

Japan-Asia Youth Exchange Program in Science  
**SAKURA**  
**Exchange Program in Science**  
Activity Report on Open Application Course 2016



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Yamagata University, Sophia University, Chuo University, Tokyo University of Marine Science and Technology, Okayama University, University of Kitakyushu, Kumamoto University, Tokyo University of Science, Shimane University, Kyushu University

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**List of Acronyms**

<b>JST</b>	Japan Science and Technology Agency
<b>SSP</b>	SAKURA Exchange Program in Science
<b>SSH</b>	Super Science High school
<b>S&amp;T</b>	Science and Technology

# SAKURA Exchange Program in Science

## Overview of Open Application Course 2016

Through the open application course of the SAKURA Exchange Program in Science(SSP), Japanese organizations host youth from eligible countries and regions for a short term, and conduct exchange programs in the fields of science and technology(S&T).

### 1. Summary

Three open calls were held in total for the open application course 2016 with 35\* eligible countries and regions in Asia and the Pacific Islands. 4,215 young people from 605 sending organizations visited Japan, and 176 Japanese receiving organizations coordinated with the sending organizations to implement 452 exchange programs.

Invitees belong to the alumni association of SSP, and continue to communicate with other participants.

#### Application and Implementation Status

		First Call	Second Call	Third Call	Total
Application	No of organizations	126	121	75	195* <sup>2</sup>
	No of programs	261	258	112	631
Implementation	No of organizations	98	108	66	176* <sup>3</sup>
	No of programs	166	200	86	452

\*2 and \*3: "Organization" refers to receiving organizations. The total number of organizations excludes multiple applications or implementations from within the same organization.

### 2. Eligible Countries/Regions and Number of Invitees in 2016



East Asia	..... 4 countries and 1 region	..... 1,843
Southeast Asia	..... 10 countries	..... 1,824
Southwest Asia	..... 8 countries	..... 464
Central Asia	..... 5 countries	..... 57
Pacific Islands	..... 8 countries	..... 27
		(Person)

### 3. Eligibility

Students of eligible country/region in high schools, universities, graduate schools, and researchers under 41 years old who have never visited Japan

### 4. Types of Exchanges

#### A. Science and Technology Experience Course

Visiting youth participate in exchange programs related to science and technology, as arranged by Japanese receiving organizations.

Length of stay: Around one week maximum ten days

#### B. Collaborative Research Activity Course

Visiting youth conduct short-term collaborative research activities on specific topics at the receiving organizations. Arrangements are made by Japanese receiving organizations (including education/research institutions and companies that conduct educational research and development activities in science and technology).

Length of stay: Maximum three weeks

#### C. Science and Technology Training Course

Visiting youth participate in focused training, conducted at Japanese receiving organizations, to hone techniques and abilities related to science and technology. Arrangements are made by Japanese receiving organizations (including education/research institutions and companies that conduct educational research and development activities in science and technology).

Length of stay: Maximum ten days



Exchange program by high school students from Indonesia and India, and overseas students at Shizuoka Univ.(Jan 2017)

# Indian Students Experience Organic Electronics of Japan

**Yamagata University Faculty of Engineering (Course A) June 13-18, 2016**

With support from SSP, the Yamagata University Faculty of Engineering invited one faculty and ten students from the Indian Institute of Technology Delhi and Amity University. During the program, participants listened to explanations and lectures about the latest organic electronics research, and visited research facilities and related companies.

The purpose of this program was for the participants to experience organic electronics through the synthesis of organic electro-luminescence (OEL) material and development of OEL devices, and to consider life 20 years later when organic electronics will be implemented, as they collaborate with the university's students as leading scientists of the future.

A seminar was held on the following day to further their understanding of organic electronics. Professors representing the Yamagata University Faculty of Engineering spoke about their cutting-edge research, followed by a tour of the Research Center for Organic Electronics, which leads fundamental research on organic electronics at the Faculty of Engineering, as well as the Frontier Center for Organic Materials.

### Experience Efforts towards Practical Implementation

On the third day, participants synthesized and created OEL devices, experiencing organic electronics research with their own hands. At night, the students from India attended a social event with the Japanese students who guided the experiments, sharing insights on each other's experiments and culture, as well as hopes for the future.

The group visited university-initiated ventures working with OEL on the fourth day. There are many university-initiated ventures built near the Yamagata Univ. The participants learned about OEL products and Japanese companies at Takahata Electronics Corp., and actually went inside a cleanroom at Lumiotec Inc. to view the process of OEL lighting manufacturing.

The same afternoon, they visited the Innovation Center for Organic Electronics (INOEL) and the "Smart Future House," in which empirical studies are conducted on application methods, and were introduced to the INOEL's research and achievements. Through visiting research centers focusing on application and empirical studies, we believe that participants were able to gain a tangible experience of efforts being made towards practical implementation.

This program introduced the participants to the comprehensive research at the Yamagata Univ. Faculty of Engineering, as well as the process of industrialization through venture companies. We hope that the Indian students will take home what they learned and find ways to develop research and new business globally.



Creating an organic EL device



Visiting a company (Lumiotec Inc.)



Commemorative photograph in front of the "Smart Future House"

Day	Program	Venue
1	Arrival Travel from Tokyo to Yonezawa	
2	Lecture (Introduction to cutting-edge research at Yamagata Univ. Faculty of Engineering) Visit to the Yamagata Univ. Research Center for Organic Electronics and Frontier Center for Organic Materials	Yamagata Univ. Faculty of Engineering
3	OEL material experiment OEL device experiment	
4	Visit to the Innovation Center for Organic Electronics, Smart Future House, and local companies Travel from Yonezawa to Tokyo	
5	Visit to the National Museum of Emerging Science and Innovation (Miraikan)	National Museum of Emerging Science and Innovation (Miraikan)
6	Departure	

# Academic Exchange with Chinese Graduate Students

## Sophia University (Course A)

October 16-25, 2016

The Tielong Shen Lab of the Department of Engineering and Applied Sciences at Sophia University's Faculty of Science and Technology invited Professors and doctoral students from the National Institute of Governance at Huazhong University of Science and Technology (HUST) in China for academic exchange activities. As the participants specialized in the social sciences, their discussions centered around environmental and social systems.

At Sophia University, Shen Lab members introduced their research and gave experiment demonstrations using the engine test bench. The students from China seemed very surprised at the test bench, which included advanced process measuring and control instruments.

In addition, joint researchers from automobile manufacturers gave a lecture on how the automobile industry is approaching environmental challenges. In this lecture, participants learned the environmental potential of automobile powertrains, including combustion control research being conducted at the Shen Lab, as well as the importance of approaching these issues from an engineering perspective.

The participants then introduced each other's research with Professor Huang Guangwei and his lab members at the Graduate School of Global Environmental Studies, Sophia Univ. The participants seemed interested in the local efforts of the Huang Lab towards environmental issues at Wuhan, where HUST is located.

This was followed by a visit to the Zempukuji River sluice facility with the Huang Lab members. The Chinese students seemed very impressed with the large-scale underground tunnel at the facility, and actively asked the facility staff questions.

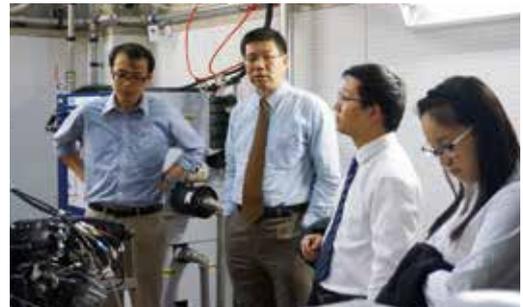
### An introduction to research projects on smart cities

In addition, the Prof. Hiroaki Nishi Lab at Keio Univ. introduced their research project on smart cities. This project is going through a trial run at the local municipality, and their explanation about social infrastructure in the near future, based on their actual experiences, was very interesting. He explained, "In order to build a smart city at a larger scale, from a municipality to an entire country, it is necessary to take a social systems theory approach in addition to conducting engineering research." This idea was a strong incentive for the participants towards their future studies.

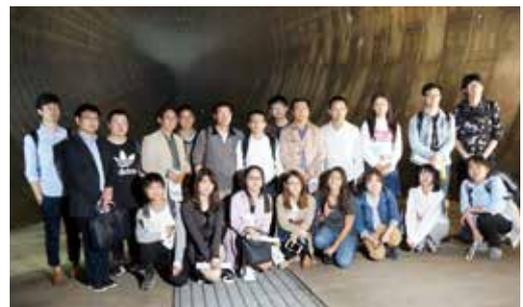
The group from the Huazhong Univ. of Science and Technology specialized in the social sciences. Despite the differing academic background from the Shen Lab, debating efforts towards environmental issues from different viewpoints seemed to help broaden perspectives. We hope that what they learned from this program will be a great contribution to their research activities.



