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The RT-PCR Test Trap

A new type of coronavirus (COVID -19) originating in Wuhan, China has caused a pandemic in which about 175.67 million people have been infected and about 3.8 million people have died worldwide. Significant social changes are occurring with the spread of infections around the world. The number of infected people in Japan is about 1/30 of that in Europe and the United States. The Japanese media reports daily the number of infections and deaths. There is a high level of public anxiety and lives have been seriously impacted.

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The RT-PCR Test Trap

TORU TAMIYA

Director, JSPS San Francisco Office

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The Japanese media often points out that the number of RT-PCR (hereinafter referred to as PCR) tests given to detect the viral mRNA of COVID-19 is smaller than that of other countries. In this article, I would like to give my own opinion and rationale behind whether the number of PCR tests should be increased.

I was studying the genes that encode snake venom proteins where mRNA was extracted from snake venom glands, and cDNAs (complementary DNA) were synthesized from mRNAs with reverse transcriptase* to determine their base sequence[1]. In addition, DNA was extracted from the snake liver, the toxin genes were amplified by PCR reaction, and their base sequences were determined. Based on my experience, I will analyze the PCR test used to detect the COVID-19 virus. The number of infected people reported by the mass media is the number of people who are found to have a sequence of a specific part of the COVID-19 virus in the PCR reaction mixture. This value has a different meaning than the general infected people and is the number of people who are PCR positive. Please note that the number of infected people is not the number of PCR positive people. In other words, even if the PCR result is negative, there can still be an infection (a false negative). This is due to where the sample was taken, how many days have passed since infection, and the skill of the extractor because the degradation of mRNA occurs easily. If the amount of cDNA in the PCR reaction mixture is very low, PCR reaction cannot amplify the cDNA. If the amount of COVID-19 cDNA in the PCR reaction mixture is less than 10 copies (molecules), it is difficult to detect the existence of COVID-19 virus by PCR reaction. On the contrary, there are cases where the PCR reaction is positive but there is actually no live infectious virus (a false positive). Since the PCR test amplifies the nucleic acid having the base sequence characteristic of COVID-19 virus, even a small amount of the COVID-19 mRNA, test will be positive if a specific fragment of viral mRNA is contained in the sample. In other words, PCR tests can tell us the existence of a particular base sequence of COVID-19 virus mRNA in the sample, however the existence of the virus mRNA cannot certify whether the virus is infectious.

According to the National Institute of Infectious Diseases Detection Manual[2], there are several methods for detection, but the most common is real-time PCR using the TaqMan probe. In this method, amplification reactions are performed up to 45 (2^{45}) cycles.

*When a protein is biosynthesized in a cell, the base sequence on the DNA is transcribed (copied) into mRNA, and the protein is synthesized according to the base sequence of mRNA. Since genetic information of a retrovirus such as COVID-19 is on the mRNA, it is necessary to copy the information of mRNA into DNA to multiply a retrovirus in the host cell. The reverse transcriptase catalyzes this reaction, and the genetic information of this enzyme is written on the viral mRNA. When the virus enters the host cell, the reverse transcriptase is biosynthesized using the host cell's protein synthesis system. The viral RNA reverse-transcribes its own mRNA information into DNA and multiplies a retrovirus in the host cells.

If the amplification products can be confirmed within 40 cycles (Ct or Cp value 40) and no amplification products can be detected after 45 cycles of amplification with negative control (sample without COVID-19 gene), the COVID-19 virus gene is judged to be present in the sample. This standard is a Japanese standard, and there is no global unified standard until now. The value of Ct less than 35 is adopted to identify as PCR positive in many counties around the world. Therefore, even if it is deemed PCR positive in Japan (Ct value 36-40), it may be deemed negative in another country. According to a study by Singanayagam *et al.*[3], there is a correlation between Ct values and the existence rate of cultivable viruses (living viruses) and the probability of culturing the virus declines to 8% in the sample with Ct value more than 35. Therefore, the number of infected people announced by the Japanese mass media includes the number of non-infectious PCR-positive people.

For tests that make clinical judgments such as PCR tests, the probability that an infected person will be judged as positive is called sensitivity, and the probability that an uninfected person will be judged as negative is called specificity. The paper by Floriano *et al.*[4] analyzed the results of 13 studies and the sensitivity was 86% and the specificity was 96%. When the sensitivity and specificity of PCR in Japan were examined by Hokkaido University Group[5], about 2,000 samples, the sensitivity was about 90% and the specificity was 99.9%, although it varies depending on the sample collection method and how many days after infection.

So let us assume that 10,000 Japanese citizens are randomly selected and given PCR tests. The sensitivity and specificity at that time were set to 90% and 99.9%, respectively, according to the results of Hokkaido University[5]. Assuming that 0.5% of the population is infected (prior probability 0.005) then 45 would come back positive (10000 X 0.005 X 0.90) with 10 false positives (actually negative but PCR positive, 10000 X (1-0.999)), and 9940 would come back negative with 5 false negatives (actually positive but PCR negative). The positive and the negative medium rates are 81.82% and 99.95%, respectively. According to the Floriano's paper[4], an 86% sensitivity and 96% specificity[4] calculation would result in 43 positives, 400 false positives, 9550 negatives, and 7 false negatives. In this case, the positive and the negative medium rates are 9.71% and 99.93%, respectively and only about 10% of PCR positive are truly positive. This means that even if a PCR test with high specificity is performed for all citizens in a population such as Japan with a low proportion of infected people (about 0.5%), the specificity will not be 100%. It would increase the number of false positive for no reason.

