SENET-HUB
SINO-EUROPEAN HEALTH NETWORKING HUB

# Report on the 1st SENET Research and Innovation Expert meeting

23rd June 2020

*This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 825904.*

# Introduction to the meeting

## Background

The objective of the SENET Research and Innovation Expert Group Meetings are fourfold:

(1) Define common research priorities between China and the EU.
(2) Develop recommendations for new programmes and funding schemes.
(3) Explore solutions how tackle barriers to transnational research collaboration and mobility.
(4) Identify good practice for peer to peer learning and exchange.

The outcome of the expert group consultations will be the basis for the creation of an action plan proposal to be communicated and shared with policy makers, funding agencies and program managers in the EU and China.

## Research and Innovation Experts

The main participants were the invited Research and Innovation Experts. From the 13 experts who confirmed participation (see annex) 11 attended. As the objective of the meeting was to match research priorities between Chinese and European researchers and to work out recommendations for facilitating collaborations, experts from both China and Europe were invited. John ZHANG, Dimitri LAVILLETTE, and Pia COSMA have a Chinese affiliation and Xianghua LI is a Chinese postdoc working in Spain and will start her own research group in China in fall this year. Since Dimitri LAVILLETTE could finally not attend this meeting, only three out of 11 experts were representing the Chinese research and innovation system. The meeting proceedings will be circulated amongst additional experts and follow-up meetings will be organised to increase the number contributing experts.

## Introduction to the meeting

The project officer from the European Commission Rosanna D'AMARIO kick-started the meeting by sharing the objective of the EC on why the SENET and another sister project was funded. In a nutshell, the EC wanted to understand why the participation of Chinese organisations in EC funded collaborative projects dropped during the starting period of the new framework programme H2020. If it is simply a reason of the changed funding scheme, since costs of Chinese researchers need to be covered by the Chinese funder MOST, or whether it is possible to stimulate the Chinese participation in the health part by other means. Afterwards, the SENET coordinator Hicham ABGHAY introduced the SENET objectives, notably it's stakeholder engagement activities of the project to the participants.

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# Core of the meeting

## Benefits of Sino-European collaborations presented by the Experts

Four pre-selected participants were invited to present their research project that include Chinese-European collaborations. The speakers were chosen in the way to reach a maximal diversity related to nationality, country of host institution, gender, and research topic:
**Jean-Claude MANUGUERRA** (m), Institut Pasteur, France. He presented the infectious disease related projects EpiSARS (EC funded, 2004-2007) and RIVERS (EC funded, 2007-2010) and his current work on Risk Assessment for Urban Emergence of Underestimated Arboviruses.
**Pia COSMA** (f), Centre for Genomic Regulation (CRG), Spain & Guangzhou Institutes of Biomedicine and health, Guangzhou Regenerative Medicine and Health - Guangdong Laboratory (GIBH/GDL), China. She presented her work on regenerative medicine and the newly launched CRG-GDL International PhD Programme that is funded by the Chinese partner.
**John ZHANG** (m), Med Valley Beijing, China. He presented the Sino-Israel Government Co-Funding Program that funded the collaboration of five companies (two Chinese and three Israeli) leading to three new products: Portable Urine Analysis Device, Intestinal Irrigation Dialysis and GI Motility Monitoring Device for ICU Patient, Solution suitable for Automatic Peritoneal Dialysis and POCT intelligent management at home.
**Dinja OOSTERHOFF** (f), Institute for Translational Vaccinology, The Netherlands. She presented the vaccine development services and highlighted the project of Sabin Inactivated Polio Vaccine (sIPV) technology transfer to China for clinical studies (request by WHO).
The presentations were shortly outlining the research projects that involved European-Chinese collaborations and highlighted the benefits and challenges of the collaboration. The following list summarises the **benefits of Sino-European collaborations** as presented and discussed after the presentations:

- China has a growing economy and a research environment with a large number of investments and highly motivated young talents.
- China is a site of untapped opportunities for collaboration with a rich cultural background.
- Chinese government reinforced their efforts to open-up for introducing and welcoming more international (including European) companies to China.
- Existing industrial and commercial ties between China and other countries is also facilitating research collaborations.
- China is primarily keen on technology solutions and research with an applied scope, compared to basic research. Still, collaborations in research and development is very welcome. Currently, there is a growing start-up community in technology parks, who are interested to collaborate internationally on translational research and technology development projects. For example, China appreciates Europe's expertise in algorithms for smart technologies.