Research exchange with the Dr. Huang Lab at the Graduate School of Global Environmental Studies, Sophia University



Training with experimental facilities at Sophia University



Visiting the underground tunnel of the Zempukuji River sluice facility

Day	Program	Venue
1	Arrival	
2	Orientation Automobile engine, hybrid car control experiment	Sophia Univ.
3	Lecture by Dr. Huang, Sophia Univ Visit to the Zempukuji River sluice facility	Sophia Univ. Zempukuji River
4	Lecture on high-efficiency control technology of automotive control systems Lecture on emission performance improvement technology for automobile engines	Sophia Univ. Yotsuya campus
5	Visit to the Nishi Lab, Keio University	Keio Univ.
6	"The challenges of electric city buses" Lecture by Dr. Masakazu Sasaki, Former Director of Nissan diesel HEB bus development/Visiting Researcher, Sophia Univ. Debate with Shen Lab graduate students	Sophia Univ.
7	Visit to the Miraikan Visiting the Panasonic Center	Odaiba
8	Visit to Asakusa and Tokyo Skytree	Asakusa
9	Mini training course on engine control experiments Lecture and social with researchers from automobile manufacturers	Hotel
10	Departure	

# Interactive Program with Sri Lankan Students on the Water Sector

Chuo University Faculty of Science and Engineering (Course A)

March 2-9, 2017

The Chuo University Faculty of Science and Engineering received ten students and one faculty in the field of civil engineering from the University of Peradeniya, Sri Lanka. Chuo University students also participated in the training over seven days.

In the early morning of March 2nd, the group from Sri Lanka arrived in Japan, and they received an introduction to the program, followed by a lecture on the importance of learning about “water management,” the main theme of this training, by Associate Professor Hiroshi Yamamura. The group toured the lab in the afternoon, visiting the Computational Mechanics Laboratory and observing tsunami simulation using VR technology, as well as research on water processing and water quality measurement.

On the morning of the second day, the group received lectures on water management in Japan. The first lecture introduced phosphorus resource recycling systems using sewage lines. The second lecture was by Professor Tadashi Yamada, who explained the characteristics of Japanese rivers and past river management efforts. The latest river planning method that students were most interested in was the “super floodwall.” Instructor Lashitha presented on “The current water situation in Sri Lanka” in the afternoon, followed by two students each from the University of Peradeniya and Chuo University introducing their own research.

## Overnight Study Tour to Chichibu

An overnight study tour to Chichibu, Saitama Pref., was held on the third and fourth days. The group visited the Urayama and Takizawa dams, located on the uppermost stream of the Arakawa River, and learned about the functions and roles of dams. They stayed at a traditional Japanese inn, with students from both universities strengthening their friendship. In the afternoon on the fourth day, they experienced the rafting down Nagatoro River and traveled to Tone-Ozeki, where a Japan Water Agency staff introduced them to water conveyance programs at the Tonegawa River.

On the morning of the fifth day, the group toured the Maezawa Industries Inc. factory, where valves critical to water control are manufactured. In the afternoon, they visited the “G & U Technology Research Center” to learn about urban flood damage as well as the latest technology and endurance tests for manholes. On the final day, each group presented the results of their discussion on the previous day. All participants contributed to the presentations, and the Japanese students did their best to present in English. The closing ceremony and sending off party was held afterwards. All Students seemed reluctant to say their goodbyes at the party.



*Instructor Lashitha presenting on the current water situation in Sri Lanka*



*Students listening to an explanation at the Urayama Dam (Arakawa River basin)*



*A thrilling water rafting experience at Nagatoro river*

Day	Program	Venue
1	Arrival Orientation, lab tour	Chuo Univ.
2	Special lecture (Japan and water, irrigation and flood control in the Arakawa River systems) Special lecture (The current water situation in Sri Lanka)	Same as above
3	Tour of Urayama and Takizawa dams	Chichibu City
4	Arakawa River hydrophilicity facility experience (Nagatoro river rafting)	Arakawa River near Nagatoro
5	Tour of Maezawa Industries Inc. in Kawaguchi City and G & U Technology Research Center in Kawajima Town	Maezawa Industries, and G & U Research Center
6	Guidance and reference material preparation for student joint research presentations Visit to Miraikan	Chuo Univ. Miraikan
7	Reference material preparation for student presentations Presentations, program recap, farewell party	Chuo Univ.
8	Departure	

# Visiting the Great East Japan Earthquake Sites and Investigating Reconstruction

Tokyo University of Marine Science and Technology (Course A)      October 21-30, 2016

Tokyo University of Marine Science and Technology invited ten students from five universities (The Univ. of Hong Kong, the National Univ. of Singapore, Thailand Chulalongkorn Univ., Univ. Malaysia Sabah, and the National Taiwan Univ.) to implement the Second Global Exploration EAST Program. The invited students ranged from university seniors to graduate students, all specializing in the sciences including fisheries, agriculture, and forestry.

The program aimed for participants to investigate the reconstruction process of the primary sector (agriculture, forestry, and fishery) at sites of the 2011 Great East Japan Earthquake. Research results were presented on the Tokyo Univ. of Marine Science and Technology campus, as well as for high school students at the Municipal Matsudo City High School in Chiba Pref.

## Expand the Knowledge through the Visit to the Disaster Sites

All participants were highly interested in the visit to Kesennuma, in part because it was their first visit of a Japanese disaster site. While they were impressed by the speed of reconstruction in Japan, the students also noted the remaining challenges, and expanded their knowledge as they exchanged opinions. In Morioka, they met with students from Morioka Chuo High School who had been actively participating in overseas training since the Earthquake. The following day, the group learned about the disaster had been like from the victims in Kesennuma.

The foreign students learned much that differed from what they saw on the news, gaining a more accurate picture of the disaster site. They looked back on the disaster from the landscape of Kesennuma City and toured the fish market to learn about the reconstruction process in the local fisheries industry. They also visited a lumber shop and learned about the forestry industry in Kesennuma City from its situation immediately after the disaster to today. The students then visited seafood refrigeration facilities, experiencing a freezer at -30 degrees, and learned about shark fishing at Kesennuma Port, which sees the highest catch in Japan.

After returning to Tokyo, the group visited a farm in Hadano City, Kanagawa Pref., which contributes to agricultural industry reconstruction at the disaster sites. There they learned about the advanced aquaculture farming efforts, followed by a visit to the Reconstruction Agency, where they gathered information on the reconstruction support policies. The students from Asia gained a deep understanding of various efforts towards reconstruction by connecting the dots, and expressed their wish to “become a bridge between the two countries”.



Tour of forestry industry reconstruction at the disaster site



Visiting Morioka Chuo High School, Iwata



Tour of agricultural facilities installed in the disaster site (Grandpa Dome)

Day	Program	Venue
1	Arrival	
2	"Asian students' disaster reconstruction forum" at Morioka Chuo High School	Morioka City
3	Visit to the Sanriku satellite of Tokyo University of Marine Science and Technology Tour of primary industry sector sites at Kesennuma.	Kesennuma City
4	Meet the Principal of Tokyo University of Marine Science and Technology, campus tour. Overview of five Asian universities at Introduction to Global Careers	Tokyo University of Marine Science and Technology
5	Fieldwork of Tsukiji market Visit to the Reconstruction Agency	Tokyo
6	Orientation Fieldwork and research (Hadano Plant Factory visit)	Same as above
7	Visit to government agencies Presentation preparations at Municipal Matsudo High School	Same as above
8	Presentation preparations Exchange program at Municipal Matsudo High School	Tokyo and Chiba Pref.
9	Tour of Tokyo University of Marine Science and Technology Tateyama Station, kayaking. Farewell party	Chiba Pref.
10	Departure	

# Students of the Pacific Islands Observe Waste Treatment Technology

Okayama University Waste Management Research Center (Course A) October 5-16, 2016

Despite the increasingly serious nature of waste problems in the Pacific Islands, there is a lack of waste treatment technologists or experts. While these island countries prosper economically from tourism, large amounts of waste are produced at tourist areas. As the waste is all buried, it continues to pile up within the islands. On the lowland treatment facilities, trash is carried by the waves of large typhoons. In order to advance safe and appropriate waste treatment and recycling, it is necessary to nurture the human resources that can properly manage the waste.

Based on these reasons, four undergraduate students and two faculty members were invited to Okayama Univ. from Samoa, Fiji, the Marshall Islands, the Solomon Islands, and Micronesia. A waste management school was held under the topic of "Rethinking waste treatment and disposal in island societies." Besides learning about general waste treatment techniques, the participants were able to view actual treatment processes. There are islands of many sizes in the Seto Inland Sea, and by learning about Japanese technology and awareness through observing the facilities and activities, the participants may strengthen their interest in studying in Japan. Below is a description of the visits.

<Waste separation in Okayama City> For those from island countries, waste separation seemed to be a highly interesting civic activity. The students passionately snapped photographs of citizen activities.

<Waste treatment and disposal facilities in Okayama City> Compared to the waste treatment facilities in the Pacific Islands, which smell strongly of garbage, the Japanese treatment facilities are clean and sanitized.

<Shodoshima City Clean Center/Recycle Center> Participants were interested in the machinery and operation of the small incineration facilities. They seemed to decide that recycling by hand and automation could be applied to their home countries.

