakeholders (a mix of public & private) | • Civil servant (e.g. from the Ministry of Foreign Affairs) seconded to an embassy;<br>• Locally employed staff (located at the Embassy or even within a university)<br>• A "Scientist in residence" (akin to a postdoc but as a placement at an Embassy)<br>• Part-time staff (e.g. economic attaché handling STI issues)<br>• Several science attachés working on specific subsets of STI areas | • Shared funding across different ministries (Science, Foreign Affairs, Education, Economy, etc.)<br>• Mobilizing the economic potential of the home country STI ecosystem (public & private funding)<br>• Leveraging the potential of science/industry ventures at city level |

Some initial remarks

- The countries represented in the discussions already provide a wide array of modes of governance, deployment and financing but are only a subset of all possible options. A careful landscape analysis would be beneficial to further expand on other existing modes of governance, deployment and financing for a science attaché position and to determine the most appropriate to the Portuguese case.
- Taking stock of the inter-ministerial arrangements already in place and understanding how these could be adapted to create and finance an S&T position (if this is deemed the right course of action). In addition, engaging a wide array of stakeholders1 (from the government to the private sector and academia) in discussions would be invaluable to reap larger benefits.
- Maintaining agility and flexibility in the modes of operation is key to adapt to the ever-evolving circumstances, have an opportunity to design and test different solutions.

1 E.g. a collaboration with Portuguese Foreign Trade and Investment Agency (AICEP) could be explored

### 6.2.2 I.2 Activities of science attaches

| | |
|---|---|
| **Engaging with the private sector & Horizon-scanning** | • Assisting startups and enable access to funding<br>• Advising on innovation-related policy/autonomy/economic security[2]<br>• Horizon scanning on emerging technologies impact on industry (e.g. quantum tech, AI, green tech, blockchain, etc.) |
| **Supporting international scientific collaboration** | • Developing, enabling and supporting international mobility for staff and students (exchange programmes, etc.)<br>• Leveraging bilateral funding instruments<br>• Incentivize/support applications for research programmes<br>• Funding opportunities outside EU mechanisms following Brexit (in the case of the UK) |
| **Supporting evidence-informed policy making** | • Reporting and synthesizing key information and knowledge (knowledge brokerage).<br>• Transfer of useful STI policy practices from the local country for implementation of national STI policy and strategy<br>• Foresight analysis & future scoping on emerging STI policies aligned with international partners |
| **Promoting national STI excellence/ public diplomacy** | • Invite top scientists to showcase their work and demonstrate the potential of the home S&T ecosystem<br>• Positioning speakers for international conferences/events & hosting events to convene multilateral partners<br>• Positioning the home country policies and actions to benefit from the host country priorities<br>• Maintaining international networks across countries in order to contribute international STI governance |
| **Forging & maintaining key connections** | • Mapping of stakeholder, alumni and diaspora networks<br>• Harmonization of practices (e.g. recognition of professional certifications)<br>• Maintain networks that can be leveraged to tackle global challenges (climate change, antimicrobial resistance, etc.) |

Some initial remarks

- There are a large number of activities that S&T personnel at an Embassy can do. Such activities are defined according to the overall science diplomacy strategy, noting that often a specific focus is guided by the ecosystem in which such activities will take place.
- For the Portuguese context in London, the activities performed by PARSUK Scientific Advisory Board could be clarified and differentiated from those best undertaken by a science attaché.

2 The following example was provided during the event: while developing security surrounding telecommunication networks such as 5G is necessary, certain manufacturers need to be avoided for geopolitical reasons: an innovation/science attache can help create links with the host country companies and facilitate cooperation to develop the technology in-house)

### 6.2.3 I.3 Profile of the staff to be hired

| | Skills | | Areas of expertise |
|---|---|---|---|
| **Questions asked** | Should a science attaché preferentially have a scientist or diplomat background? | What kind of skills would be beneficial for a science attaché position? | Which sectors are the science attaché to cover? (life science, engineering, social scientist, humanities, etc) |
| **Answers provided by attachés & officials present** | • Whoever is deployed should have a very good understanding of how the host country (and Portuguese) higher education and innovation systems works<br>• There are pros and cons for a civil servant compared to a scientist | • Good at information gathering and evidence synthesis<br>• Having informal connections, networking | This depends on:<br>• the overarching science diplomacy strategy of the country<br>• the location where the position is being considered<br>• the person selected for the job |