As described above, the idea of conducting PCR tests on close contacts and people deemed necessary by doctors (population with a high probability of infection), Japan's current strategy, is preferable to conducting PCR tests indiscriminately and increasing the number of false positives.

References

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5) Yokota I, Shane PY, Okada K, Unoki Y, Yang Y, Inao T, Sakamaki K, Iwasaki S, Hayasaka K, Sugita J, Nishida M, Fujisawa S and Teshima T. Mass screening of asymptomatic persons for SARS-CoV-2 using saliva, Clinical Infectious Diseases, DOI 10.1093/cid/ciaa1388

Researcher Gatherings

Numerous researchers from a variety of fields and backgrounds, along with many university administrative staff members, participated in the Japanese Researcher Gathering. Held on July 2, 2021, The event had at least 52 in attendance. JSPS invited Associate Professor, Akishige Hokugo (University of California, Los Angeles) to give a lecture on his research and career path here in the United States. Using many figures and examples, the presentation was accessible to researchers from a wide range of fields. He also tried to motivate and inspire with his personal story of pursuing a research career in the US and sharing his thoughts on what is needed for success.

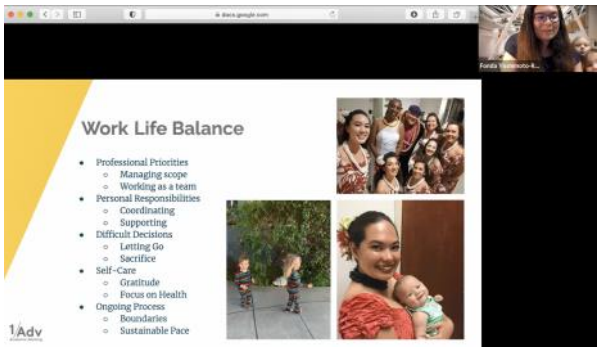
The event also included presentations from three young researchers, Tomoko Bell (University of Guam), Yutaro Mori (Harvard Medical School), and Akira Ichikawa (University of Colorado, Boulder) who introduced their work and background. The compelling presentations likely provided valuable advice and perhaps inspiration to those pursuing research in the US.

The event then moved to a virtual social space where participants could move their avatars around to different places to interact with those from different specialized fields engaging in meaningful interdisciplinary exchange. This networking portion was scheduled for about an hour, but many participants remained talking with their fellow investigators past the scheduled end time. In the end, this segment continued on for more than two hours before the curtain closed on this successful exchange. The next Japanese Researcher Gatherings is scheduled for February.

Recent Activities

Workshop for Japanese University Administrative Staff in the US (December 4 and 11)

The 21st annual Workshop for Japanese University Administrative Staff in the US had 79 registrants. JSPS San Francisco invited several Bay Area university staff members to share their experiences in the US with a series of panel discussions over a two-week period. On the first week, Japanese staff talked about their career paths leading up to their arrival in the United States and the differences from Japan. For the second week, staff from US universities presented on the university as a place of work and related work-life balance issues.

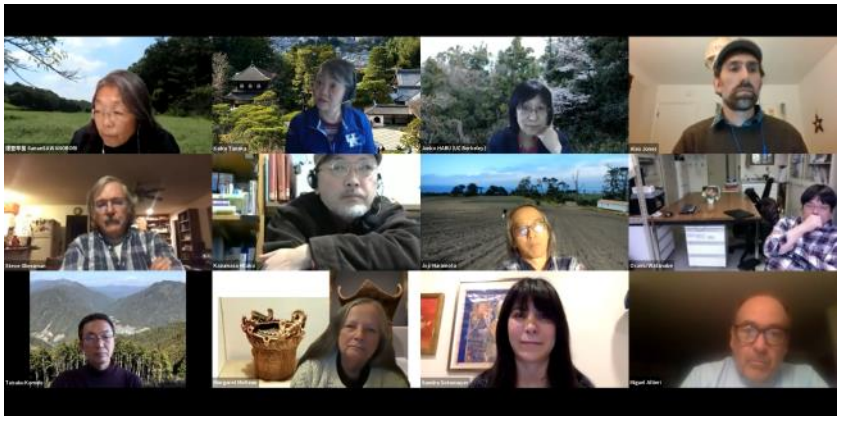


All of the post-event survey respondents rated the days' activities as "very good" or "good". The received feedback included comments such as, "was touched by the different viewpoints and interesting scenarios presented", "I benefited from being able to participate from home without having to travel", and "I was able to get exposed to perspectives and ideas that I would not get in my daily work life".

Researcher Gatherings (March 12)

Similar to the Summer, JSPS held an online researcher gathering in March. Mr. Yuichiro Kamada presented on game theory, his specialty, and how it can be used to analyze the real world. He then gave some advice to young talented researchers on how to acquire a position in an English-speaking country. At the social gathering that followed, Spatial Chat was used to hold a networking event that was almost the same as a face-to-face gathering. In the post-event questionnaire, about 90% of the participants answered that they thought the event was "very good" or "good". Moving the event online allowed researchers from all over the US to participate.

Symposium: Agroecology, Sustainable Food Production and Satoyama (March 19-20)



The Center for Japanese Studies at University of California, Berkeley and JSPS co-sponsored a symposium on Agroecology. Through the context of Agroecology, researchers from Japan and the United States had an in-depth discussion from the perspective of Indigenous knowledge and regional landscapes. This symposium provided an opportunity to consider the stable supply of food and the resilience of agriculture to disasters.

Symposium: Next Generation Radiation Governance (Every Monday from March 1 to 29)

Image by Nadine Tanio

This symposium was held jointly by UCLA, UC Irvine and JSPS to discuss future radiation governance. It's been a decade since the Fukushima Daiichi nuclear disaster. Much of the knowledge gained from Japan's policy making and implementation could benefit the rest of the world and future generations.