<Illegal waste disposal at Teshima> Visit to illegal industrial waste disposal sites. The group listened to the staff discuss its history and recovery efforts, and understood the importance of management and oversight.

<"Awaji" the Island of Future environment> Awajishima Island engages in various environmental activities including recycling and energy conversion. The group received a lecture on wind power and small hydropower generation, as well as the "Nanohana Flower Project" and bamboo recycling, and toured related facilities.

After the visit, the students made presentations on how the technology and policies of waste treatment in Japan could be useful in their own countries, closing the program with meaningful discussion.



A tour of the Yamanoue final disposal place



A student presentation on the visit



Commemorative photograph after the final discussion

Day	Program	Venue
1	Arrival	
2	Preparation of reports on waste Welcome ceremony, orientation	Okayama Univ.
3	Tour of waste separation and treatment facilities	Okayama City
4	Lecture on the geography and history of Okayama	
5	About waste problems in island countries (report) Learning about urban cleaning at Okayama Castle and Korakuen	Okayama Univ.
6	Lecture on the waste treatment and recycling technology of Japan	
7	Tour waste processing facilities in Shodoshima Travel to Teshima. Observe illegal waste disposal sites.	Shodoshima Naoshima (Teshima)
8	Visit Naruto City Tour of waste recovery and treatment system at Awajishima Island (1)	Sumoto City Awaji City
9	Tour of waste recovery and treatment system at Awajishima Island (2) Travel to Okayama	Awaji City Okayama City
10	Summary of waste treatment in island countries	Okayama Univ.
11	Groupwork and presentation of waste management plans in each country	Same as above
12	Departure	

# Participating in a Smart City Learning Program in Kitakyushu

## The University of the Kitakyushu (Course A)

February 19-28, 2017

Receiving support from SSP, ten undergraduate and graduate students, including four students from Hanoi Architectural University in Vietnam, two from Dalian Nationalities University, three from Chang'an University, and two from Qingdao Technological University in China, were accompanied by one faculty member to participate in the Smart City learning program at the Kitakyushu Eco-Future City. The program took place from February 19<sup>th</sup> to 28<sup>th</sup> 2017, over ten days.

Kitakyushu City, the birthplace of modern industrialization in Japan, has been working on building an environmentally friendly city through cooperation between the public and private sectors. Under the theme of "creating a shared society," the city has implemented many environmental policies, including electricity cogeneration and eco-friendly apartments.

This program aimed to disseminate new Japanese environmental principles and science internationally, through educating the participants on the high-efficiency energy management science used in the Kitakyushu Smart Community project.

In the lecture, students learned about energy management systems that are clean, high-efficiency, and high-reliability. These systems make maximum use of hydrogen and zero-carbon technology, which places importance on the demand side of architecture and lowers the burden on the environment by effectively utilizing energy.

### Visiting environment and energy facilities as empirical study facilities

Kitakyushu City has been designated for the national eco-town project in 1997, and has since been named for the 2008 Kitakyushu environmental model city, 2010 Kitakyushu smart community development project, and 2011 Kitakyushu City future city. It leads the national environmental and energy fields in Japan.

The ten days went by very quickly, but the group was able to visit facilities related to urban planning and lifestyles for the Future City project, and received lectures on energy management systems. We believe that this will help students further their understanding of clean, high-efficiency, and high-reliability energy production systems and the smart cities that aim to implement them.

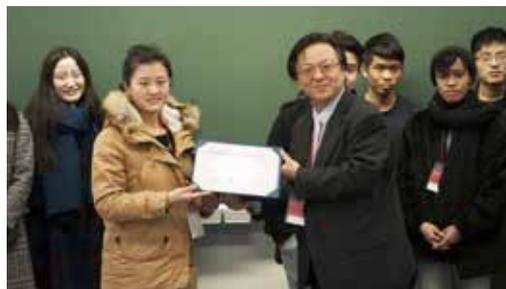
We hope that the Vietnamese and Chinese students who visited Japan on this trip will become human resources working towards the development of the environmental industry, not only in their own countries but also in Asia as a whole.



A view of the classroom



Visiting the Kogasaki super refuse power plant



Receiving a certificate of completion after the program

Day	Program	Venue
1	Arrival	
2	Orientation Introduction to Kitakyushu City and its environmental efforts	Univ of Kitakyushu
3	Mega solar power plant fieldtrip Tour of sites such as Kitakyushu City eco town, Kitakyushu Hibikinada energy Park	Kitakyushu City
4	Energy management system development theory lecture	Univ of Kitakyushu
5	Kitakyushu City Higashida smart community site visit	Kitakyushu City
6	Lecture on the ESCO project and credit system development through zero-carbon technology	Univ of Kitakyushu
7	Kitakyushu science and Research Park environmental energy system site visit Kogasaki super refuse power plant site visit	Kitakyushu City
8	Lecture on introducing an energy conservation system	Univ of Kitakyushu
9	Research presentations Research summary and future efforts	Same as above
10	Departure	

# Pakistani Students Learn about Groundwater Resource Management

## Kumamoto University (Course A)

January 17-25, 2017

The Kumamoto University College of Cross-Cultural and Multidisciplinary Studies invited four young faculty members and six graduate students from the COMSATS CIIT (Commission on S&T for Sustainable Development in the South Institute of Information Technology), a leading university in Pakistan, to participate in S&T international exchange activities.

This program was on groundwater resource management at Kumamoto City. Kumamoto City implements advanced groundwater management systems for the conservation of groundwater, with considerations made for the overall groundwater system, from the recharge to outflow stages. These regional characteristics make Kumamoto Univ a primary site for groundwater research. The students learned much and seemed impressed from directly viewing and experiencing the facilities.

### A Short but Energetic Presentation and Discussion

During the training period, the students visited the university research facilities and learned about general groundwater management. In addition, they traveled to the Aso region to receive a detailed lecture and learn directly about the relationship between regional agriculture and water resources. Afterwards, they toured the water treatment and purification facilities in Kumamoto City, gaining insight into groundwater resources in the Kumamoto region, as well as efforts towards their sustainable use.

In return, the research group from Pakistan gave special lectures on "The role of information technology towards resolving water environmental issues in Pakistan" and "About Pakistani culture." The lectures were attended by university and high school students from Kumamoto Univ and Kumamoto City, as well as members of the public.

The short presentations and discussions in English held among university and high school students from Kumamoto Pref., became wonderful opportunities for research and academic exchange, as well as inspiration for the future, for the students of both countries. As a receiving Organization, the program became a rare opportunity to become familiar with the culture of Pakistan, and contributed to the globalization of Kumamoto Univ. itself.

The COMSATS CIIT is the top university in Pakistan in the information field, and we believe there will be continued academic and technological exchanges regarding the application of information technology towards water disaster management (hydroinformatics).

We would like to express our gratitude towards those who supported us in implementing this program, as well as the young researchers and graduate students who actively participated as a part of the international exchange.



On-site lecture on "Sustainable agriculture and Shirakawa water resource in the Aso region"



Students from Pakistan receive a lecture on cutting-edge science



Touring the "Magnesium Research Center" at Kumamoto University

Day	Program	Venue
1	Arrival, Travel to Kumamoto City	Kumamoto City
2	Introduction to Kumamoto Univ.	Kumamoto Univ.
3	Lecture and mini-workshop	Same as above
4	On-site lecture "agriculture and water resource in Aso"	Aso County, Aso City
5	"River dynamics" Special lectures by Pakistan team	Kumamoto Univ.
6	"Overview of Kumamoto Univ. reconstruction project and contributions from volunteers" Japanese (Kumamoto) history and culture experience: "Kumamoto Castle exploration"	Same as above Kumamoto City
7	Visit to Kengun watershed and Kumamoto City central water purification center in the morning Visit to Ministry of Land, Infrastructure, and Transport Kumamoto Office, Kumamoto Ground Water Foundation, and Fuji Film Kyushu Co., Ltd. in the afternoon	Kikuchi County/ Otsu Town
8	Lecture on cutting-edge science/ tour of university research facilities "Magnesium Research Center" Kumamoto Univ. study abroad seminar, Certificate of Completion ceremony	Kumamoto Univ. College of Cross-Cultural and Multidisciplinary Studies
9	Departure	

# Joint Research with Students from China, the Philippines, and Vietnam

## Tokyo University of Science (Course B)

August 2-11, 2016

A total of nine students visited Japan, including three students each from Zhejiang University in China, Mindanao State University – Iligan Institute of Technology of the Philippines, and Hanoi University of Science and Technology in Vietnam. They stayed on the Kagurazaka campus of the Tokyo University of Science. Eight of them were graduate students, including those in doctoral programs, and one was an undergraduate student.

The Tokyo University of Science received participants from Zhejiang Univ with support from SSP in 2014 and 2015, and we were able to further our relationship with them as well as with students from the Philippines and Vietnam.

The Participants included students researching material related to biological and environmental science, as well as those focusing on theoretical research, physics, and chemistry. With a diversity of academic foundations, there was also an element of cross-disciplinary exchange.