Some initial remarks

- The profile of a science attaché can vary depending on the goals of the science diplomacy strategy (to which the desired activities are linked), such as the level of independence in the mission and activities to carry out (can be more top-down or bottom-up).
- Finding the appropriate candidate to fill in such a position may require a certain level of awareness of science diplomacy activities that can be communicated through training and joint events involving civil servants, diplomats, scientists, innovators and other key stakeholders.

### 6.2.4 I.4 Communication:

| | Level of engagement | Feedback mechanisms |
|---|---|---|
| **Questions asked** | How to ensure that the activities of the science attaché/network follow the overarching strategy for science diplomacy? | How to enhance communication across multiple stakeholders and adjust the course of the network? |
| **Answers provided by attachés & officials present** | • Guidelines can be defined at a high-level (Ministry of Science, Ministry of Foreign Affairs), specifying priorities to be addressed (e.g. specific science advice on requested topics like climate change action or pandemic preparedness).<br>• A bottom-up approach may however be preferred, giving the science attache a higher level of independence locally to analyse what areas may be interesting for the country and its stakeholders | • For the effective deployment of a science diplomacy strategy, expectations need to be clearly defined across all stakeholders<br>• It is also possible to have a board of senior stakeholders (e.g. the SAB in the Portuguese case) to identify where the network would benefit from engagement with the wider policy, industry and academic spheres |

Some initial remarks

- Communication is a challenging but crucial aspect of a successful strategy and deployment of an attache. It needs to be adapted to the cultural and societal context of the particular country. Developing general guidelines/a standard operating procedure can help guide the activity of the attaché and help establish clear communication channels (facilitating M&E of the network's impact and agile governance).
- An interdepartmental working group could be a good step to foster dialogue between all relevant stakeholders and further develop communication channels

### 6.2.5 I.5 Impact

| | Priority targets | Outputs | Measures of success |
|---|---|---|---|
| **Questions asked** | Who does the network/mode of operation work for? | What kind of outputs from the network are most valuable to the home government? | How can the work of the science attaché/network influence its own evolution? |
| **Answers provided by attachés & officials present** | • The network needs to be stakeholder focused rather than Ministry-focused<br>• There is a need to evaluate the impact of the mode of operation (attache/network) to understand who benefits the most of it (e.g research institutes and innovation actors) | • Reports, newsletters for specific topics which can be circulated between different departments<br>• Dedicated cables/ messages for specific departments (energy division – hydrogen, etc)<br>• Community related events | • Annual report sharing all the companies and industries that were engaged with/ the nature of request from the home government for advice/the nature of the events organised/what has been facilitated by the network/how much funding was attracted as a result of the network activity |

Some initial remarks

- Outputs are diverse, and impact can be demonstrated in a number of ways, although it is not easy to properly evaluate
- Creating quick feedback loops and longer-term M&E frameworks can assist in refining the defined strategy (agile governance) to make it more efficient and ascertain return on investment

## 6.3 Part II: Development of a science diplomacy strategy in the Portuguese context

The discussions that took place over this series of events and the information gathered clearly showed that there is an opportunity to inform some of the future policy options through careful consultations with all the Portuguese stakeholders as well with internal and external science policy and diplomacy researchers and experts.

The reports are a summary of the discussions that took place during the three organized events, along with some basic recommendations only. They are the result of a UCL grant that allowed the organization of events to foster knowledge exchange between government, practitioners and researchers. A dedicated, comprehensive report (along with policy briefs) based on proper research, could be done in tandem with researchers in science policy and diplomacy at universities in Portugal, the UK and/or elsewhere. Note that discussions have already taken place around science policy and diplomacy research between University of Lisboa, University of Coimbra and University College London.