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- China has many large research facilities that are of interest to European researchers, also because of competitive prices.
- Vaccine technology transfer from Europe and China

  We discussed cases where vaccine technology at different stages of development is transferred to international partners including China (biotech, pharma, and clinical trial management companies). The recipients of the technology subsequently perform the scaling-up, the production of Clinical Trial Material (CTM), and testing in clinical studies. For clinical studies in China it is required that the CTM is produced in China. Multiple Chinese companies are actively scouting for new vaccines as they have the capacity to produce vaccines under GMP but no large R&D facilities. There seems to be less interest from Chinese companies in collaborating on vaccine concepts that are in a really early stage of development.
- Studying pathogens needs collaboration between the countries affected by a potential pandemic. Many pathogens, including emerging infectious diseases and others, have shown to originate in Asia, so having collaborators from this region is of interest for many reasons.
- Wuhan has strong connections with France, common industrial factories, but also in the domains of mathematics and biology. Wuhan institute of Virology has been a critical collaboration partner for Institut Pasteur France. The Institut Pasteur Shanghai was created as a follow-up of the ongoing collaborations between Institut Pasteur France with China. It is now intensifying already existing collaborations and creates new opportunities for collaborations with stakeholders in China, especially in Shanghai.

# Identification of bottlenecks for Sino-European research collaborations

The following round table discussion on bottlenecks in Sino-European collaborations served as an icebreaker to ease the interaction between experts, while also providing important insights on how to potentially overcome them. The identified bottlenecks are related to 8 different topics: (1) regulations, (2) network, (3) communication, (4) funding, (5) knowledge exchange, (6) dependency on authorities, (7) political interference in implementation research, and (8) infectious disease specific bottlenecks.

## 1. Regulations

**Bottleneck**: Regulations and bureaucracy related to ethical restrictions and biological sample shipment (especially for human material); not specific for China but for many countries. **Solution**: Anticipation is most important, to be informed about all relevant regulations and plan much ahead. It is advised to get familiar with regulations and include the time needed for it in the time plan of the project.

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**Bottleneck**: Heavy regulations on Chinese and European sides for the transport, the possession, and the use of highly contagious pathogens. Research with pathogens has the potential for dual research of concern, such as development of biological weapons. The Australia Group maintains a list of pathogens that need export controls. Not specific for China but for most countries.
**Solution**: In some cases, the regulations make the exchange impossible.

## 2. Networks

**Bottleneck:** Finding the right collaborator; Identification of networks; disciplinary silos.
**Solution:** Know exactly which expertise you look for and seek help to identify the right partner. Initiatives such as ENRICH, EUPIC, University-hubs for strategic partnerships, or the diplomatic networks such as scientific attaché at the embassy can be helpful. Though, currently in China, the commercial interest in business arrangements seems to be bigger than for research. The relationship needs to build on trust. Therefore, it is good if the contact can be facilitated by an institution both parties trust.
Supporting bottom-up approaches from communities that use local and personal connections to expand. This was done during the Covid-19 pandemic and led to international collaborations including Europe and China (40 countries and 200 volunteers; https://covid19alliances.com/).
Use the social media tool Wechat to build network in China.

## 3. Communication

**Bottleneck:** To a certain extent language barrier.
**Solution:** Some experiences show that motivated students learn very quickly English when they need to speak it regularly, e.g. in the case of an English-speaking supervisor.
Increase the contacts with collaborators by having more meetings through the use of modern video-conferencing tools.