In this program, we held similar activities as in past years, including joint experiments on campus, microorganism sampling in the field, lab visits during open campus days, a visit to a venture company run by one of our graduates. We also had a mini presentation on respective research topics. The presentation was a last-minute event, but the students seemed eager to create their presentation material, resulting in an impressive session.

### New Ideas through Program Participation

In the joint research held on campus, participants divided into three groups, taking turns to experiment with cell culture for behavior observation, various microscopic experiments, and nanostructure production using carbon nanotubes and biomolecules. In this process, we realized that some students were interested in the application aspects, and instructed them to divide into three groups to present on articles including topics presented by other research groups. We saw new ideas develop in this mini research presentation as well. As microorganism cultivation takes time, the experiment will continue until next year. However, experiments utilizing cells sampled the year prior are almost ready to be presented.

During the open campus days of the university participants were able to efficiently view research examples across multiple fields. Some students expressed interest in studying abroad at laboratories in slightly different fields.

At the study abroad orientation, as most of the program participants were graduate students in Master's programs, they were introduced to various Doctoral programs and study abroad programs after obtaining their Doctorate. Although the visit was limited to ten days, we received emails from students after their visit, expressing interest in studying in Japan through Doctoral programs.



Students passionately taking part in the experiments



Sampling microorganisms (Shimoda City, Shizuoka Pref.)



Visiting the National Museum of Emerging Science and Innovation (Miraikan)

Day	Program	Venue
1	Arrival	
2	Orientation Joint research (Umemura Lab)	Tokyo University of Science
3	Joint research (Umemura Lab)	
4	Joint research (Umemura Lab) Visit to venture company	
5	Joint research (Umemura Lab) Study abroad orientation	
6	Sampling microorganisms at Shimoda	Shimoda City
7	Sampling microorganisms at Shimoda Travel to Tokyo	Shimoda City Tokyo University of Science
8	Visit to Miraikan*	Miraikan
9	Participation in Tokyo University of Science Open Campus	Tokyo University of Science
10	Departure	

## Exchange on Radiation Exposure Treatment with Kazakhstani Doctors

Shimane University Faculty of Medicine (Course B)

January 10-31, 2017

The Shimane University Faculty of Medicine held an exchange program with the support of SSP under the theme of "Nurturing medical experts to combat international radiation exposure". This time, we invited Dr. Farkhad (cardiac surgeon), Dr. Yersyn (cardiovascular surgeon and radiologist), and Dr. Aigerim (cardiovascular physician) from Semey State Medical University, Republic of Kazakhstan. These three excellent young doctors and doctoral students participated in the diagnosis of mammary gland and thyroid diseases, as well as the diagnosis and treatment of digestive system diseases at the Shimane Univ Faculty of Medicine.

During the training, the participants observed the latest medical technology at the operation room of Shimane Univ Hospital. They learned about the latest medical technology in Shimane Pref, focusing on thoracoscopic surgery and heart bypass operation. On the Faculty of Medicine campus, the group participated in a special lecture on radiation exposure medicine for third-year students in the medical program, and presented on the current state of nuclear radiation at Semipalatinsk, Kazakhstan. In addition, they participated in a surgery techniques class for fifth-year students, helping to guide students on suturing, ligation, hemostasis, and wound treatment.

### Daily Participation in Outpatient Training and Surgical Operations

On January 26<sup>th</sup>, they also had presentations at the "4th International Shimane/Semey Symposium."

This international symposium considers international radiation exposure issues, and experts from Hiroshima, Nagasaki, and Ukraine were invited this year to discuss health issues after the Fukushima nuclear reactor disaster. The three participants from Kazakhstan presented on the history, damage, and future efforts at Semipalatinsk. As part of peace education, the participants visited Hiroshima City, trained at an outpatient thyroid clinic, and visited the Hiroshima Peace Memorial Museum at the Hiroshima Peace Memorial Park.

While the training was limited to three weeks, the three participants joined medical training at hospitals, almost daily. In the morning they had outpatient training, and in the afternoon, they took part in surgery in the operation room, experiencing both university and regional hospitals. In addition, they participated in six small medical conferences as part of their lecture activities, training in the latest medical information.

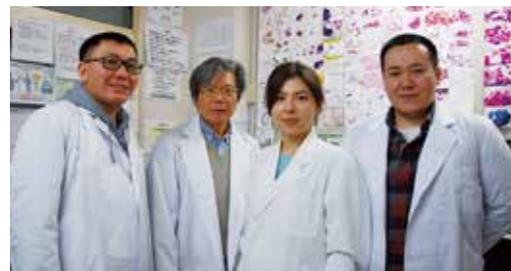
We hope that we will be able to improve our program and invite the participants again based on our experiences this year, in order to help hone their medical techniques and curiosity as medical researchers, contributing towards the nurturing of young leaders in Asia.



*Surgical Operation training*



*Presentation at the "4<sup>th</sup> International Shimane/Semey Symposium"*



*With young researchers carrying the future of international radiation medicine*

Day	Program	Venue
1	Arrival in Japan	
2, 3	Surgery training	Ohda Medical Center
4	Visit to Hiroshima Peace Memorial Museum	Hiroshima City
5	off	
6-8	Surgery training	Ohda Medical Center
9	Training at Ohda Medical Center Surgery training	Ohda Medical Center
10	Surgery training	Ohda Medical Center
11, 12	off	
13-15	Surgery training	Ohda Medical Center
16	Participation in the 4 <sup>th</sup> International Shimane/Semey Symposium	Shimane Univ. Izumo Campus
17	Surgery training	Ohda Medical Center
18	Japanese culture experience in Kyoto	Kyoto City
19	Vacation	
20	Surgery training Submission of training report	Ohda Medical Center
21	Travel from Ohda to Fukuoka Airport, departure	

# Cambodian Students and Researchers Learn about Japanese Agriculture

## Kyushu University (Course C)

October 30-November 5, 2016

Nine students and researchers from the Agriculture Engineering Bureau of Department, Ministry of Agriculture Forestry, and Fisheries in Cambodia; and the Institute of Technology of Cambodia were invited to an exchange program at the Faculty of Agriculture of Graduate School, Kyushu University over six days.

During this program, the latest research findings on agricultural engineering technology aimed at sustainable agricultural production were introduced, and participants visited sites where the technology was actually being used.

Faculty from Kyushu Univ. and Ritsumeikan Univ. gave lectures on the latest research findings. The talks covered diverse topics including agricultural technology such as irrigation, drainage, and field of biomass, as well as crop monitoring, rice harvest predictions based on agricultural information, monitoring and sensor technology used for smart agriculture implementation, post-harvest prediction techniques such as Computational Fluid Dynamics (CFD, an analysis method based on heat and fluid dynamics), and societal policies for the distribution of these technologies.

The group then visited a site that makes practical use of carbide, learning about the current situation of Japanese agricultural villages and forming relationships with the businesses that work there. In Fukuoka, the group visited an organization dedicated to revitalizing communities using a simple carbonization technology to overcome the challenges of neglected bamboo forestry. They also visited an organization that helps the handicapped work on these carbonization efforts, as well as an experimental agricultural land that implements the carbon capture and storage agriculture.

### Visiting Kyoto to learn the carbon capture and storage agriculture

The participants also headed to Kyoto, and visited the Hozu Area at Kameoka City, which is leading the implementation of the carbon capture and storage agriculture in Japan. The group interviewed the organization about their activities and implementation results, followed by a visit to the sales area.

The group also toured a site where existing carbonization technology in Japan is actually being used. Some of this technology has the potential to be transferred to Cambodia. The participants had the opportunity to exchange various ideas with related researchers and technical experts.

During the training period, the Cambodian participants had meaningful interactions with international and Japanese students at Kyushu Univ., including a presentation session. In particular, young researchers, students, and faculty from relevant organizations presented their research findings to further academic exchanges.



Chikurin Park in Ouma, Kitakyushu City



Classroom discussion (at Kyushu University)



Commemorative photograph with certificates of completion

Day	Program	Venue
1	Arrival, briefing	
2	Opening ceremony lecture (Periods 1-3) Campus tour	Kyushu Univ.
3	Lecture (Periods 4-6) Student presentations	Same as above
4	Local site tour, Kitakyushu Local site tour, Itoshima	Kitakyushu City Itoshima City
5	Travel to Kameoka City, Kyoto Prefecture Local site visit to Kameoka City, Hirakata Tour of carbonization furnace	Kameoka City
6	Lecture at Ritsumeikan Univ. Afternoon: Sightseeing in Kyoto	Kyoto City
7	Departure	

# International Workshop with Students from India and Nepal

**National Institute of Technology, Kisarazu College (Course A) July 4-11, 2016**

The Kisarazu National College of Technology invited four participants from the Gandhi Institute of Technology and Management (GITAM) in India and four participants from Tribhuvan University in Nepal, including Supervisors.

The group arrived on July 4th and visited various research facilities on campus after the orientation on the second day. They also observed the robot development process of a group planning to participate in the National Robot Contest (Robocon).

On the third and fourth days, an "International Workshop on Effective Engineering Education" was held. There was a total of 40 workshop participants, including engineering educators and technology researchers from Asian countries, as well as SSP students, short-term study abroad students and faculty from National United University in Taiwan, and Kisarazu National College of Technology students and faculty.