Japan Zoominar @ UC San Diego (Every Tuesday from March 2 to 30)

A webinar was co-sponsored by UC San Diego and JSPS with the aim of continuing the exchange of Japanese studies between Japan and the United States. The theme changed every week, and discussions were held on the Japanese economy, business, politics, and other topics. About 80 to 200 people participated each week.

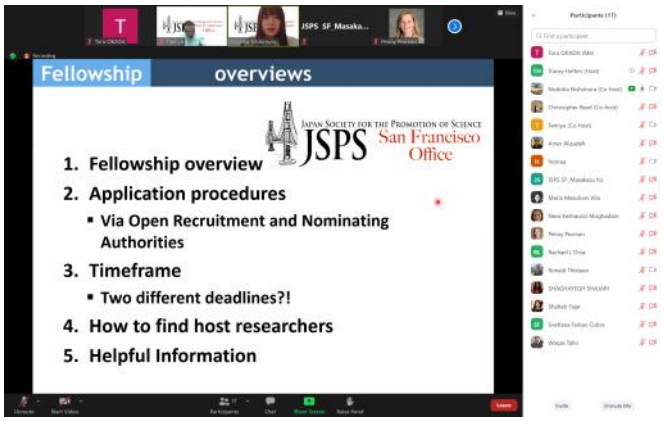
Fellowships for Research in Japan

From November, 2020 to July, 2021 JSPS SF held 10 information sessions at the universities listed below.

-Simon Fraser University (11/4/20)
-University of California, Riverside (11/30/20)
-University of British Columbia (1/13/21)
-University of California, Irvine (2/16/21)
-University of Nevada, Reno (2/18/21)
-University of California, SantaCruz (5/26/21)
-University of California, San Diego (6/8/21)
-Texas Tech University (6/15/21)
-University of Calgary (6/16/21)
-University of Alberta (7/8/21)

Like many organizations, JSPS SF's events have been held online for some time now. The current situation turned out to be not as bad as some expected at the start of the pandemic. Almost every event has drawn several dozen participants who were able to learn of JSPS's opportunities for research in Japan. Participants at the online events seem to ask questions without much hesitation, compared to in-person events. It also makes sharing documents, like the application guidelines and JSPS brochures, much easier.

These sessions usually take place on the Zoom platform, but for the UCSD event we used Remo. That event was organized by the Torrey Pines Training Consortium, of which UCSD's Postdoctoral and Research Scholarly Affairs is a member. Six other funding agencies joined JSPS on the virtual event floor. The number of people who can sit at each table was limited so participants were able to engage in something like a round-table discussion with JSPS SF staff. JSPS SF will continue to innovate and seek new effective ways to reach researchers, providing them with information and resources supporting them in their careers.



For more information about upcoming info sessions, please visit our website or contact us directly (https://www.jspsusa-sf.org/).

Also, here are some helpful links for the fellowship program.

-JSPS International Fellowships for Research in Japan (https://www.jsps.go.jp/english/e-fellow/index.html)
-JSPS Fellows Plaza (https://www.jsps.go.jp/english/e-plaza/index.html)
-US and Canada JSPS Alumni Association (http://www.jspsusa-alumni.org/)
-FAQ (https://www.jsps.go.jp/english/e-fellow/faq.html)

JSPS Fellow in America

Members of Dr. Dayu Lin's lab (before the pandemic). The author is in the front row, 3rd from the left and Dr. Dayu Lin is in the back row, 2nd from the right.

TAKUYA OSAKADA

2019.09 -
JSPS Postdoctoral Fellow for Research Abroad

2018.09 -
Postdoctoral Fellow, Department of Neuroscience Institute, New York University School of Medicine, NYU Langone Health

2017.04 - 2018.08
Postdoctoral Fellow, Graduate School of Agricultural and Life Science, The University of Tokyo, ERATO Touhara Chemosensory Project

2017.03
Ph.D. in Agriculture, Graduate School of Agricultural and Life Science, The University of Tokyo

2015.04 - 2017.03
JSPS Research Fellow DC2

I am now working as a postdoctoral research fellow in Dr. Dayu Lin's lab at the Neuroscience Institute of New York University School of Medicine (NYUSoM). Dr. Dayu Lin is one of the famous young principal investigators in the research field of neuroscience focusing on circuitries for social behaviors. Social behaviors are essential for animals to go through their life cycle and they are controlled by precise neural mechanisms. My current research interest is dissecting hypothalamic neural circuits that are responsible for social behaviors like winning and losing. We are using optogenetic, pharmacogenetic, and viral tracing tools to manipulate and visualize dedicated circuits in mice. Before I joined Dr. Dayu Lin's lab in September 2018, I studied receptive mechanisms, circuits, and behavioral outputs of mice pheromones secreted into their tear fluids in Dr. Kazushige Touhara's laboratory at the University of Tokyo.

Q1. Why did you decide to research in the U.S.?

In the days of my Ph. D. course, there were many chances to talk with foreign researchers on campus or at international conferences. However, it was frustrating that I couldn't discuss my research project deeply in English with them and that I couldn't understand their oral presentation perfectly. I gradually came to think that I wanted to do my postdoctoral training in a foreign country.

In addition, the research topic for my Ph. D. course was dissecting the mechanism of pheromone sensing and its behavioral outputs, but I also developed a strong enthusiasm for understanding the elegant circuitries underling social behaviors in mammals. In the U.S., there are many famous principal investigators in the field of neuroscience. I thought that I wanted to join one of the leading laboratories to do my training. Dr. Dayu Lin and her lab have published many impressive studies about neural circuits controlling social behaviors, so her lab was my first choice when I was seeking a position. I was fortunate to get a job offer after my visit for an interview.