## 4. Funding

**Bottleneck:** China provides a substantial amount for research funding, including international collaborations. Nevertheless, in most cases only costs on Chinese side can be covered and these programmes are not known to EU collaborators. Furthermore, European collaborators need to have their own funding. Including China as a partner in collaborative research proposals is limited to selected calls in the current European framework programme H2020. In consequence, the Chinese collaborator needs to find the right funding scheme from Chinse funders. The time-consuming grant application process with two independent proposals, without alignment of timeline, evaluation criteria, and proposal selection, is not engaging for Sino-European collaborations.
**Solution:** The funding mechanisms in Europe and China for collaborative research shall be aligned and made more transparent and understandable to all parties. Some European National funding bodies support explicitly collaboration with China through bilateral agreements. Providing grants on European level that fund collaborative projects with China through a single application process and that cover costs of both sides, would ease collaborations substantially.

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**Bottleneck:** Funders do not allocate sufficient resources for social science around global health. Funding streams especially in China have a very limited disciplinary focus matching strategic goals of the country (natural science and technology development).
**Solution:** Not discussed

## 5. Knowledge exchange

**Bottleneck:** The collaboration is often rather of cooperative nature based upon divergent interests and framework conditions. The work is distributed and divided in packages and individual tasks amongst the collaborating laboratories. A real collaboration that requires intensive exchange of knowledge and expertise, creative brainstorming, and joint experiments is not taking place.
**Solution:** Intensive the communication (e.g. more regular video conferences) and mobility between the teams, facilitating knowledge exchange and real collaboration.

## 6. Dependency on authorities

**Bottleneck:** The research priorities in the respective research institutes impedes collaboration on an international level of group leaders or associate professors and restricts the independency to choose which projects to work on or with which group to collaborate with.
**Solution:** Not discussed.

## 7. Political framework for implementation research

**Bottleneck:** China has become a strong player in the global arena, in economy as well as in research and innovation. European capacity building in China in the past, such as staff exchange, helped to generate trust between institutions and long-term collaborations. Given the strength China has gained, new constellation of an even partnership requires a redefinition of international cooperation and collaboration.
**Solution:** Further discussion is needed in future.

## 8. Infectious disease specific bottlenecks

**Bottleneck:** In the field of infectious diseases, the sudden occurrence of pandemics is a challenge, as the experts in the field are recruited to fight the pandemic and thus are not available for ongoing research projects. The projects cannot advance at the planned speed.
**Solution:** Extend the projects in time is necessary.

**Bottleneck:** The fight of a pandemic and the related infectious disease (and fight of the re-occurrence of the pandemic) is accompanied by a rapid evolution of knowledge. And the disease might already be elimination while studying it.
**Solution:** During pandemics it is important to communicate findings as early as possible before publishing it in a peer reviewed journal with long processing times. A project related to fighting a pandemic might need a reorientation of project objectives due to new findings. The same is true in case the disease has already been eliminated and no new cases are available for the project's study.

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One topic that is often discussed in the research community is the challenge to clarify upcoming IP issues amongst European and Chinese partners. However, in this meeting it was not confirmed even when the moderator was pointing at this topic.

# Matching Health Research and Innovation priorities in China and Europe

The presentation of the scoping paper "Review on health research and innovation priorities in China and Europe" by Johnny Pan bridged the discussion from bottlenecks to the vision for the future. In the subsequent roundtable discussion the experts were asked where they see potential synergies between China and Europe to advance health research and global challenges. Table 2 summarises the outcome of the discussion and presents the 11 identified research topics that the experts considered relevant for exploiting best Sino-European research collaborations.