## 6.4 Part III: Initial recommendations

In order to take the next step towards the development and implementation of a science diplomacy strategy, the following recommendations are suggested:

- **Perform a landscape analysis of the London/UK ecosystem (and other cities/countries identified as strategic) & cross-compare with the Portuguese ecosystem** to understand the full potential of opportunities to be explored through the presence of a science attaché or other modes of science advice to an Embassy. This could also help justify the starting options (and therefore resources) for the creation of a dedicated S&T position. Note that the UK may offer increased opportunities for bilateral relations in S&T in the wake of Brexit.
- **Refine the role of PARSUK/diaspora associations.** Currently, PARSUK's Scientific Advisory Board remains independent and has developed its own strategy. Whether such a strategy should be more closely aligned with the one of the Portuguese government is a matter of debate, but clear expectations must be set regarding the role the SAB would play in the context of science diplomacy (and in particular in its engagement with the diaspora).
- **Develop a more thorough landscape analysis of existing S&T advice at Embassies in other countries** to further expand options on possible modes of deployment, governance, financing, etc. and develop a list of desired activities and expected impact/return, as well as the profile of a potential science attache.
- **Create awareness for the importance of a carefully-crafted science diplomacy strategy through the organization of training and joint events.** Organizing joint training events around science diplomacy bringing together civil servants, diplomats, scientists, innovators and other relevant stakeholders would create the necessary awareness of the benefit of a concerted strategy that is inclusive and clear to everyone.
- **Identify/create the necessary institutional structures to develop an efficient science diplomacy strategy and clarify communication channels.** Looking into the role of the SAB and the potential deployment of a science attache has highlighted the need for a more concerted coordination across various stakeholders to put together a science diplomacy strategy for Portugal. Not only should more formal communication channels be put in place, but a shared "manifesto" could be developed to encapsulate the needs and potential contributions of all stakeholders.
- **Adapt/create feedback loops and monitoring & evaluation (M&E) mechanisms** as these can assist in clarifying the return on investment of the mode of S&T advice chosen and to identify any changes which can make it more efficient.

## List of participants/Biographies

**Lise Andersen:** Lise Andersen is a third year PhD Candidate at STEaPP, working under the supervision of Professor Madeline Carr and Professor Brian Balmer. Her research focuses on the management of scientific and technological knowledge in the context of international multilateral diplomatic negotiations in the UN setting. Lise holds a BA in Global Studies from the University of California Santa Barbara and an MSc in Global Governance and Diplomacy from the University of Oxford. Throughout her academic career her research interests have centred on diplomatic practice, science diplomacy, climate change and knowledge management. Lise has held various research and teaching assistant positions at universities in the UK and US, focusing on policy-making, international affairs, academic writing and research methods. She works as Associate Editor for the Journal of Science Policy and Governance. In the past she has interned for the UK Science and Innovation Network at the British Consulate General in Boston; she is currently interning at the FCDO's Policy Unit and will be taking up a placement at the UK's Government Office for Science next year.

**Amb. Manuel Lobo Antunes:** Manuel Lobo Antunes has been Portuguese Ambassador to the United Kingdom since September 2016. He was born in Lisbon in 1958. Mr Lobo Antunes graduated in Law with post-graduation in European Studies from the Catholic University of Lisbon. He joined the Portuguese Diplomatic Service in March 1983. In 1984 he was appointed as Diplomatic Adviser to the President of the Republic. Mr Lobo Antunes joined the Portuguese Embassy in The Hague as Secretary and afterwards as Counsellor in Harare. Returning to Portugal in 1996, he took office as Director of the Department of Sub-Saharan Africa at the Ministry of Foreign Affairs. In 2001, Mr Lobo Antunes served as Diplomatic Advisor to the then Prime Minister of Portugal António Guterres, becoming afterwards Deputy-Director and later Director-General of European Affairs Department at the Ministry of Foreign Affairs. He was then appointed as alternate representative of the Portuguese Government to the Convention on the Future of Europe. Between 2005 and 2008 he acted as Secretary of State for National Defence and Maritime Affairs and was subsequently appointed as Secretary of State for European Affairs. In 2008 he was named Permanent Representative of Portugal to the European Union. Before his current position in London, Mr Lobo Antunes was Ambassador to Italy. He is married and has five children.

