

The U.S.-Japan Online Symposium “Economic Security & Export Control Issues for International Research Cooperation” was held on September 29. There were strong opinions that international joint research should be conducted, especially with the U.S., in order to promote effective research and development. On the other hand, taking into account the characteristics of advanced critical technologies, which should be subject to export control and certain regulations from the perspective of economic security, the importance of balance was discussed as to how the differences in legal systems between countries should be harmonized to protect a free research environment.

In his opening remarks, Professor Hideaki Shiroyama, Director of the Institute for Future Initiatives, the University of Tokyo noted that it’s necessary to avoid falling into the “trap of self-sufficiency,” in other words trying to carry out all aspects of research and development within one country, as research and development are inherently oriented toward open international collaboration, and added that the symposium should provide a forum for discussing the future direction of joint research between the U.S. and Japan based on recognition of the differences in legal systems and actual problems faced by researchers engaged in joint research. Mr. Tom Hines, Counselor for Economic and Scientific Affairs U.S. Embassy in Tokyo commented that, while the U.S.-Japan alliance is stronger than ever before and sound competition and technological innovations are occurring on the frontlines of research, it is also a fact that, in the reality of today’s world, there are people who seek to take advantage of and abuse the open environment for international joint research and development, and it is therefore important to deal with such risks and build a robust system for joint research. Mr. Tomoo Shibano, Partner Attorney of TMI Associates, who presided over the symposium expressed his hope as a global law practitioner that awareness of the frontline researchers be shared and discussed.

Session 1: Report on “Economic Security, Integrity & Security, Export Control” for Research Cooperation between U.S. and Japan

Session 1 featured presentations by experts from Japan and the U.S. on their respective views of international research collaboration within the framework of economic security.

The first speaker was Cabinet Councillor Yoichi Iida of the National Security Secretariat, Government of Japan. He explained the situation in Japan and the ongoing considerations towards the revision of its security strategy. Noting that science and technology are not only essential for national security and defense but their importance is also increasing as effective countermeasures against threats like global pandemic of infectious diseases, natural disasters, climate change, and large-scale cyberattacks, Iida described how governments are actively promoting large-scale research projects to pursue science and technology. He pointed out the need to strategically promote international technology cooperation in order for a nation to efficiently drive research and development to secure its technological independence and achieve competitive advantage and essentiality, while avoiding technology leakage and exploitation, and emphasized the need for “efforts to thoroughly understand and bridge or overcome differences in the legal and governance systems with the partner country.”

With the enactment of Japan’s Economic Security Promotion Act this May, regulations and support for scientific research are being organized within the framework of economic security. As one example of such support, it was decided in September that the 250 billion yen earmarked for the Program for Developing Economic Security Critical Technologies (K Program) would be focused on fields including ocean, space, airports, cyber, biotechnology, quantum, and artificial intelligence. On the regulatory aspect, the government is preparing a patent non-disclosure system for inventions that are sensitive in terms of national security. Citing these examples, Cabinet Councillor Iida stressed that it’s needed to respond to the complexity of the global environment and changes in the socio-economic structure while maintaining the principles of free and open economy, and concluded, “I am

confident that we can find a way to solve the problems we face through science and technology and international cooperation.”

The next speaker was Acting Deputy Assistant Secretary, Gonzalo Suarez of the Bureau of International Security and Nonproliferation, U.S. Department of State. He gave an overview of the export control measures his bureau is implementing with a focus on national security. Admitting that balancing national security and the development of economy and commerce is a difficult challenge, he pointed out that without national security, there is no economic security, and export control is one of the important tools to achieve the balance. As an example, Suarez referred to the export control imposed by the international community including Japan and the U.S. in response to Russia’s Ukraine invasion and stated that it was expected to weaken Russian economy slowly but steadily by cutting off access to key technologies.

Problems like climate change, energy insecurity, and food shortage that cannot be solved by the efforts of a single country can only start to be solved through international collaboration and interaction of global and diverse perspectives. Emphasizing the importance of collaboration, Acting Deputy Assistant Suarez noted, “to identify threats and derive solutions, it’s necessary to tackle our problems together with our international partners, or else we will all fall down together.” He made a point that Japan and the U.S., who have led the world in technological innovation, should take the initiative in promoting multilateral dialogue to share and balance the values of research integrity and research security; research integrity is to maintain open science and the values that support sound and fair competition without hindering research, and research security points to taking actions to avoid risks to national security.

In response to the presentations by the two experts, questions were raised by the audience regarding the impacts of U.S.-Japan research partnership on emerging countries. Both Cabinet Councillor Iida and Acting Deputy Assistant Suarez answered that technologies born from joint research between the U.S. and Japan would be beneficial to other countries as well, and in addition, pointed to the possibility of improving the global research environment by widely sharing common values such as research integrity and security that underpin the sound research environment of the two countries.