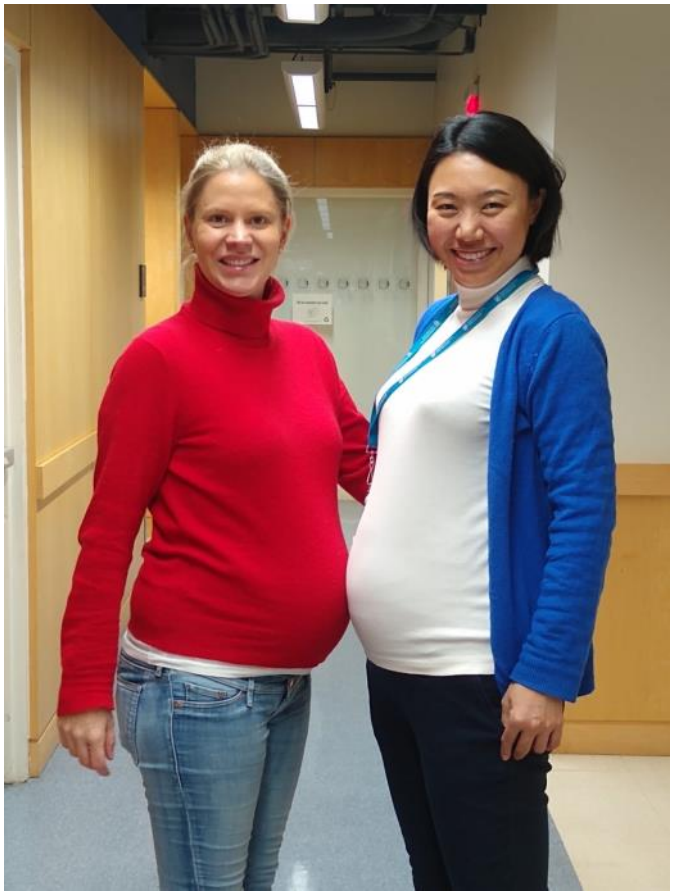
Q2. What is your impression of the research environment in the U.S.?

I have spent around three years in NYUSoM so far. There are many impressive things related to the environment surrounding scientists, and I can definitely say that the research environment in NYU Langone Medical Center (NYULMC) (Dr. Dayu Lin's lab is located in NYULMC on the east side of Manhattan.) is well organized and all things are good for research achievement and researchers at the institute. There are daily communications between not only members in the same lab but between other groups and that enables frequent collaboration and so on. In my building, there is no separation between the workplaces of each laboratory and that may contribute to the general atmosphere of collaboration. In addition, there are advanced shared equipment, a lot speakers invited for special seminars (Though now they are held virtually), and talented researchers (my co-workers) with different backgrounds from all over the world. These circumstances are amazing and essential for not only doing great research but enlarging our vision for future research and one's own career path. The U.S. is well known for its free atmosphere and that seems to apply to the working style of researchers as well. I think that this is very nice for people who want to manage their research and daily life as they see fit.

Buildings of NYU Langone Medical Center (NYULMC) from the East River

Q3. How do you take advantage of your experiences in the U.S. and apply it to your research or career?

I think that my journey as a scientist is connected like a string, so I can't separate my previous days in Japan and in the United States. In addition, I am still working on my current studies at Dr. Dayu Lin's lab, so it is a bit difficult to say how I can take advantage of my experiences here. Having said that I have had a lot of great research experiences and made connections with many good researchers. I want to make full use of my experience for future research projects and have many research collaborators. In my future career as a researcher I also want to share my valuable experiences with younger students (researchers). I hope that many promising younger scientists in Japan can get a taste of the wonderful research environment abroad.



With a pregnant colleague. We keep doing research! Nothing stops us.

Finally, I would like to thank everyone who supported me and my research in Japan and the U.S., especially JSPS for giving me a great opportunity to achieve research projects in the U.S., and Dr. Dayu Lin and Dr. Kazushige Touhara for their great mentoring.

A skyscraper from Central Park. NYULMC is within walking distance from Central Park in Manhattan.

YUKAKO TAKETANI

Received MD degree from University of Tsukuba and completed ophthalmology residency program at the University of Tokyo Hospital (class of 2010). After becoming a board-certified member of the Japanese ophthalmology association, I pursued a Ph. D. degree at University of Tokyo. I focused on research in the cornea field during, supervised by Dr. Tomohiko Usui. To get more research experience, I became a post-doc research fellow as a JSPS guest researcher at Schepens Eye Institute of Mass Eye and Ear.

Q1. Why did you decide to research in the U.S.?

I wanted to study in a lab led by Reza Dana, a world leader in the corneal area. Also, a lot of seniors said that studying in the United States was a lot of fun because of its high research level and rich resources.

Christmas party in the Lab

Q2. What is your impression of the research environment in the U.S.?

In general, the US has more funds than Japan and has a large number of people to manage facilities. In the US, the project moves forward at your own pace, while Japan has a system where senior researchers or students teach juniors, so it is difficult if you do not have basic knowledge. On the other hand, you can discuss your project with your boss and senior colleagues standing at an equal level, which is less common in Japan. If you have research experience and have a clear idea of what you want to do, I think that the US is the best place to do research as young scientists.