**Jorge Aranda:** Jorge Aranda is a Portuguese career diplomat since 1998. He is currently the Director of Security and Defence at the Ministry of Foreign Affairs in Lisbon. Before he was Diplomatic Advisor to the Prime Minister and, in previous Governments, Diplomatic Advisor to the State Secretary for European Affairs and the State Secretary for National Defence. His last posting abroad was in Brussels, as Defence Counsellor at the Permanent Delegation of Portugal to NATO, during which he eventually served as Dean of the Defence Policy and Planning Committee. He had been posted before to Helsinki, Warsaw, Berlin and Copenhagen. He holds a master's degree in international Relations at the Institute for Social and Political Sciences of the University of Lisbon, where he has been teaching as a guest professor in the post-graduate programme "Corporate Diplomacy" and where he is currently a PhD student. He is often a speaker at conferences on security and defence issues and recently published a book on Science Diplomacy.

**Marcia Costa:** Márcia Costa is a Senior Editor at The Lancet Oncology. She studied biomedical engineering and biophysics at the University of Lisbon, followed by a PhD in cancer therapy at the Institute of Cancer Research. After a postdoctoral position at the same institute, she joined The Lancet as an Assistant Editor in 2018 and became a member of The Lancet Oncology in 2019. She has been President of PARSUK since June 2019.

**Lutz-Peter Berg:** Lutz-Peter Berg is the Head of Science & Innovation for the UK, Ireland and the Nordic countries at the Swiss Embassy in London. His work includes bilateral projects and programmes with various science stakeholders as well as policy work around international relationships in science, skills, innovation and science diplomacy. On behalf of the Swiss innovation agency, he runs an accelerator for Swiss startups exploring the UK. Lutz has a background in biomedical research and R&D (Biotech start-up, Lecturer at Imperial College and postdoc in molecular genetics). He holds a PhD in molecular genetics from the University of London and attended the University of Goettingen in Germany (Masters degree) and University of California Santa Cruz in the US.

**Marjolein Bouwers:** Chief Innovation Advisor, Embassy of the Netherlands

**José Paulo Esperança:** José Paulo Esperança is Full Professor of Finance at ISCTE – University Institute of Lisbon. He was Director of ISCTE Business School from April 2015 to April 2019, the date on which the Vice-Presidency of the FCT. He has a degree in Business Organization and Management from ISCTE and obtained MBA from Universidade Nova de Lisboa. Doctorate in Economics from European University Institute of Florence, with a thesis on the decision investment by service multinationals. Conducts your research in the management areas, on topics such as entrepreneurship and Small and Medium-sized financing Business, corporate governance and the impact of a common language on international business. He was founder and president of the AUDAX-ISCTE family and entrepreneurship support center and from BGI – Building

Global Innovators, a start-up accelerator dedicated to technology transfer under the MIT Portugal Program. He was the Portuguese Delegate for the instruments dedicated to SMEs in the Horizonte2020 and member of the Directive Council of the Portuguese Confederation of Defense Associations of the Environment. He was born on October 13, 1957, in Vila Garcia, Guarda.

**Joanna Chataway:** Joanna is Head of Department of the Science, Technology, Engineering and Public Policy (STEaPP) in the Faculty of Engineering Sciences at University College London (UCL). Previously, she was Deputy Director and Professor of Science and Technology Policy at SPRU, University of Sussex. She also directed the Innovation, Health and Science (IHS) research group at RAND Europe. She is a leader in the field of science and innovation policy and with colleagues at STEaPP is spearheading new interdisciplinary approaches to researching and teaching science policy and science advice. She has extensive experience in the fields of interdisciplinary co-produced policy analysis, evaluation approaches and methodologies, public and private sector intersects, international development, health research and innovation policy, capacity building, equity and innovation. She is currently on the Oversight Board of the Areas of Research Interest initiative and Chairs an Advisory Board for a large NIHR project.

**Ludovic Drouin:** Ludovic Drouin has obtained a D. Phil. In chemistry from the University of Oxford (2008), after which he undertook a post-doctorate training in Prof. Shibasaki's laboratory (2008-2009) at the University of Tokyo. After having spent his 2 years of post-doc, he joined the University of Paris-Sud and took a lecturer position in Prof. Aitken's laboratory (2009). He then joined the Institute of Cancer Research London (ICR) (2010-2015) where he worked in the Drug Discovery Unit in the group of Dr. Hoelder. Since 2016, Ludovic has worked at the French Embassy in London as scientific attaché in the area covering Physical Sciences, Innovation, Energy and Environment.