Session 2: Export Control System and Integrity & Security Management from the Perspective of Research Cooperation between U.S. and Japan

Session 2 dealt with more specific issues concerning research integrity and security.

The first speaker, Dr. Osamu Aruga, Director for International Affairs of the Secretariat of Science, Technology and Innovation Policy, Cabinet Office gave a presentation titled “Discussions on Research Security and Integrity in the G7” which started by presenting Japan’s initiatives on research integrity, followed by an introduction to the discussions taking place in the G7. Dr. Aruga went on to say, “Japanese researchers too are required to autonomously ensure soundness and integrity of research to promote international cooperation on research and development. With this in mind, the Government set out a policy in April last year to require transparency and accountability of Japanese researchers and research institutions. Unlike export control based on law, this policy demands researchers and research institutions to appropriately disclose information based on their own independent decision. This is an initiative that follows in the footsteps of the U.S., taking diversity of scientific research into consideration.”

He also explained some other recent developments in the G7: that working level talks are being held by vice-ministerial level government officials in various working groups under the G7 Science Sherpa Meeting, and a working group on research integrity was established last year; that an online academy is being developed to put together the basic principles for realizing research collaboration

and to spread a common awareness among researchers on research integrity and security; and that a report was compiled this summer outlining research security as a practice to protect the research community from international risks and research integrity as a set of values to be adhered to. Dr. Aruga then concluded, active discussions continue to take place as “it is extremely important that governments share a common awareness and harmonize policies not only to prevent technology leakage but also to freely pursue international collaboration among allies and like-minded countries with ease of mind.”

The second speaker was Mr. Tobin Smith, Vice President for Science Policy & Global Affairs, Association of American Universities (AAU), who gave a presentation titled “Importance of the Fundamental Research Exception in the U.S. Research Program.” The debate on how to balance between open science and national security in the U.S. goes back to the Cold War era. A broad framework on this matter was established with the National Security Decision Directive No. 189 (NSDD-189) issued by the Regan administration to protect research and prevent the leakage of military technologies from colleges, universities, and laboratories. Vice President Smith explained that federally funded fundamental research should basically be conducted freely and remain unrestricted to the maximum extent possible, and thus the directive sets down that the need for information control including confidentiality classification was to be determined by the responsible federal government agency.

The U.S. currently has four types of export control, but it is important that fundamental research is exempted from their application. The results of fundamental research are exempted from export control if the research is intended for publication and broadly sharing with the scientific community. Vice President Smith noted that because of this fundamental research exemption, researchers do not need to apply for an export license even when students and researchers of foreign nationality are participating in the research project and that it is “very important for ensuring the principle of academic freedom, one of the most fundamental principles of colleges and universities and for free exchange of ideas to further build on science,” and added, “many universities tend to avoid engaging in research projects that involve export control or restrictions on publication.”

On the other hand, there is a trend that seeks to expand the scope of export control to protect key technologies, leading to a serious debate in the U.S. Vice President Smith stressed that it’s necessary for us to seriously think about research integrity to find the right balance between science and national security in a reality where there are people who try to abuse science.

The third speaker of Session 2 was Professor Toshiya Watanabe of the Institute for Future Initiatives and Vice President of the University of Tokyo. In his speech titled “Challenges in the Operation of Japan Export Controls for U.S. Japan Research Cooperation” he shared some specific challenges based on his own experience engaging in university export control compliance. As an example, that left a particularly strong impression, he cited the research findings on highly virulent avian influenza virus published in 2012. It was a joint project between the University of Tokyo and the University of Wisconsin System in the U.S. which led to the finding that the virus may acquire human-to-human transmissibility through genetic modification. The research report published in the U.S. was soon banned from public access due to concerns over misuse in bioterrorism, but public access was redeemed based on the decision that the benefits of publication (such as for vaccine development) outweighed the risks. Looking back, Professor Watanabe remarked, “this incident renewed my awareness of the importance of information control” and how information should be shared in the scientific community.

Professor Watanabe explained that the University of Tokyo engages in research projects (such as its joint research with IBM on quantum computers) that require not only adherence to Japanese export control but risk management in line with U.S. regulations and has therefore established a committee for the control of specific advanced technologies in 2020 to address these issues. Although research

collaboration with overseas partners is indispensable to continue to produce results at the frontline of scientific research, there are differences in the regulatory systems and how they are operated depending on the country. He emphasized that it's required to "creatively seek solutions based on recognition of such differences."

In response to the presentations by the three speakers, a question was raised from the audience regarding the definition of "research integrity." Vice President Smith answered that around 20 years ago, the concept was originally related to the attitude of researchers and prevention of research misconduct but evolved over time to include a wider range of concepts like research security and new research ethics as well as how to engage in overseas research cooperation. In response to a question about whether there are cases where cooperation between Japanese and U.S. universities is difficult because of differences in regulatory systems, Vice President Smith answered that there is a lot of room for collaboration but will require efforts to understand the institutional differences. Professor Watanabe added, based on his experience, that management within the framework of Japanese export control may sometimes not be enough, and there is growing need for researchers to make various considerations to realize a joint research.