However, since negotiation is always necessary, the process itself is usually slow. I think it takes time for Japanese to get used to it because of our culture. I feel we are too good at being humble and assuming other people have the same common sense as ourselves. Especially in Boston, researchers come from various countries, so I have to work in a mixture of different cultures, and "implicit understanding" never works. This might be stressful for Japanese. However, it is very efficient for cross-cultural exchange because you can encounter various cultures only by staying in the lab.

Q3. How do you take advantage of your experiences in the U.S. and apply it to your research or career?

Even when I was doing a Ph.D. in Japan, I was very lucky to have a boss who gave me a good amount of freedom to do research by myself. It was almost the same situation in the US too. On top of that, I learned how to write grants and points of note when writing papers. Although I am a postdoctoral fellow, I have had the experience of leading my project while collaborating with colleagues, so I can learn how to think as a leader and how to proceed, which is a very precious experience for the future. In Japan, training leaders has only recently come into focus, but the curriculum in school and culture in general have not yet fully penetrated into society.

Working in the United States, I once again felt that the consciousness of becoming a leader should be cultivated little by little from the early education phase. I would like to convey that to my juniors as much as possible after I go back to Japan.

In addition, I am really grateful that I could make many international friends. They could be future collaborators and will be my adviser all the time.

With best friends in the Lab @ Vancouver conference

A Carrying Out A Global Peace Symposium Amid The COVID-19 Pandemic

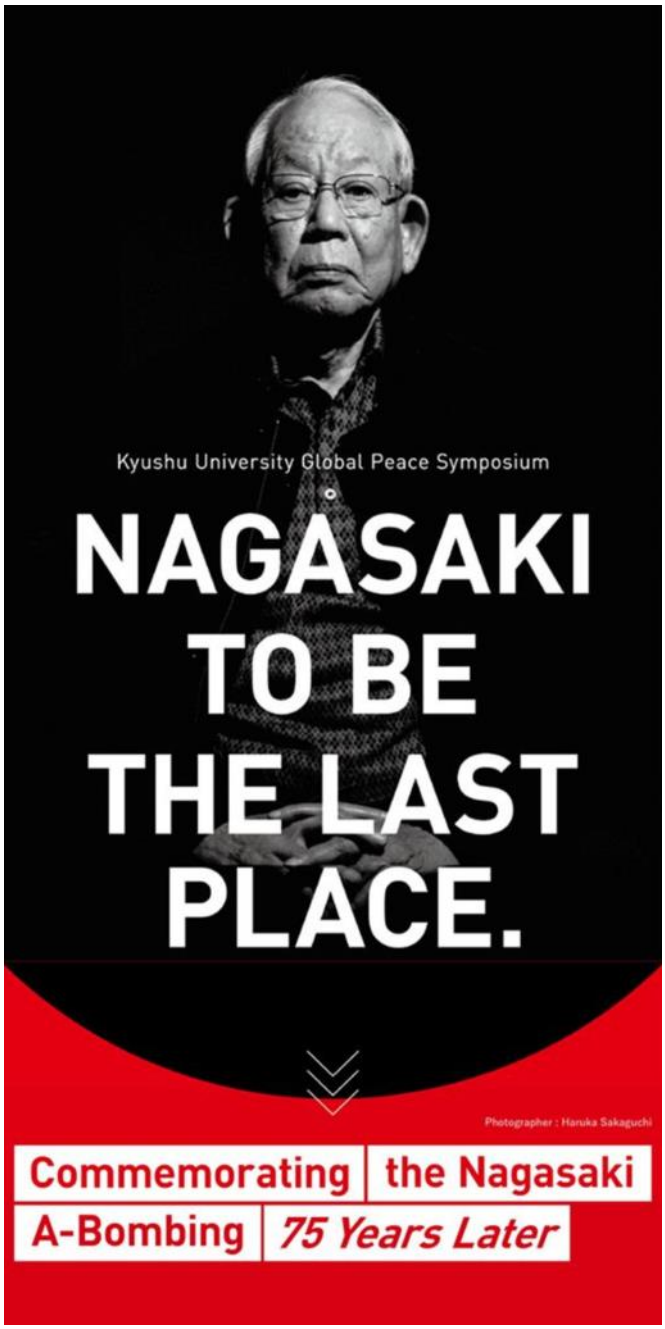
Kyushu University Masa Higo, Ph.D.

Professor, Kyushu University International Student Center

It has been well over a year since the COVID-19 pandemic began impacting almost every corner of society. Universities across the world, including those in Japan, were not spared – daily teaching and research activities have been forced to go online, and students' international mobility, both inbound and outbound, have been minimized or even fully suspended.

This unprecedented global health crisis coincides with a crucial moment in modern history for the call for peace and security in our ever-changing global society. Last year, 2020, marked the 75th year since an American B-29 bomber dropped the world's first deployed atomic bombs over the cities of Hiroshima and Nagasaki on August 6 and 9, 1945, respectively. This year, 2021, celebrates a harvest of the long-term international efforts to pursue an end to our nuclear age;

the Treaty on the Prohibition of Nuclear Weapons, the first legally-binding international agreement ever to comprehensively prohibit nuclear weapons, went into effect on January 22, 2021.