Besides specific research fields such as emerging pathogens, one health, antimicrobial resistance, and aging, higher-level topics where suggested as a basis for defining more concretely the objectives of a Sino-European collaboration and for facilitating them more effectively. It was discussed intensively that Sino-European collaborations in scattered research topics will have limited impact on solving global challenges. While defining only one mayor global challenge on which China and Europe utterly agree to tackle in collaboration by funding related research projects, including all relevant disciplines, might have a bigger impact.

**Table 1:** Identified research topics relevant for future Sino-European research collaborations

| | |
|---|---|
| **1** | **Topic: Infectious disease / Emerging pathogens** (including all relevant disciplines, such as epidemiology and basic research in immunology, but also social sciences).<br><br>**Arguments:** Pandemics are recurring phenomena that can affect everybody depending on the spreading of the pathogens; new pathogens will occur. |
| **2** | **Topic: Infectious disease / One health research**<br><br>**Arguments:** Many, if not most emerging pathogens are of zoonotic origin.<br>Health of animals and human health is related.<br>In China the approach of one health is not very active yet. |
| **3** | **Topic: Infectious disease / Antimicrobial Resistance (AMR): better use and new drugs**<br><br>**Arguments:** Urgent issue globally. Resistant microbes do not know borders, and policy makers from different regions need to agree on policies. Collaboration in monitoring will help for modelling of causes and make reaction faster. |
| **4** | **Topic: Aging** (including brain connectivity and neuro-degenerative diseases)<br><br>**Arguments:** Rapidly aging societies both in EU and China. |

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| 5 | **Topic: Health research with interdisciplinary research approach** (including social sciences).<br><br>**Arguments:** Higher impact on health. |
| 6 | **Topic: Strategic collaborations for global challenges.** Exchange on policy making level about what kind of collaborations are wanted: strategic level collaborations vs. "de-centralised" independent collaborations. Which funding mechanisms are effective for real collaboration between China and Europe? What do policy makers and funders expect from Chinese-European collaborations?<br><br>**Arguments:** If strategic goals of the countries and global challenges should be addressed by collaborations, EU and China need to come together and find mechanisms to achieve understanding and overcoming potential obstacles.<br>The involved research systems and stakeholder are so diverse that the identification of a priority topic is not enough for effective collaboration. It will need a serious commitment from both governments to collaborate. |
| 7 | **Topic: Health Policy and Systems research (HPSR).** Focusing on the upstream aspects of health, organization, and policies, rather than clinical or preventive services or basic research.<br><br>**Arguments:** HPSR can support the development of effective collaboration between China and Europe. So far public funds are mostly available for technological innovation as support for biomedical industry, drug development, diagnostics etc. This kind of research would probably also happen without public funding. However, it does not contribute so much to global public health and wellbeing. If we want to increase wellbeing, we need to invest more in health systems approaches, to reach the people, which is not taken up by private industry. |
| 8 | **Topic: Mutual learning between EU and China.** What are the lessons learned and experiences in digital health, disease prevention, coping with aging of the society?<br>How can health issues be tackled better by collaborations between academic research and industry?<br><br>**Arguments:** Learning from each other and sharing experiences between China and Europe could be one way of starting collaboration. Subsequently, common priorities could be identified, and further collaborations are initiated bottom up. |
| 9 | **Topic: Capacity building in public health, health policy, health management in health systems.**<br><br>**Arguments:** Tbd: Who is the target of the capacity building? |
| 10 | **Topic: Global Health.** Mutual learning and development of joint effective strategies for Global Health (bringing innovations from EU and China to LMICs, e.g. low-cost technology).<br><br>**Arguments:** China and Europe are both extremely interested in this topic, so synergies could be exploited; Global public health and well-being are currently not much covered in but do depend strongly on public funding. |

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| **11** | **Topic: Health management.** Hospital management and access to care (China is screening of patients starting at first level hospitals to third level hospitals).<br><br>**Arguments:** not discussed. |

# Conclusions

The need for explicit strategies and structures for facilitating collaborative research between EU and China is the most important recommendation by the SENET experts but probably also the one with the biggest impact. It will require the Chinese and European governments and policy makers to agree on the global challenge they want to tackle together in collaboration and to engage their researchers with true commitment providing tailored collaborative research institutes, programmes, and funding calls.