## Diverse presentations and engaging Q & A at workshop

In the beginning of workshop, President Maeno gave an opening speech and a description of the overview and characteristics of technical college education.

Then, presentations were made by Dr. Netra Prakash Bhandary of Ehime Univ on "The potential of collaboration based on educational experiences in Nepal, India, and Japan", by Prof. Ti-Kuang Hou of National United University in Taiwan on "The current status and challenges of engineering education in Taiwan". Also, the three doctors who were invited for SSP spoke about the current status and challenges of engineering education in respective country.

On the fourth day of the workshop, the above students as well as students of Chiba University and National Institute of Technology, Nara College participated in a poster session with 56 submissions, leading to energetic discussions.

And next day, the students from India and Nepal visited the Takei Lab at the Department of Mechanical Engineering, Graduate School of Engineering, Chiba University, to participate in an experiment on detecting blood coagulation in extracorporeal circulation devices.

The lab specializes in electrical measurements and flow visibility, and the participants learned about the basic development of hardware and software, applications to biomedical engineering and multi-phase flow engineering, and the industrialization of this technology.

On the final day, the students from Japan, India, and Nepal gave presentations on their exchange experience. The students were motivated by the higher education and S&T of Japan, and seemed strongly interested in studying in Japan.



*Presentation by President Maeno on higher education in Japan*



*Participating in an experiment on extracorporeal blood circulation (Takei Lab, Chiba Univ.)*



*Experiencing an earthquake of level 7 seismic intensity (Honjo Life Safety Learning Center, Tokyo Fire Department HQ)*

Day	Program	Venue
1	Arrival	
2	Orientation Participation in Kisarazu College classes, lab visits	Kisarazu College
3	International Workshop on Effective Engineering Education	Same as above
4	International Workshop on Effective Engineering Education	Same as above
5	Visit to Faculty of Engineering, Chiba University (Dr. Masahiro Takei Lab, Division of Artificial Systems Science, Department of Mechanical Engineering)	Chiba Univ.
6	Visit to National Museum of Emerging Science and Innovation, Life Safety Learning Center at the Tokyo Fire Department HQ	Tokyo
7	Written report, presentations	Chiba City
8	Departure	

# Thai and Japanese High School Students Learn Together through Scientific Training

## Ritsumeikan Junior and Senior High School (Course A) July 27-August 2, 2016

Nine students and two faculty members were invited from the Mahidol Wittayanusorn School (MWITS), a leading science high school in Thailand, to the Ritsumeikan Senior High School. The Thai students gained a broad perspective on the science field through experiencing the advanced S&T of Japan and going through scientific training to gain a deeper understanding of Japan.

After arriving at Ritsumeikan, the group received orientation and a tour of the campus. They then worked on biology experiments with the students of Ritsumeikan.

On the second day, the participants received lectures by Prof. Eric W. Cooper at the College of Information Science and Engineering, Ritsumeikan Univ. The morning lecture was on the Professor's area of specialization, color on the web.

In the afternoon, the students made presentations on presented what they wanted to research in the future, and received comments on their work. They also heard a talk on solar power generation by Prof. Hideyuki Takakura, College of Science and Engineering of Ritsumeikan, and visited the solar power facilities on top of the ROHM PLAZA.

On the third morning, the students visited the Kyoto University Museum and seemed fascinated by the research material on biology, archaeology, and other fields.

### Rising Interest in Japan after Chatting with MWITS Graduates

On the fourth morning, the students received a lecture by Dr. Atsushi Yagi from the Graduate School Information Science Technology at Osaka Univ. They learned that even though biological growth and movements seem chaotic, there is an overarching order that can be realized in a mathematical equation.

On the fifth day, they traveled from Kyoto to Tokyo. After arriving in Tokyo, the group participated in a workshop at Miraikan. The Thai and Ritsumeikan students divided into three groups, and each group chose two topics that they were interested in. They were to present on the topic the next day.

On the sixth day, the group listened to a talk by Dr. Yuichi Ogawa on the "Frontier of Nuclear Fusion Research" at Univ. of Tokyo. They also listened to a lecture by Dr. Taro Matsumoto of the National Institutes for Quantum and Radiological S&T, a graduate of Ristumeikan Senior High School, on the ITER development process. After arriving at the hotel, the students made presentations on their topics as decided at the Miraikan.

On the last day, the Thai students said their farewells to the Ritsumeikan students, expressing their hesitation to return home and their hopes to visit Japan again.



Exchange at Ritsumeikan Senior High School



A lecture at the College of Information Science and Engineering, Ritsumeikan University on "Searching for a research topic"



Presentations on the Miraikan visit

Day	Program	Venue
1	Arrival Visit to Ritsumeikan Senior High School, exchange activities	Ritsumeikan Senior High School
2	Learning about color on the web from Prof. Eric W. Cooper. Lecture on solar power generation by Prof. Takakura	Ritsumeikan University Biwako/ Kusatsu Campus
3	Workshop at the Kyoto Univ. Museum Sightseeing in Kyoto Social with MWITS graduates in the Kansai area	Kyoto Univ., Kyoto City Ritsumeikan Univ. Ibaraki Campus
4	Lecture titled "Is math useful in the study of biology?" by Prof. Yagi, Osaka Univ. Visit to NIFREL	Osaka Univ. NIFREL
5	Travel to Tokyo by bullet train Workshop at Miraikan	Miraikan
6	Lecture by Dr. Ogawa at Univ. of Tokyo Lecture on the "ITER development process" by Dr. Matsumoto of National Institute for Quantum and Radiological Science and Technology	Kashiwa Campus, Univ. of Tokyo, other areas
7	Workshop at the National Science Museum Departure	National Science Museum

# Cross-Cultural Program with Thai and Vietnamese Students

Hokkaido Sapporo Kaisei High School (Course A)

August 18-25, 2016

Seven students and five faculty members (of which seven came on individual funding) were invited to Hokkaido Sapporo Kaisei High School from the Princess Chulabhorn Science High School Phitsanulok of Thailand, as well as five students and one faculty from Trần Đại Nghĩa High School for The Gifted in Vietnam.

At night on the first day, the students attended a lecture on "Next-generation solar cells using squid ink" by Prof. Toshihiko Matsuura of the Hokkaido Univ. of Education. The visiting students showed great interest in research utilizing what would normally be thrown away, and asked numerous questions.

For the Mount Usu workshop on the second day, Hokkaido Sapporo Kaisei High School tailored a course that is normally given as "Earth Science field observation" for the foreign students.

## The Parachute-Making Program, a Popular Activity for Students of Both Countries

On the third day, the students listened to a talk on the principles and operation methods of the electronic desk microscope, then divided into country-based teams to create parachutes. The Kaisei Students who participated as Hokkaido district representatives in the 5th "Science Koshien" (the national competition of Science for students) joined in. The students from Vietnam and Thailand had been sent the material and rules for the competition beforehand. The activity was highly popular with the participants from both countries.

On the fifth morning, five students and two faculty members from the Seishin Gakuen High School of Ibaraki Pref., fourth and fifth year students at the Sapporo Kaisei Secondary School, and junior Cosmo Science Course students from Hokkaido Sapporo Kaisei High School joined in to learn about "The building and testing process of scientific models" using the educational resource called "Black Box." The faculty who taught these students from three countries and five schools was Specially Appointed Associate Professor, Fumio Nakaya of Osaka Kyoiku University.

On the sixth day, the participants visited the Institute of Low Temperature Science at Hokkaido Univ. After a lecture arranged for the visiting students, another talk was given by Hokkaido Univ. International Headquarters on the study abroad program.

The Thai and Vietnamese students, Seishin Gakuen and Kaisei students were divided into three groups on the seventh day. After touring research facilities, the group returned to school for presentations. There was little preparation time, but everyone used computers and handwritten diagrams effectively to make clear presentations.



Mount Usu workshop



A competition to build "a parachute that lands slowly and accurately" as a science and technology exchange activity



Workshop on "The building and testing process of scientific models"

Day	Program	Venue
1	Arrival Tour of Japan Steel Works Muroran Plant Evening lecture	Japan Steel Works Muroran Plant
2	Mount Usu workshop	Mount Usu
3	Swap meeting, club activities S&T exchange activity Science Competition	Sapporo Kaisei High School
4	Stay at the homestay sites	
5	Workshop on "The building and testing process of scientific models" Lecture and experiment on natural environments	Sapporo Kaisei High School Hokkaido University
6	Study on the crystallization of snow and ice	Hokkaido Univ.
7	Research facilities visit Group presentations	National Institute of Advanced Industrial Science and Technology, and others
8	Visit to the Chiba Institute of Technology Tokyo Skytree Town Campus	Tokyo Skytree

# Training at Cutting-edge Particle Accelerator Research Facilities

## High Energy Accelerator Research Organization (Course B) July 5-14, 2016

A total of ten graduate students, postdocs, and one guardian from the National Synchrotron Radiation Laboratory (NSRL), University of Science and Technology of China, was invited to the High Energy Accelerator Research Organization (KEK).