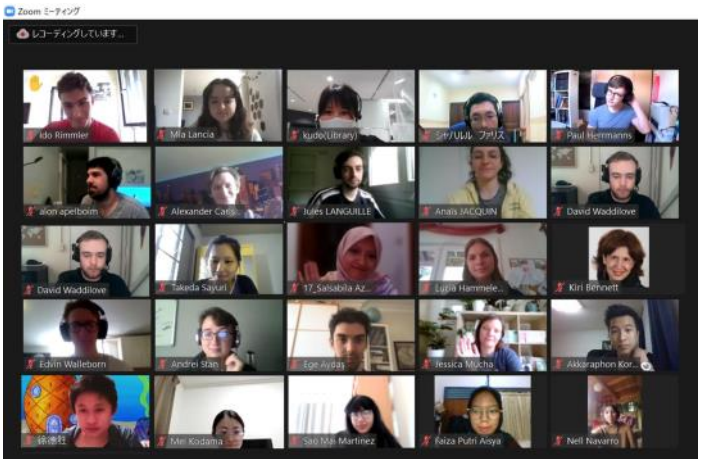


Against the backdrop of these historically significant contexts, what could today's higher education institutions do to encourage students to learn about the atomic bombings 75 years after their occurrence? Since 2006, Kyushu University International Student Center (ISC) has annually carried out an on-campus education event on the Nagasaki atomic bombing, inviting a hibakusha – a survivor of the atomic bombing – from Nagasaki as the main speaker. As an onsite event arranged only for the university's international students living on the main campus, however, the turnout usually remained below 30 students. Also, more broadly, how could universities engage students in thinking collectively about global peace and security for their own generations and amid the COVID-19 pandemic, a time that imposes mutual remoteness against our continuous effort for global learning?

This year, the ISC took advantage of this special time, not only managing to continue the annual symposium, but also to proactively expand it into a global event widely open to anyone across the world. The ISC arranged the symposium as a Zoom live webinar and promoted the event around the world in collaboration with The International Campaign to Abolish Nuclear Weapons, the global peace organization that received the 2017 Nobel Peace Prize. This event was carried out on January 23, only a day after the Treaty went into force, under the title 'Kyushu University Global Peace Symposium: Commemorating the Nagasaki Atomic Bombing, 75 Years Later.'

This event enjoyed great success – nearly 300 students participated from more than 30 countries across all major continents of the world.

Despite significant time zone differences, it's worth noting, sizable turnouts came from the United States and Canada, and many of them actively participated in the Q&A session directly with the main speaker of the event. As the post-event survey results unanimously indicated, this experience of learning about the tragic history directly from a hibakusha served as a once-in-a-lifetime opportunity for the participants to start growing as global citizens responsible for peace and security for many decades to come.



琉球大学
UNIVERSITY OF THE RYUKYUS

Our Islands, Our Future – Global Leadership for Island SDGs University of the Ryukyus Online Intensive Study Program (OISP) AY2020-21

In August 2018, the University was awarded acceptance of our proposal for the "Inter-University Exchange Project" by the Japan Ministry of Education, Culture, Sports, Science and Technology (MEXT). With a five-year financial grant, the University has been able to propel a regionally beneficial educational project ("Developing Global Leaders in the Pacific Island Region for its Sustainable Development via COIL Technology") with our partner institutions in the Pacific Island region (namely Hawaii, Guam, Micronesia, Palau, and the Marshall Islands).

OISP AY2020-21 featured a series of lectures and group work with opportunities for collaborative learning on common issues faced by countries and territories in the Pacific Island region to encourage multicultural understanding and leverage knowledge on SDGs toward the eventual objective of nurturing the next generation of global-minded leaders.

Conducted online between 4th and 22nd March 2021, the University's first attempt at holding both inbound and outbound intensive study programs simultaneously attracted 15 student participants - seven inbound students (University of Hawai'i at Hilo: 4, Kaua'i Community College: 2, University of Guam: 1) and eight outbound students from the University (including one international student from Palau). Program contents were conducted wholly in English.

The program included a virtual eco-campus tour, broadcasting of videos of traditional Okinawan dance performed by local high school students, together with a live discussion between high school students and OISP participants, as well as guest lectures by the University of Hawai'i at Mānoa, Kaua'i Community College and the University of Guam.

The OISP AY2020-21 lecture lineup featured themes integral to island regions such as sato-umi and sato-yama (land and sea eco-communities), rural homesteads and disaster mitigation, management of ocean resources, migration and soft power, language revitalization, Okinawan culture and history, as well as global leadership.

The omnibus lineup featured 15 different instructors – six from the University, seven from the University's partner institutions, and two external representatives (including one from the United Nations University's Institute for Advanced Studies on Sustainability).

Lectures were conducted across a series of synchronous sessions via Zoom. Students were given opportunities to exchange opinions and discuss given topics in Zoom breakout rooms. In their final presentations, students worked in intercultural groups, conducting research, and developing ideas based on one selected SDG.

The project's simultaneous approach brought many advantages, notably a deepening of learning outcomes through synchronous student collaboration, as well as ample opportunities for personal interaction, which accorded an element of authenticity to virtual exchange. It also provided the opportunity for faculty members to explore possibilities for engaging collaborative international learning, attesting to the potential of COIL on enhancing the quality and depth of tertiary-level curriculum.

The program gained positive feedback from participants, who commended the program for giving them the rare experience of engaging in collaborative learning with people of different cultural and linguistic backgrounds. Students said they enjoyed interacting with their peers and gained significant learning outcomes from the variety of classes offered.

Hiroshima University signs self-driving shuttle, 5G, and smart city deals

Deals to operate a self-driving shuttle and achieve a 5G-ready smart city are some of the things to look forward at Hiroshima University on the road to the university's journey to becoming a smart campus.

Hiroshima University (HU) signed a tri-party agreement with Higashihiroshima City and Sumitomo Corporation last January to achieve "Society 5.0" that pushes for a 5G-ready smart city and promotes the United Nations' Sustainable Development Goals.

The deal aims to make a unique contribution to the local community and the world by creating an environment supportive of innovation and academic research, skills development, and industry-government-academia collaboration on an international scale.