**Maria de Sousa Galito:** Assistant to the Secretary of State for the Portuguese Communities, Specialist Technician in the GSECP of the Ministry of Foreign Affairs

**Florence Geatrix:** Florence joined UCL as a Policy Adviser for the Department for Science, Technology, Engineering and Public Policy (STEaPP) in November 2018. She is interested in ensuring that policy is informed by evidence, and has a particular focus on policy areas relating to science, technology and engineering. Prior to joining UCL, Florence was a Policy Officer at the Institute of Physics. She has also previously worked in public affairs at the Royal Society of Chemistry. Florence holds an MSc in Oceanography from the University of Southampton and a BSc in Environmental Sciences from the University of East Anglia.

**Cade Hamilton:** Cade Hamilton is the Head of Operations and Governance for the Science and Innovation Team at the Foreign, Commonwealth and Development Office. Prior to this, Cade has worked at the Department for Business, Energy and Industrial Strategy and the Medicines and Healthcare products Regulatory Agency. Cade has a BA from the University of Sheffield in Economics.

**H.E. Manuel Heitor:** Manuel Heitor is minister for Science, Technology and Higher Education in the Portuguese Government since 2015. Before, between 2005-2011, he was Secretary of State for Science, Technology and Higher Education. He was born in Lisbon, in 1958 and holds a PhD from Imperial College of London in Mechanical Engineering, in 1985, and a post doctorate in University of California San Diego, in 1986. He pursued his academic career at Instituto Superior Técnico, in Lisbon, where he developed research activities in Fluid Mechanics and Experimental Combustion in the 1980s and 90s. He is full Professor of Instituto Superior Técnico – IST, the main engineering school in Lisbon, and was Deputy President of IST between 1993 and 1998. During the 90's, he developed new activities and European networks in science and innovation policy research and founded the Center for Innovation, Technology and Policy Research, IN+, at IST, in Lisbon. In 2005, this center was ranked on the Top 50 global centers of research on Management of Technology, by the International Association for the Management of Technology. He is Research Fellow at the Institute of Innovation, Creativity and Capital- IC2, of the University of Texas at Austin and founded and coordinated several international conferences related to Technology Policy and Innovation and was co-editor of the Purdue University Press book collection on Science and Technology Policy. In 2002, he was also co-founder of the international network Globelics – the global network for the economics of learning, innovation, and competence building systems.. In July 2015, he promoted the manifesto «Knowledge as Our Common Future». In 2012 he was research fellow at Harvard University.

**Luís Lacerda:** Luís Miguel Lacerda is a Research Associate at the Institute of Child Health (ICH), University College London (UCL) working in the translation of advanced neuroimaging techniques into clinical practice, in particular for paediatric neurosurgery, in collaboration with medical doctors at the Great Ormond Street Hospital (GOSH). He arrived at UCL in 2016, having achieved his PhD in Neuroimaging at King's College London (KCL) for the development of new methods to explore brain connectivity. As a complement to his academic activity, Luís has also developed efforts to use science as a means to bring different communities together, from talking to children about his own research to leading the Portuguese Association of Researchers and Students in the UK (PARSUK), an association tailored for promoting knowledge exchange amongst its members. As

President of this association he developed an interest for science policy/diplomacy and led his team to create the first Scientific Advisory Board to a Portuguese Embassy worldwide, of which he is now the Secretary. Luís has recently been awarded funding to evaluate the relevance and impact of PARSUK's Science Advisory and the wider science advice mechanisms at the Embassy of Portugal in the United Kingdom, working in collaboration with researchers at the Science Technology Engineering and Public Policy (STEaPP). Finally, Luís is passionate about bringing people together and positively impacting the world, and believes in the power of science policy/diplomacy to achieve that goal.