The SuperKEKB accelerator at KEK is an internationally renowned project, and participants can stand alongside leading researchers on the site of cutting-edge accelerator technology. The students received a lecture on accelerators, then went to directly view the accelerator through the Tsukuba and Tokai laboratory tour. They seemed taken aback by the massive size of the SuperKEKB and J-PARC, and gained a tangible understanding of the differences between the equipment.

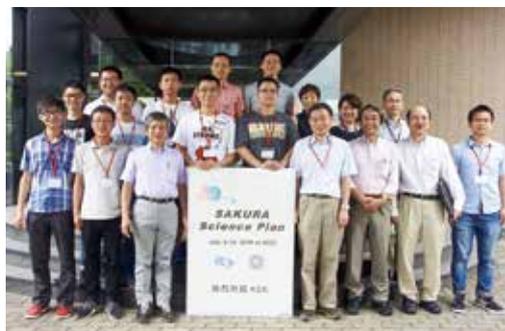
The central workshop of this program had the students divide into small groups to work on different research topics. While there is a limit to what anyone can learn over a few days, we asked the workshop leaders to allow as many opportunities as possible for participants to speak with researchers. For participants aiming to become researchers in the field of accelerator physics, it would be invaluable to build a social research network for the future.

### Lack of researchers in accelerator physics

On the final day, the students presented what they learned and felt during their stay in Japan. Most participants expressed their impressions and opinions on Japan, and had highly favorable things to say about the country. However, the results were somewhat different from what the organizing staff had hoped for. These impressions may have been influenced by the fact that many groups had already presented on their experiences during the workshops, but we realized that not everything can get through to the participants.

At the same time, after asking the students to submit a report later on, we received papers of over 100 pages within two days, making it apparent that participants had made sincere effort. It was unfortunate that this sincerity could not be presented to the audience during the student presentations, but this became an opportunity as a receiving institution to reconsider our approach and youth training methods, as well as our final presentation methods.

There are multiple new large-scale projects being built in the field of international accelerator physics, but the lack of human resources in the field is becoming a serious issue. Nurturing youth as the next generation of researchers is becoming a highly important challenge, along with conducting cutting-edge research. We strongly believe that the program contributed to training for the participants, as well as joint research opportunities in the future.



Commemorative photograph with participants



Visiting the accelerator on the laboratory tour



The students present what they learned during the trip to Japan

Day	Program	Venue
1	Arrival	
2	Orientation Lecture	KEK Tsukuba Campus
3	Lecture Campus Tour	Same as above
4	J-PARC (Japan Proton Accelerator Research Complex) tour	KEK Tokai Campus (Tokai Village, Ibaraki Prefecture)
5	Visit to Miraikan	Miraikan
6	Japanese culture experience	KEK Tsukuba Campus
7	Training	Same as above
8	Training (One participant visited FEL<Free Electron Laser> at the Tokyo University of Science)	KEK Tsukuba Campus Noda Campus, Tokyo University of Science
9	Training Report and presentation Social activities	KEK Tsukuba Campus
10	Departure	

# Mongolian Students Learn about Efforts by Industry/Academia/Government

## Shizuoka Prefecture (Course A)

October 24-31, 2016

Shizuoka Prefecture received the support of the Mongolian Ministry of Education, Culture, Science, and Sports to invite eight high school students and one supervisor to visit Japan. Shizuoka Pref. and Mongolian Ministry had signed a memorandum on international exchange in August 2015, and had encouraged collaborations in the fields of education, culture, and science.

The purpose of this invitation was to allow participants to learn about health and longevity, a characteristic of Shizuoka pref., and learn about the latest research, technology, and efforts in the fields of health and medical science.

Shizuoka Pref. has been leading three industrial cluster projects: the eastern "Pharma Valley (medical and health-related industries)," the central "Food Science Hills (food-related industries)," and the western "Photon Valley (light and electrical technology-related industries)." These projects are taken on by universities and research institutions, companies, and government administration offices across the region. We planned this exchange program to allow participants to learn more about this advanced research in Shizuoka.

### Experiencing cutting-edge technology in various facilities

On the third day, the group visited the Faculty of Agriculture at Shizuoka Univ., as well as the School of Marine Science and Technology at Tokai Univ. At Shizuoka Univ., the group visited research facilities for the stable production of good vegetables and learned about effective cultivation methods through observing and touching the vegetables. After a lecture on food safety at Tokai Univ., the students took part in a fish processing experiment.

At the Univ. of Shizuoka on the fourth day, the participants listened to a lecture on tea, a leading produce in Shizuoka, and learned about the health benefits of tea ingredients.

The group visited four labs at the Faculty of Engineering, Shizuoka Univ. on the fifth day. They learned about the latest research, including studies on nano-level manufacturing techniques using electronic microscopes.

This was followed by a visit to the Hamamatsu Univ. School of Medicine, where the students gained hands-on experience with the latest medical instruments, such as a navigation system for endoscopes, developed by the university in collaboration with local companies.

Through this program, we received many comments from the students about their desire to study in Japan, and their decisions about future fields of study. We believe that the Mongolian students could deepen their interest and curiosity towards the S&T, and raise their awareness of study abroad opportunities in Japan.



Facilities tour at the Faculty of Agriculture, Shizuoka Univ.



Fish processing experiment at the School of Marine Science and Technology, Tokai Univ.



Medical equipment experience at the Hamamatsu Univ. School of Medicine

Day	Program	Venue
1	Arrival, orientation	
2	Learning about genomic research at the National Institute of Genetics (NIG) Visit to the Museum of Natural and Environmental History	NIG Museum of Natural and Environmental History
3	Learning about regional industry development activities at Shizuoka Univ. Lecture on food safety and fish processing at Tokai Univ.	Shizuoka Univ. Tokai Univ.
4	Lecture at Shizuoka Univ. Visit to Director, the Culture and Tourism Dep. of Shizuoka Pref.	Shizuoka Univ. Shizuoka Pref. Office
5	Visit to labs at the Faculty of Engineering, Shizuoka Univ., Visit to Hamamatsu Univ. School of Medicine	Shizuoka Univ. Hamamatsu Univ. School of Medicine
6	Buddism experience	Houkou-ji Temple
7	Morning service, zen experience Visit to International Tea Festival	Houkou-ji Temple Shizuoka Convention Center
8	Departure	

## 1. Results of Open Application Course 2016

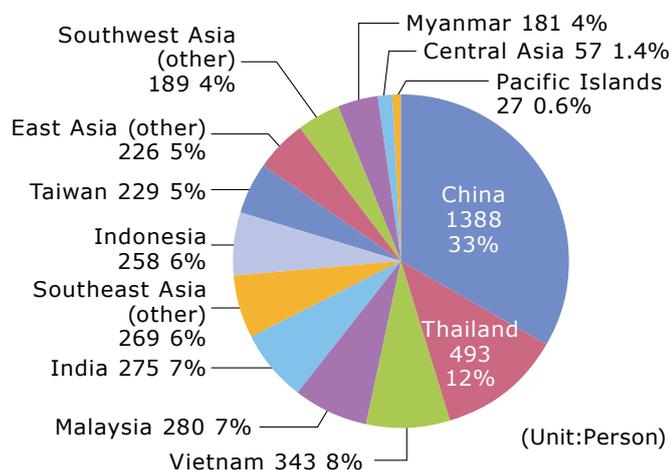
### (1) Number of invitees by country/region

Note: There was a total of 5,519 invitees for SSP 2016. This number includes invitees of the Open Application Course as listed below, as well as 1,062 high school students and 242 government officials or other invitees.