The agreement can help position HU into a world-class education and research institution adapted to the post-coronavirus era and accelerate the university's vision of international expansion. The past year has seen the university's various regional partnerships and international collaborations, including the establishment of an international branch of Arizona State University on HU's Higashi-Hiroshima campus.

Under the deal, Sumitomo Corporation will set up a local 5G open laboratory to work on digital transformation within HU. The laboratory will promote joint research on the use of 5G, utilize the data on movement and activities within the university, and conduct experiments on light mobility, aiming to expand the application of 5G beyond the campus.

En route to becoming a smart campus

HU also started operations of its self-driving shuttle in March en route to its goals of achieving smart campus status.

The project is part of a bigger smart city deal spearheaded by the Higashi-Hiroshima Autono-MaaS Consortium — which comprises HU, the Higashihiroshima City, US autonomous vehicle (AV) technology firm May Mobility, and Japanese companies like MONET Technologies Co., Ltd. The AV experiment is the first in Japan to demonstrate the combined mobility services of passenger rides and grocery deliveries.

The self-driving electric shuttle is equipped with multiple sensors for safety. It has seven cameras used to recognize pedestrians, animals, and other cars. It also has five lidars, a laser version of a radar, that can detect objects in every direction and recognize location. Five radars were also installed to detect objects over 100 meters away.

Although equipped with technology that could help it handle different driving scenarios on its own, the shuttle still has a safety driver on board who could take over if needed.

HU President Mitsuo Ochi vowed that the university would continue working to achieve the SDGs by conducting cutting-edge research addressing regional issues.

Upcoming Events Information (*Details to be announced)

September 14th (PDT, EDT), 15th (JST), 2021
The 1st JUNBA Webinar 2021

October – November, 2021
Workshop for Japanese University Administrative Staff in the U.S.
（在米大学職員研究会）

Middle of February, 2021
Winter Gathering of Japanese Researchers in the U.S.
（日本人研究者交流会・冬）/ Bridge Award Ceremony

December, 2021
The 2nd JUNBA Webinar 2021

Office Member Greeting

TORU OKADA

Hello! My name is Toru OKADA. I arrived here at the JSPS San Francisco Office as an International program Associate on April 1, 2021. I'm originally from Tohoku University in Sendai.

I'm going to be the main person in charge of publishing this Newsletter for the coming year. I'm also involved in planning several events that we hope will bolster the relationship between the international scientific communities in Japan and abroad. Working to facilitate the "Japanese University Network in the Bay Area (JUNBA)" is something I'm especially excited about. As I believe it will give me valuable experience and knowledge.

As you know, COVID-19 has been raging for the past year so I wasn't sure if I could come to California or not until the last minute. Finally, JSPS headquarters and Tohoku University decided to send me to US so I'm very grateful to be here and will strive to make the best of my term! Although the pandemic forced us to alter projects and events we have done everything in our power to continue our regular activities. Such a difficult situation could be an excellent opportunity to polish up our operation and workflow. I try to stay positive while remaining flexible, doing everything that I can to carry out JSPS's mission of improving international scientific cooperation among the academic community.

I look forward to meeting you all soon!

NODOKA NISHIMURA

Hello, everyone. I joined this office in April of 2021. I am in charge of accounting, coordinating our Japanese Researchers gatherings in the U.S. and information sessions at universities in the U.S. and Canada. I worked at JSPS headquarters in Tokyo for two years before coming here where I worked in the Contracting and Accounting Office. I also worked in the Research Cooperation Division where I was in charge of the Core-to-Core Program, Asia-Africa Science Platforms, and A3 Foresight Program. I am originally from Okayama University where I worked at the Discovery Program for Global Learners. I supported both international and Japanese students there. I would like to learn about how they are supported here at universities in the US. I am really looking forward to (e-)meeting many people from different backgrounds while I am here. Thank you!

Vaccinated Against Covid-19 in Time For the Fall School Term

CHRIS REED

Liaison Officer, JSPS San Francisco Office

This is a follow-up from the last newsletter's article on how universities in the US were coping with the COVID-19 pandemic that has so profoundly affected our lives. This time the outlook is optimistic but with several complications that illustrate just how decentralized and diverse higher education is in the US.