# Outlook

China and Europe invested a lot of money into COVID19 related research. But first analyses show that the research in China and Europe were and are still not aligned (referring to one of the experts), so synergies could not be used with maximum efficiency, and similar work was duplicated. Antimicrobial resistance research is another example which is relevant since a long time, but research does not seem to be aligned. **If China and Europe are seriously interested to tackle this issue what would be working together in a coherent way look like? This could be a question to be addressed in one of the following Policy Dialogue meetings.**

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# Annex 1: AGENDA

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## RESEARCH & INNOVATION EXPERT MEETING

**23rd of June 2020 Virtual meeting**

**9 am – 12:15 pm (CEST, Cenral European Summer Time)**
**3 pm – 6:15 pm (CST, China Standard Time)**

***Connection and registration 9:00-9:15 am CEST / 3:00-3:15 pm CST***

*9:15am - 9:30am CEST* ***SENET INTRODUCTION AND WELCOME***
*3:15pm - 3:30pm CST*

**Rosanna D'AMARIO**, *European Commission and* **Hicham ABGHAY**, *SENET coordinator at Steinbeis 2i GmbH*

*9:30am - 10:30am CEST* ***SENET RESEARCH & INNOVATION EXPERT GROUP***
*3:30pm - 4:30pm CST*

*Introduction of all participating experts (moderator: Sonja Reiland, Centre for Genomic Regulation)*

*Selected presentations on Sino-European collaborations in health research and Innovation highlighting benefits and challenges. (10 min per speaker + 5 min Q&A):*

**Jean-Claude MANUGUERRA**, *Research director and Head of the Unit, Institut Pasteur, France*
**Pia COSMA**, *Research group leader, CRG, Spain & GRMH–GDL, China*
**John ZHANG**, *Director of International Partnership, Med Valley Beijing, China*
**Dinja OOSTERHOFF**, *Programme Manager, Intravacc, Netherlands*

***Coffee break 10:30-10:45 am CEST / 4:30-4:45 pm CST***

*10:45am - 11:05am CEST* ***ROUND TABLE DISCUSSION I: COMMON CHALLENGES AND WAYS TO***
*4:45pm - 5:05pm CST* ***OVERCOME THEM***

*Moderated by* **Svetlana KLESSOVA**, *GAC Group and* **Sonja REILAND**, *CRG*

*11:05am - 11:20am CEST* ***REVIEW ON HEALTH RESEARCH AND INNOVATION PRIORITIES IN***
*5:05pm - 5:20pm CST* ***CHINA AND EUROPE***

**Johnny PAN**, *Sociedade Portuguesa de Inovação*

*11:20am - 12:10pm CEST* ***ROUND TABLE DISCUSSION II: VISION FOR FUTURE COLLABORATION***
*5:20pm - 6:10pm CST* ***OPPORTUNITIES***

*Moderated by* **Svetlana KLESSOVA**, *GAC Group and* **Sonja REILAND**, *CRG*

*12:10pm - 12:15pm CEST* ***CONCLUSION AND CLOSING***
*6:10pm - 6:15pm CST*

**Hicham ABGHAY**, *SENET coordinator at Steinbeis 2i GmbH*

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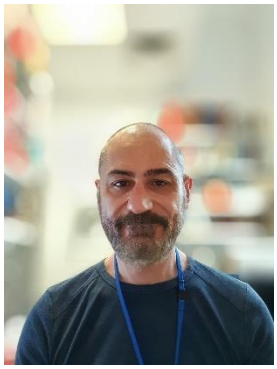
# Annex 2: Invited Experts



**Jean-Claude MANUGUERRA**

*Research director and Head of the Unit "Environment and infectious risks" (link) and of the laboratory for "Urgent Response to biological Threats" (link);*