**Laurent Liote:** Laurent is a second year PhD candidate at UCL STEaPP, looking at the interplay between engineers, policy makers and technology in delivering the UK's net zero transition. He is currently applying ethnographic methods to uncover how engineers and policy makers interact across the UK government with a particular focus on renewable energy production modelling and standards. Prior to joining STEaPP, Laurent worked as a technology consultant for the business intelligence firm Informa, helping clients refine their IT strategies. He holds a BSc in Anthropology and an MSc in Public Policy from the London School of Economics.

**Jean-Christian Lemay:** Jean-Christian Lemay joined the Québec Government Office in London in September 2018, first as Scientist in Residence and now as Research and Innovation Attaché. There, he supports researchers and companies in Québec develop scientific partnerships with partners in the United Kingdom, Ireland and the Nordic countries. Prior to this, Jean-Christian earned his Ph.D. and M.Sc. in the Department of Chemistry at Université Laval, and completed a Joint Honours in Mathematics and Physics at McGill University.

**Frederico Lyra:** Science and Innovation Officer (SIN) at the British Embassy in Lisbon

**Diogo Martins:** Diogo Martins is a Public Health medical doctor from Portugal with extensive experience in global health and development organisations, including the United Nations (UN) and the World Health Organization (WHO). Currently holds the position of Policy & Advocacy Lead at the Wellcome Trust, President of the Portuguese Association of Researchers and Students in the UK (PARSUK), and Doctorate in Public Health (DrPH) candidate at the London School of Hygiene & Tropical Medicine (LSHTM). Interests: Sustainable Development and Planetary Health.

**Jean-Christophe Mauduit:** Jean-Christophe (JC) is a Lecturer in Science Diplomacy at University College London, Department of Science, Technology, Engineering and Public Policy since September 2019. He holds a PhD in Astrophysics from the Paris Observatory and a Master's in International Relations from the Fletcher School of Law and Diplomacy, Tufts University, Boston. He was previously a Research Scholar at the American Association for the Advancement of Science in Washington, D.C. and Associate Director at the Science Diplomacy Center at Tufts University. He has worked on European Space Agency and NASA satellite missions (Gaia, Spitzer) at the CNRS and at the California Institute of Technology and was a Project Officer for the International Astronomical Union on scientific development issues, overseeing 40 projects in 30 countries. Beyond UCL, he also serves as Senior Advisor for International Engagement for the Journal of Science Policy and Governance.

**Arthur Petersen:** Arthur Petersen (DPA PhD MA MSc FISSR FIET FRSA FHEA MAE) is Professor of Science, Technology and Public Policy at UCL and Editor of Zygon: Journal of Religion and Science. He joined UCL STEaPP fulltime in September 2014 after more than 13 years' work as scientific adviser on environment and infrastructure policy within the Dutch Government. He served as Chief Scientist of the PBL Netherlands Environmental Assessment Agency (2011–2014). Professor Petersen is also Research Affiliate at the Massachusetts Institute of Technology and Visiting Professor at the London School of Economics and Political Science (he has held the affiliations to both MIT and LSE since 2009). He has been Adjunct Professor of Science and Environmental Public Policy at the VU University Amsterdam (2011–2016), Professorial Fellow at the Dutch National Institute for Public Health and the Environment – RIVM (2016–2017) and Visiting Fellow at Osaka University (2018). In June 2019, he was elected as a Member of Academia Europaea, the European Academy of Humanities, Letters and Sciences. Professor Petersen studied physics and philosophy, obtained doctorate degrees in atmospheric sciences (Doctor of Philosophy – PhD, Utrecht University, 1999) and philosophy of science (Doctor of Public Administration – DPA, VU University Amsterdam, 2006), and now also finds disciplinary homes in science & religion and philosophy of culture. Most of his research is about dealing with uncertainty. Professor Petersen has been a member of STEaPP's Leadership Team from since he joined the Department until June 2018. In 2016–17 he was Acting Head of Department.

**Rita Goncalves De Pinho:** Rita joined as a Policy Adviser for UCL STEaPP in March 2020. She strives to make science more open, collaborative and efficient. She has a special interest in science for society and believes this can be achieved through better engagement with the stakeholders and a more frequent and healthier use of participatory approaches in the decision-making processes. Prior to joining the PIU, Rita was Research Manager at the UCL Institute of Making. She has also worked at the Scientific Advice Mechanism of the European Commission as Bluebook trainee. Rita is currently finishing a PhD in Ophthalmology at UCL. She holds an MSc in Biomedical Engineering and a BSc in Bioengineering from the University of Porto.