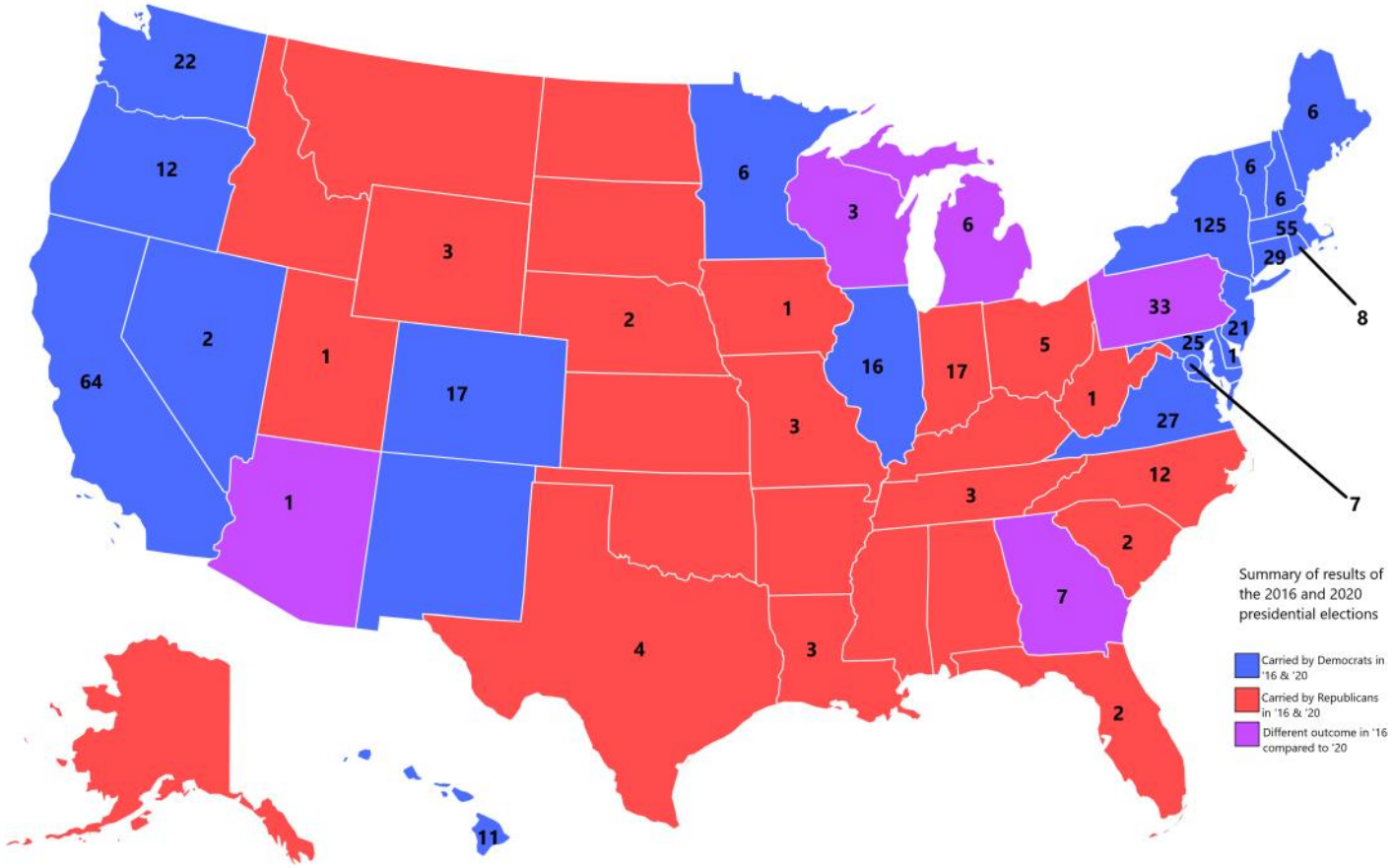
Many schools in the Western US that we interact with directly are planning to be fully reopened in time for the start of the Fall term. Schools here tend to begin the academic year around September. Many seem to share the goal of having students back in the classroom (with the option of attending remotely) for the start of the new academic year. After all, the on-campus experience is a huge selling point for traditional colleges and universities.

The University of California has announced that it is 'planning for a return to primarily in-person instruction systemwide starting fall 2021[1)]. Similarly, Stanford University announced that they were 'planning for as normal a fall as possible, with modifications as needed based on the public health situation'[2)].

However, in order to make sure students, faculty, and staff can safely return to normalcy many institutions are requiring vaccination against COVID-19. Rutgers University was the first institution in the US to announce a requirement. Many schools have announced the same requirement for faculty and staff[3)]. The University of California and California State University (the largest university system in the US) have proposed similar vaccination requirements. Numerous private schools have also announced vaccine requirements such as Stanford, University of Southern California and Santa Clara University, to name a few. According to the Chronicle of Higher Education's database, 522 campuses in the US will require students and employees to get vaccinated against Covid-19, at the time of writing[4)].

The geographic distribution of these campuses divides neatly along political lines with the vast majority of schools requiring vaccinations being located in states that voted for Biden in the 2020 presidential election. Conversely, 15 states have recently passed laws forbidding colleges from requiring students to provide proof of vaccination against COVID-19. All but two of those states (Georgia and Arizona) voted for Trump in 2020. Schools in Florida and Indiana have already had to reverse some of their policies due to new state laws. In Arizona, the Governor criticized Arizona State University's policies saying on Twitter that, "They have no basis in public health". Some of these conflicts between university and college vaccine requirements and conservative state governments will likely end up in court[5].

The American College Health Association recommends Covid-19 vaccination requirements for all on-campus students writing, 'In addition to the obvious physical and mental health advantages offered by a highly vaccinated campus population, there are economic, academic and social advantages.



The resumption of continuity in the academic, extracurricular and residential experience will, once again, enhance students' personal, professional and academic growth'[6].

Just like everything else related to public life here in the US, vaccine requirements have become politicized. But it is worth noting that the majority of colleges and universities already required vaccinations against viral infections such as measles, mumps, and rubella prior to COVID-19. One survey from Maguire Associates (N > 21,400) found that the majority of prospective students and their parents support the new vaccination requirements[7]. These requirements seem to be supported by the group perhaps most important to colleges and universities: paying customers.

References

1) https://www.universityofcalifornia.edu/press-room/uc-plans-fall-2021-person-instruction-across-its-10-campuses

2) https://news.stanford.edu/today/2021/04/07/update-planning-fall-2021/

3) https://www.bestcolleges.com/blog/can-colleges-make-covid-19-vaccine-mandatory/

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5) https://mobile.twitter.com/dougducey/status/1404608619736276994?ref_src=twsrc%5Etfw

6) https://www.acha.org/ACHA/About/ACHA_News/ACHA_Recommends_COVID-19_Vaccination_Requirements_for_Fall_2021.aspx?WebsiteKey=03f1a0d5-4c58-4ff4-9b6b-764854022ac1

7) https://blog.maguireassoc.com/download-covid-policy-survey-2021