*Institut Pasteur, France*

*Collaborative projects with the Wuhan Institute of Virology and the Institut Pasteur of Shanghai.*

**Pia COSMA**

*Research group leader on "Reprogramming and Regeneration" (link)*

*Centre for Genomic Regulation (CRG), Spain & Guangzhou Institutes of Biomedicine and health, Guangzhou Regenerative Medicine and Health - Guangdong Laboratory (GIBH/GDL), China*

*Dual affiliation with Spanish and Chinese Research Institutions.*

**John ZHANG**

*Director of International Partnership*

*Med Valley Beijing, China (link)*

*Joint R&D between companies from China and Israel under the co-funding program between Beijing Science committee and Israel Innovation Authority*

**Dinja OOSTERHOFF**

*Programme Manager*

*Institute for Translational Vaccionology (Intravacc, link), Netherlands*

*Transfer - on request of WHO - of a technology for the manufacture of inactivated polio vaccine to Chinese partners.*

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**Julie BALEN**

*Researcher and Lecturer (link)*

*Sheffield University, UK*

*PhD on NTDs in Hunan, China, and co-Investigator in a China-UK Helminth Research Collaboration*

**Peter STEINMANN**

*Expert in Epidemiology and Public Health (link)*

*Swiss Tropical and Public Health Institute, Switzerland*

*PhD and Post-doc research stay in China (affiliation with the Chinese research institution)*

**Dimitri LAVILLETTE** (consulted in writing)

*Arbovirus interspecies transmission and antiviral therapies (link)*

*Institut Pasteur Shanghai, Chinese Academy of Sciences (IPS-CAS), CHINA*

*Partner in the EC/MOST funded ZIKAlliance project and the EC funded project RECoVER, that aims to fight against SARS*

**Gerald BLOOM**

*Research Fellow*

*Institute of Development Studies, UK (link)*

*UK-China Hub on antibiotic drug discovery, which is supported jointly by British and Chinese funding agencies.*

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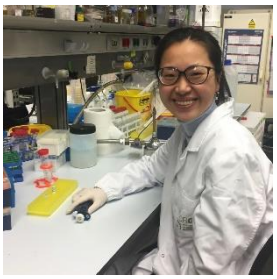
**Lewis HUSAIN**

*Honorary Associate*

*Institute of Development Studies, UK (link)*

*Investigation of China's changing engagement in global health, including innovation and involvement in the production of new antimicrobial agents, in collaboration with UK and Chinese partners.*

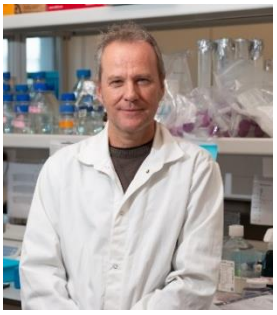


**Xianghua LI**

*Postdoctoral researcher, Lehner Group (link)*

*Centre for Genomic Regulation (CRG), Spain*

*From September on group leader at Zhejiang University, China (ZJE-UoE Institute, link)*



**Wolfgang LINK**

*Senior investigator and group leader (link)*

*Spanish National Research Council/Instituto de Investigaciones Biomédicas "Alberto Sols", Spain*

*Oncology expert interested in collaboration with Chinese scientist on biomedical research, drug discovery and repurposing.*

**Alberto SANNA** (consulted in writing)

*Director of Center for Advanced Technology in Health & Wellbeing (link)*

*Hospital San Raffaele, Milano, Italy*

*Coordinator of the PIPS project with Chinese partner (Healthcare delivery to the European Public by means of creating a new Health and Life Knowledge and Services Support Environment)*

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**Pascal VINCELOT**

*Director of Operations*

*Fondation Mérieux (link)*

*Pharmacist . Immunology- Parasitology expert*

*Has spent 12 years in China as General Manager of bioMérieux China, Shanghai*

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