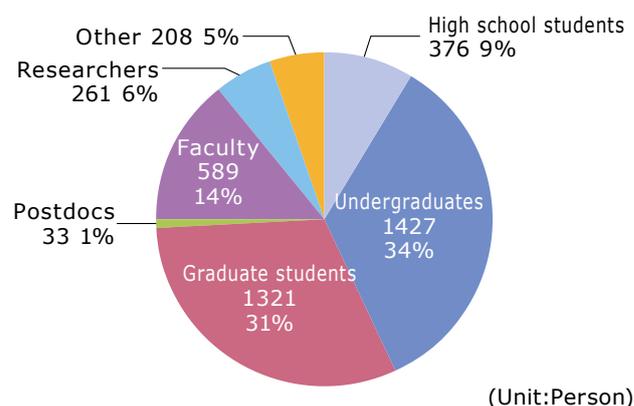
Category Country/region	By Course			By Category							Total
	A	B	C	High School students	Undergraduate students	Graduate students	Postdocs	Faculty	Researchers	Other	
China	1,250	55	83	70	375	532	15	194	97	105	<b>1,388</b>
Republic of Korea	101	6	4	0	48	52	0	9	2	0	<b>111</b>
Taiwan	208	11	10	32	73	89	1	28	4	2	<b>229</b>
Mongolia	92	6	17	38	23	19	0	16	8	11	<b>115</b>
Indonesia	217	11	30	15	120	61	3	21	25	13	<b>258</b>
Thailand	367	36	90	69	202	114	1	64	29	14	<b>493</b>
Malaysia	214	41	25	15	108	112	1	31	8	5	<b>280</b>
Vietnam	252	19	72	30	169	55	4	55	27	3	<b>343</b>
Myanmar	133	16	32	0	53	41	0	50	29	8	<b>181</b>
Cambodia	49	2	17	0	30	11	0	13	3	11	<b>68</b>
Laos	20	0	14	0	17	2	0	9	4	2	<b>34</b>
Singapore	68	0	5	31	9	2	0	10	4	17	<b>73</b>
the Philippines	77	9	2	2	55	13	0	10	6	2	<b>88</b>
Brunei	3	0	3	0	0	1	0	3	0	2	<b>6</b>
East Timor	13	0	0	10	1	0	0	2	0	0	<b>13</b>
India	230	31	14	43	62	124	5	33	7	1	<b>275</b>
Pakistan	12	0	0	0	1	5	0	5	1	0	<b>12</b>
Bangladesh	24	1	19	0	7	30	0	6	1	0	<b>44</b>
Sri Lanka	35	3	8	0	16	24	0	6	0	0	<b>46</b>
Nepal	31	4	16	0	11	23	0	8	5	4	<b>51</b>
Bhutan	23	0	0	0	17	0	0	4	0	2	<b>23</b>
Maldives	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Pacific Islands*	27	0	0	10	10	3	0	4	0	0	<b>27</b>
Kazakhstan	11	3	18	8	9	6	3	5	1	0	<b>32</b>
Kyrgyz	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Tajikistan	0	0	0	0	0	0	0	0	0	0	<b>0</b>
Turkmenistan	0	0	10	0	9	0	0	1	0	0	<b>10</b>
Uzbekistan	15	0	0	3	2	2	0	2	0	6	<b>15</b>
<b>Total</b>	<b>3,472</b>	<b>254</b>	<b>489</b>	<b>376</b>	<b>1,427</b>	<b>1,321</b>	<b>33</b>	<b>589</b>	<b>261</b>	<b>208</b>	<b>4,215</b>

\*Pacific Islands: Fiji, Marshall Islands, Micronesia, Palau, Papua New Guinea, Samoa, Solomon Islands, Tonga

### (2) Number of invitees (by region)



### (3) Number of invitees (by category)



## (4) Number of Implemented Programs by receiving organizations

## ● Universities/Technical Colleges/High Schools

Receiving Organization		Single year	Multiple years
		Number selected	Number selected
1	National Institute of Tech., Tomakomai College	1	0
2	Hokkaido Sapporo Keisei High School	1	0
3	Hokkaido Sapporo Keisei High School	0	1
4	Hokkaido Univ.	2	1
5	Muroran Institute of Tech.	1	0
6	Hirosaki Univ.	1	0
7	Iwate Univ.	2	0
8	Tohoku Institute of Tech.	1	0
9	Tohoku Univ.	5	0
10	Yamagata Univ.	3	0
11	Univ. of Tsukuba	6	1
12	Utsunomiya Univ.	1	0
13	International Univ. of Health and Welfare	3	0
14	Gunma Univ.	1	0
15	Takasaki Univ. of Health and Welfare	2	0
16	Saitama Medical Univ.	0	1
17	Saitama Institute of Tech.	1	0
18	Saitama Univ.	7	1
19	Waseda Univ. Honjo Senior High School	0	1
20	Kisarazu National College of Tech.	2	0
21	Chiba Institute of Tech.	1	0
22	Chiba Univ.	6	1
23	Meikai Univ.	2	0
24	Salesian Polytechnic	2	0
25	Shibaura Institute of Tech.	10	0
26	Tokyo Metropolitan Univ.	0	2
27	Sophia Univ.	2	0
28	St. Luke's International Univ.	1	1
29	Tamagawa Univ.	1	0
30	Chuo Univ.	1	0
31	Teikyo Univ.	1	0
32	The Univ. of Electro-Communications	5	1
33	Tokai Univ.	4	0
34	Tokyo Medical and Dental Univ.	0	1
35	Tokyo Univ. of Marine Science and Tech.	2	2
36	Tokyo Institute of Tech.	1	0
37	The Jikei Univ. School of Medicine	1	0
38	The Univ. of Tokyo	5	2
39	Tokyo City Univ.	8	0
40	Tokyo Metropolitan High School of Science and Tech.	1	0
41	Tokyo Agricultural Univ.	1	0
42	Tokyo Univ. of Science	6	4
43	Toho Univ.	1	0
44	Toyo Univ.	1	0
45	Nishogakusha Univ.	1	0
46	Nippon Veterinary and Life Science Univ.	1	0
47	Nihon Univ.	1	0
48	Hosei Univ.	2	0
49	Waseda Univ.	2	0
50	Azabu Univ.	0	1
51	Kanagawa Institute of Tech.	1	0
52	Kanagawa Univ.	1	0
53	Yokohama National Univ.	7	1
54	Yokohama City Univ.	5	1
55	Nagaoka Univ. of Tech.	1	2
56	National Institute of Tech., Nagaoka College	2	0
57	Niigata Univ.	2	0
58	Toyama Univ.	3	1
59	Kanazawa Institute of Tech.	2	0
60	Kanazawa Univ.	4	0
61	Japan Advanced Institute of Science and Tech.	4	0
62	Fukui Univ.	0	2
63	Yamanashi Univ.	1	0
64	Asahi Univ.	1	0
65	Gifu Univ.	1	0
66	Shizuoka Kita Junior and Senior High School	1	0

↓ Continued to the next page

**(Continued) Universities/Technical Colleges/High Schools**

Receiving Organization	Single year	Multiple years
	Number selected	Number selected
67 Shizuoka Univ.	6	1
68 Shizuoka Institute of Science and Tech.	1	0
69 Aichi Institute of Tech.	1	0
70 Daido Univ.	1	0
71 Chubu Univ.	1	0
72 Toyohashi Univ. of Tech.	3	0
73 Nagoya City Univ.	1	0
74 Nagoya Univ.	9	0
75 National Institute of Tech., Suzuka College	1	0
76 Mie Univ.	1	0
77 Kyoto Institute of Tech.	1	0
78 Kyoto Univ.	3	0
79 Doshisha Univ.	1	0
80 Ritsumeikan Univ.	2	2
81 Ritsumeikan Junior and Senior High School	1	1
82 Osaka Institute of Tech.	2	0
83 Osaka City Univ.	3	0
84 Osaka Univ.	6	2
85 Osaka Pref. Senri High School	1	0
86 Osaka Pref. Univ.	9	0
87 Osaka Pref. Univ. College of Tech.	1	0
88 Osaka Prefectural Tennoji High School	1	0
89 Kansai Univ.	3	0
90 Kansei Gakuin Univ.	2	0
91 Kobe Univ.	6	2
92 Hyogo Prefectural Kobe High School	1	0
93 Nara Women's Univ. Secondary Education School	0	1
94 Nara Institute of Science and Tech.	1	0
95 Wakayama Univ.	1	0
96 Tottori Univ.	1	0
97 Shimane Univ.	5	1
98 Okayama Univ.	19	2
99 National Institute of Tech., Tsuyama College	1	0
100 Notre Dame Seishin Junior High School/Girl's High School	1	0
101 Hiroshima Univ.	5	0
102 Fukuyama Univ.	1	0
103 Yamaguchi Univ.	4	0
104 National Institute of Tech., Anan College	1	0
105 Univ. of Tokushima	2	0
106 Kagawa Univ.	2	0
107 Ehime Univ.	3	0
108 Kochi Prefectural Univ.	1	0
109 Kochi Univ. of Tech.	1	0
110 Kochi Univ.	2	0
111 National Institute of Tech., Kitakyushu College	5	0
112 Kitakyushu City Univ.	5	3
113 Kyushu Institute of Tech.	8	1
114 Kyushu Univ.	9	1
115 Univ. of Occupational and Environmental Health, Japan	1	0
116 Fukuoka Institute of Tech.	1	0
117 Fukuoka Dental College	1	0
118 Fukuoka Univ.	1	0
119 Saga Univ.	3	1
120 Nagasaki Univ.	1	1
121 Nagasaki Nishi High School	1	0
122 National Institute of Tech., Kumamoto College	1	0
123 Kumamoto Univ.	11	0
124 Sojo Univ.	1	0
125 National Institute of Tech., Oita College	1	0
126 Oita Univ.	0	1
127 National Institute of Tech., Miyakonojo College	1	0
128 Miyazaki Omiya High School	1	0
129 Miyazaki Univ.	11	4
130 National Institute of Tech., Kagoshima College	1	0
131 Kagoshima Univ.	1	0
132 National Institute of Tech., Okinawa College	1	0
133 Univ. of the Ryukyus	1	0
<b>Total</b>	<b>332</b>	<b>52</b>