Between 2015 and 2017, Rita was a member of the executive committee of the Portuguese Association of Researchers and Students in the United Kingdom (PARSUK), and the chairman of its supervisory Board. She was part of the team that organised the first event to discuss science diplomacy (Luso 2017", Edinburgh – "Science Diplomacy in a Brave New World") with a diverse group of stakeholders aiming to set the foundations for the discussion of a strategy for Portuguese science diplomacy.

**Patrick Rebuschat:** Patrick Rebuschat is a Professor of Linguistics and Cognitive Science at Lancaster University, where he also serves as Director of Internationalization at the Faculty of Arts and Social Sciences. Patrick has received his PhD from the University of Cambridge and BA from the University of Lisbon. Prior to joining Lancaster, he has taught at Georgetown University, Harvard University, the University of California, Santa Barbara, and the University of Göttingen. He has also enjoyed spending a semester as a Visiting Researcher at the University of Auckland. He is interested in the cognitive and neural basis of language, i.e. how the mind/brain acquires and processes language(s). He is particularly interested in implicit learning, statistical learning, and bilingual cognition. He is also a Distinguished International Professor at the LEAD Graduate School, University of Tübingen, and Director of the Heritage Language Consortium, a strategic partnership that brings together six leading universities and the Portuguese Ministry of Foreign Affairs. He also coordinates the NOVA Lancaster partnership and the SLLAT Research Group. Finally, he has been elected President of the first Scientific Advisory Board to a Portuguese Embassy worldwide, initiative led by the Portuguese Association of Researchers and Students in the UK (PARSUK).

**Miguel Rodrigues:** Miguel Rodrigues is a Professor of Information Theory and Processing at University College London; he is Co-Founder and Director of the MSc in Integrated Machine Learning Systems at University College London; and he is also a Turing Fellow with the Alan Turing Institute — the UK National Institute of Data Science and Artificial Intelligence. Dr. Rodrigues's research lies in the general areas of information theory, information processing, and machine learning. His most relevant contributions have ranged from the information-theoretic analysis and design of communications systems, information-theoretic security, information-theoretic analysis and design of sensing systems, and the information-theoretic foundations of machine learning. Dr. Rodrigues also consults widely in the area of machine learning and artificial intelligence technologies with government institutions, funding agencies, and industry. He is also a member of the FCT-PARSUK "Scientific Council" advising Portuguese Government Institutions on research strategy and opportunities.

**George Salter:** George is a first year PhD student at UCL Department of Science, Technology, Engineering and Public Policy (STEaPP). His research will be broadly focussed on science diplomacy, and specifically on the return states see from their investment in science attaché networks. Science and politics are not necessarily straightforward partners and so the key question is what kinds of value these networks generate and how does this sit in relation to the broader geopolitical context states exist in and contribute to. Much of the work on science diplomacy to date has acknowledged the competitive-collaborative tension at the heart of this concept; this dynamic presents an interesting research challenge and George intends to address it from the perspective of political sociology. His thesis will ideally have policy implications for states already invested in science attaché networks and other countries looking to invest in science as a foreign policy instrument. George originally studied Philosophy and Politics at the University of Leeds before undertaking an MA in Publishing here at UCL where he focussed on scholarly communication in the STEM subjects. Following stints in marketing at SAGE and Springer Nature he worked in Imperial College London's Enterprise division.