Session 3: Case Study and Panel Discussion

In the final session, four speakers gave presentations on their experience and thoughts regarding international research cooperation.

The first speaker, Vice Director Keisuke Nakao of the Division of University Corporate Relations (DUCR), the University of Tokyo gave a presentation on how the definition of fundamental science differs between Japan and the U.S. Although fundamental research is exempted from export control in both countries, the fundamental research exemption in Japan does not apply to applied research such as joint research projects related to industry-academia collaboration, whereas in the U.S., the exemption rule applies to applied research whose results are published and shared broadly within the scientific community. Pointing out this difference between Japan and U.S. in the criteria for fundamental research exemption, Vice Director Nakao explained that even in cases where an export license would be required or participation of foreign researchers would be restricted in Japan, international joint research can be conducted without application for an export license in the U.S. He also pointed to the fact that researchers can access confidential classified information subject to security clearance, but in Japan such a system is yet to be in place.

The second speaker, Mr. Todd Willis, a compliance specialist from the Directorate of Defense Trade Controls in the Office of Compliance, Bureau of Political-Military Affairs at the State Department explained how the International Traffic in Arms Regulations (ITAR), a U.S. export regulation enforced by the State Department affects university research. ITAR covers defense-related articles on the United States Munitions List (USML) including not only physical items but also technical data, and its regulations apply to universities. Mr. Willis noted that while fundamental research whose results are published and shared broadly within the scientific community is exempted from the ITAR, restrictions may be imposed if the research output includes some kind of a specific defense-related item. Some universities have decided to only engage in fundamental research exempted from these export regulations, but other universities carry out research taking care not to violate ITAR. Such universities should not leave it up to individual researchers to address export control regulations, but firmly take leadership to ensure compliance and secure personnel who have a detailed knowledge of the regulations.

The third speaker, Director Yosuke Asai of the Security Export Control Administration Division, Trade and Economic Cooperation Bureau, METI spoke about Japan's export control systems that

have implications on research activities, particularly about the recently amended “deemed export” controls. Technology transfer from a resident who has continued to stay in Japan for six months or more to a non-resident is regarded as “deemed export,” and thus an application for export license is required. Director Asai explained that METI is enhancing its outreach activities in part to ensure compliance with this amendment, for example, METI is providing administrative guidance to universities that seem to fail to implement sufficiently thorough screening of international students, and is also holding around 100 seminars a year.

The last speaker was Mr. Ara Thamassian, Chief Research Compliance Officer of Harvard University. He spoke from the perspective of university administration and pointed out that while joint research inevitably entails risks, international joint research bears additional risks related to export control and research ethics. Transparency is also important because effective collaboration can only be possible by identifying and mitigating the risks. In the U.S., disclosure of research resources is emphasized, and researchers and their affiliated institutions are even required to make clear the grants and subsidies their research partners are receiving. This means that not only the funding sources but also the sources of in-kind support must be clarified if any, as well as who is paying the salary of the employees of the partner institution. If a Japanese university receives funds from a funding entity from whom it is prohibited to receive funding in the U.S., then that may constitute a reason for ineligibility to conduct joint research with a U.S. university. He stressed that institutions should make sure a qualified person with appropriate knowledge of export control applies for licenses as necessary, because it takes detailed knowledge to decide whether exemption of ITAR applies or not, depending on what technology is being researched and what restrictions will be placed on publication.

Based on the presentations, the speakers discussed the scope of fundamental research exemption in the U.S. Under the ITAR, industrial research in which business enterprises are involved is usually not exempted as the results of such research are not publicly available in most cases. The panelists discussed how exemption is separately decided for each individual case, as there are cases where business enterprises provide funding for university facilities and not to the research itself. In response to a question regarding researcher background check and the possibility of human rights infringement, Chief Research Compliance Officer Thamassian suggested that fact checking can also be done based on publicly available information. For instance, it can be used published research papers to find out which organization the researcher was affiliated with when he/she wrote that paper, so it is possible to crosscheck the truthfulness of self-reported information without infringing human rights. In response to a question about how to bridge the gap between regulatory systems of Japan and U.S. related to research, Director Asai replied that although there are no specific solutions at this point in time, he looks forward to widespread discussions on how to promote the development of an appropriate research environment.

In the closing remarks, Associate Professor Ryo Sahashi of the International Relations Institute for Advanced Studies on Asia, Institute for Future Initiatives, the University of Tokyo iterated that harmonization of the different legal systems between the two countries is a big challenge and that it’s necessary to continue discussions through opportunities like this symposium.