## ● Corporations

Receiving Organization		Single year	Multiple years
		Number selected	Number selected
1	Tohoku Tabunka Academy Foundation	2	0
2	The Takeda Foundation	1	0
3	Remote Sensing Technology Center of Japan	1	0
4	Education and Science Development Organization	1	0
5	Institute of Energy Environment Science Education Promotion	1	0
6	Japan Overseas Forestry Consultants Association	1	0
7	International Zenrin Association	2	0
8	Japan-Thailand Economic Cooperation Society	2	0
9	The Japan-China Society	2	0
10	Tokinohane	1	0
11	KOIBUCHI College of Agriculture and Nutrition	1	0
12	Association for Communication of Transcultural Study	1	0
13	Japan China Medical Association	1	0
14	Development Association for Youth Leaders	3	0
15	Asia-Pacific Cultural Centre for UNESCO	1	0
16	International Center for Environmental Technology Transfer	2	0
17	International Lake Environment Committee Foundation	1	0
18	Hiroshima International Center	2	0
19	Fukuoka Asian Urban Research Center	2	0
20	Japan International Science and Technology Exchange Center	4	0
21	Japan-Malaysia Association	1	0
22	National Institute for Environmental Studies	1	0
23	Forest Research and Management Organization	1	0
24	National Agriculture and Food Research Organization	1	0
25	RIKEN	2	0
26	National Institute of Radiological Sciences	1	0
27	National Center for Global Health and Medicine	1	0
28	National Institute of Advanced Industrial Science and Technology (AIST)	6	1
29	Japan Agency for Marine-Earth Science and Technology (JAMSTEC)	2	0
30	High Energy Accelerator Research Organization (KEK)	3	0
31	National Institute of Informatics (NII)	1	0
32	National Institute for Fusion Science, National Institutes of Natural Sciences	4	0
33	Research Institute for Humanity and Nature, National Institutes for the Humanities	1	0
Total		57	1

## ● Private Companies

Receiving Organization		Single year	Multiple years
		Number selected	Number selected
1	IPFront Inc.	1	0
2	Nippon Koei Co., Ltd.	1	0
3	Yamashita Sekkei, Inc.	1	0
4	Cathay Tri-tech., Inc.	1	0
5	Horiba, Ltd.	1	0
Total		5	0

## ● Local Governments/Other

Receiving Organization		Single year	Multiple years
		Number selected	Number selected
1	Ishikawa Prefecture (Gakuto Ishikawa International Communications Committee)	1	0
2	Fukui Pref.	1	0
3	Shizuoka Pref.	1	0
4	Mie Pref.	1	0
5	Fukuoka Pref.	1	0
Total		5	0

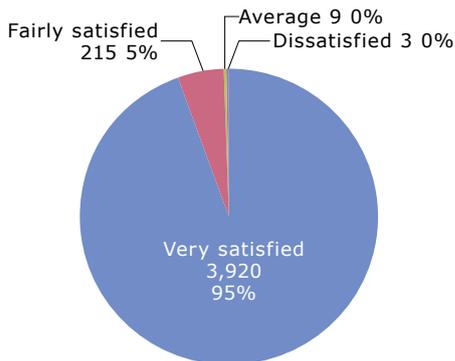
**Implemented Organizations: 176 (Single year: 167, Multiple years: 36)**

**Implemented Programs: 452 (Single year: 399, Multiple years: 53)**

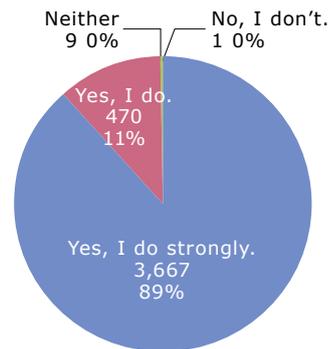
## 2. Participant Survey Results

Survey target	SSP participants in Open Application Course 2016 (including supervisors)
Survey method	Written responses to survey distributed after program completion
Number of Respondents	4,147
Gender Composition	Male: 51% Female: 49%

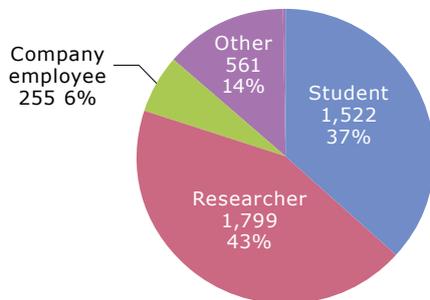
### 1) Were you satisfied with visiting Japan to participate in the SSP exchange program?



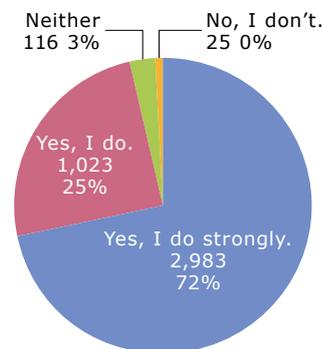
### 2) Would you like to visit Japan again?



### 3) If you answered "1. Strongly agree" or "2. Agree" on Question 2), how would you like to visit Japan again?



### 4) Would you like to receive information about Japanese science and technology or studying abroad in Japan after returning home?



### 5) Comments

SSP helps young scientists to broaden their networks. You can also learn about aspects such as hospitality, tradition, and science and technology in Japan. The things I learned in this program will not only be useful for my own life, but for the development of my home country.

(Bangladesh, Graduate Student, Male, 25)

I was able to learn many things through SSP. By participating in this program, I found that Bhutan and Fukui had a "high level of happiness" in common. We also experienced advanced technology, and learned that science and technology play a significant role in national development.

(Bhutan, Undergraduate Student, Female, 20)

SSP allowed us to see the development of Japan, and was a good opportunity for us to learn about the difference between China and Japan. By talking with Japanese, I strongly felt that education forms the foundation of national development. I was highly satisfied with my experience in the program.

(China, Undergraduate Student, Female, 20)

I believe that students can help bring about national development in any country, and ideas for innovation can stem from learning about other countries. Participating in this program can help us gain new technology and ideas, and influence our future careers.

(India, Undergraduate Student, Male, 20)

Indonesia is an island country, so technical experts have the responsibility to protect our shores. Learning about oceanography in this program furthered my motivation to become a capable technologist who can protect our land.

(Indonesia, Undergraduate Student, Female, 21)

We were taught by the best instructors in Japan in our respective fields. This experience was priceless, and every single day was truly enjoyable. From our arrival in Japan to our departure, I never had any disappointments.

(Malaysia, Undergraduate Student, Male, 21)

Learning about waste management, I had imagined the facilities to be overflowing with waste, but the reality was completely different. I was surprised at how safely the waste was being processed in Japan. While there were some processing facilities that may be difficult to build at home, the 3R process (reuse, recycle, reduce) is definitely something we should implement. I also realized that waste management and climate change are equally important, and I hope to use what I learned here after graduation.

(Marshall Islands, Undergraduate Student, Male, 21)

My experience in Japan was the best time I have ever had. I gained new knowledge and new friends while learning about Japanese culture. I learned many things when visiting the wastewater processing facilities, which is a huge issue in Mongolia. I had an invaluable experience in Japan.

(Mongolia, Graduate Student, Female, 32)

Participating in this program is the best experience I have had in my life. I hope to bring my new ideas back home and make them useful for daily life.

(Nepal, Undergraduate Student, Female, 21)

Learning about water management at Kumamoto Prefecture was particularly interesting. I would like to teach others in my home country, Pakistan, that effectively reusing underground water helps prevent floods and leads to water conservation, while also improving the volume and quality of tap water.

(Pakistan, Graduate Student, Female, 29)

I was moved by many things in Japan, and every moment was precious. The friendly people, surprising technology, even the breeze felt good. I learned about the term "value" in Japan. Understanding how the Japanese value culture and identity was the most precious experience I had.

(Papua New Guinea, High School Student, Female, 17)

During the program, I felt influenced and supported by the passionate and proud expressions of the participants from Japan and other countries. I was able to experience science in a tangible environment that went beyond textbooks, while learning about the spirit of scientists.

(Philippines, High School Student, Female, 18)

There were many occasions when I was also able to learn from program participants of other countries. I learned how to listen to opinions and respect others.

(Sri Lanka, Graduate Student, Male, 29)

I was able to learn about Japanese culture and technology through this program, and it was almost like seeing new horizons open up for me. I hope to take what I learned in Japan, and use it towards making the world a better place.

(Thailand, Undergraduate Student, Male, 22)

Through participating in this program, I rekindled my passion towards robotic development. Working with my teammates to construct a robot was an amazing experience. It was the first time I gained friends from other countries. I had been planning to study abroad in the U.S., but I began considering Japan as an option.

(Taiwan, Undergraduate Student, Male, 21)

I had an invaluable experience in Japan, the land of the rising sun. In my home country, Vietnam, Japan is known as a wonderful place. I had numerous "wow!" experiences upon actually coming here. Japanese culture is rich and diverse, and I was interested in how this culture is being passed down across generations.

(Vietnam, Instructor, Female, 32)



Exchange program between Tokyo Metropolitan University and university students from the Philippines (October 2016)

Japan-Asia Youth Exchange Program in Science

**SAKURA Exchange Program in Science**  
**Activity Report on Open Application Course 2016**

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