**Ine Steenmans:** Ine is a Lecturer in Futures, Analysis and Policy at the UCL Department for Science, Technology, Engineering and Public Policy. Her work focuses on the effectiveness of different analytical tools in the design of public policy. She specialises in methods and processes used to address policy challenges that span multiple sectors and longer time horizons. As decision support research has historically suffered from a disconnect between theory and practice, all of Dr Steenmans' work is needs-driven and undertaken in partnership with policy practitioners. She has special interest in supporting analytical innovation that fits the typical resource-constrained and time-pressured contexts of policy work. Dr Steenmans joined UCL in 2017 and previously worked for the UK Government Office for Science. She is Chair of the UK Operational Research Society's Public Policy Design Special Interest Group, and Adviser to the UK Research Institute for Sociotechnical Cyber Security. Ongoing and recent projects have included the use of systems mapping, evaluation methods, scenario development, futures literacy, and mission scoping tools across policy areas of healthcare, industrial decarbonisation, built environment, space and cybersecurity. These projects are undertaken in direct partnership with the Lloyds Insurance, UNDP, UKRI, UK Cabinet Office's Policy Lab and the UAE Office of Advanced Sciences. She obtained her MEng in Civil and Environmental Engineering from Cambridge University, followed by an MSc in International Planning at the Bartlett School at UCL, and an EPSRC-funded Engineering Doctorate (EngD) at the UCL Centre for Urban Sustainability and Resilience. Her doctoral research focused on the real-world use of qualitative Operational Research methods within strategic infrastructure planning practices.

**Uta Steiger:** Uta Staiger has directed the UCL European Institute since 2010, creating opportunities for research and teaching on Europe across the disciplines, developing partnerships with external stakeholders, engaging policy-makers and new publics. As UCL's Pro-Vice-Provost (Europe), she also plays a strategic role shaping UCL's engagement with European research and higher education, as well as Brexit mitigation planning, and acts as ambassador for UCL's work on the continent. Uta is associate academic staff with the Comparative Literature Programmes in UCL's School of European Languages, Culture and Society, and offers tutorial teaching in UCL Laws. Her research interests are broadly in modern European thought, culture, and politics. Current interests include crisis, stasis and decisionism; Hannah Arendt and virtuosity; mourning and the law in contemporary philosophy; and cultures of international negotiation. Uta is a member of the EU Advisory Board of the Russell Group and the Advisory Board of the Scottish Council on European Relations; and a Fellow of the Royal Society of the Arts. She holds a PhD from the University of Cambridge, gained with a scholarship from the Gates Cambridge Trust. She was also educated at the Universities of Edinburgh and Konstanz (Germany), as well as at the Universitat de Girona during a stint working for the Barcelona-based think tank Interarts.

**Olivia Stevenson:** Dr Olivia Stevenson leads UCL Public Policy. She generates opportunities to improve the quality of engagement and knowledge exchange between academic research and public policy and manages strategic initiatives. Olivia is a co-founder of the Universities Policy Engagement Network (UPEN) and is involved in their Area of Research Interest and Equalities and Diversity work. Olivia has delivered a range of internationally recognised high impact research projects, published widely, most recently on structural and relational inequalities. She supported the successful development of an £10m award to explore Capabilities in Academic-Policy Engagement (CAPE) and is involved in its delivery. Olivia has a PhD in Social Geography from the University of Leeds.

**Chris Tyler:** Chris is Director of Research and Policy in University College London's Department of Science, Technology, Engineering and Public Policy (UCL STEaPP), where he leads STEaPP's policy programmes and explores how policy makers use scientific evidence. Prior to joining STEaPP, Chris spent five years as Director of the UK's Parliamentary Office of Science and Technology (POST) and before that was the first Executive Director of the Centre for Science and Policy (CSaP) at the University of Cambridge. Chris has a degree in anthropology from the University of Durham and a PhD in biological anthropology from the University of Cambridge. He sits on the Board of the Campaign for Social Science and the Council of the Royal Anthropological Institute.

**Remy Twiringiyimana:** Remy is a PhD Candidate in Science Technology Engineering and Public Policy (STEaPP) at the University College London (UCL). He is researching how universities interact with other actors in emerging innovation systems. His research focuses on systems theory and related conceptual frameworks, and how these concepts are useful to enable the framing and governance of science, technology and innovation policy. He studied electrical and electronic engineering at University of Strathclyde, graduating in 2009. Prior to starting his PhD, he served as Advisor to the Minister of Education in the Government of Rwanda for 5 years. Previously, he worked in the ministry of education as Director of Research and Development (R&D) for 5 years. Prior to joining the ministry of education in 2010, he worked as Assistant Lecturer in electronics and telecommunications at former Kigali Institute of Science and Technology (KIST), now the University of Rwanda.