Autumn 2023

LITTERAE POPULI

A news magazine presented by Hokkaido University

Recent News from Hokkaido University

Litterae Populi

Litterae Populi is a bi-annual magazine with the latest news about Hokkaido University. Its name is Latin for "letters of the poplar trees."

Contents

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Cover Photo taken at Sapporo Agricultural College's Farm No. 2


Photo of School of Agriculture

Feature: In Response

Hokkaido University is celebrating the 147th anniversary of the founding of its predecessor, Sapporo Agricultural College.

By establishing HU VISION 2030, the University aims to become a Novel Japan University Model, a new model for Japanese universities that generates a significant social impact by solving global issues.

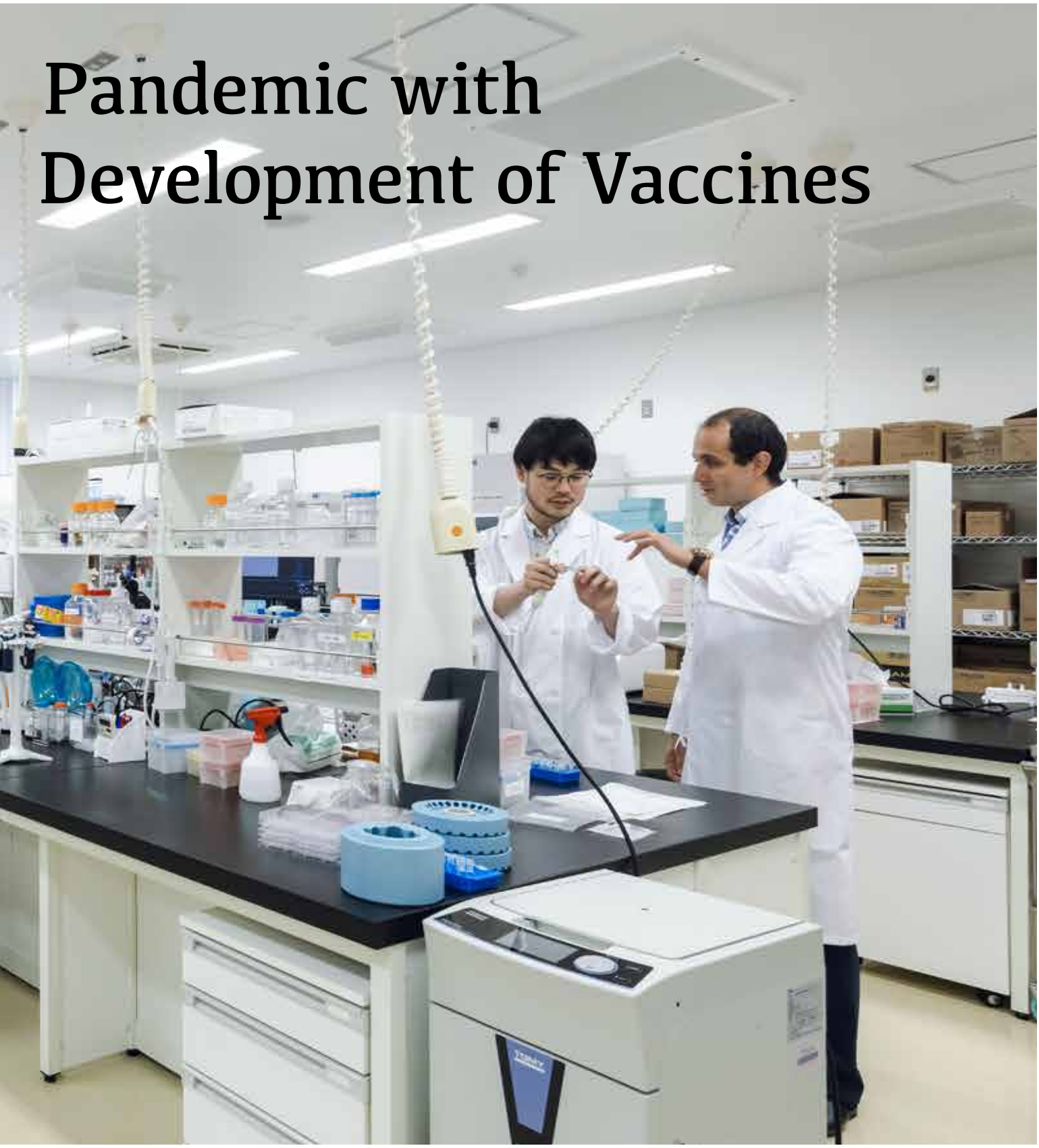
Here we present two initiatives under the theme of "In Response".

To Prepare for the Next Domestic Research and

Feature:
In Response

Institute for Vaccine Research and Development (IVReD)

Pandemic with Development of Vaccines



IVReD laboratory – where basic research is focused on its practical applications.

To develop a preemptive strategy against zoonotic diseases, a new hub specializing in vaccine research and development was established.
The aim is to perform prompt vaccine development and its social implementation from basic scientific research results originated in from Hokkaido University.

Virus neutralization test to measure antibody titers.

National project for domestic development of vaccines

The novel coronavirus infection (COVID-19) has spread dramatically since its early recognition as a global pandemic in 2020; furthermore, cumulative cases have exceeded 670 million worldwide by 2023.

In April 2022, the Ministry of Education, Culture, Sports, Science and Technology and the Japan Agency for Medical Research and Development (AMED) launched a project

to establish research centers —including a flagship center, synergy centers, and support centers— for the promotion of domestic development of vaccines for the infectious disease under the "Japan Initiative for World-leading Vaccine Research and Development Centers".

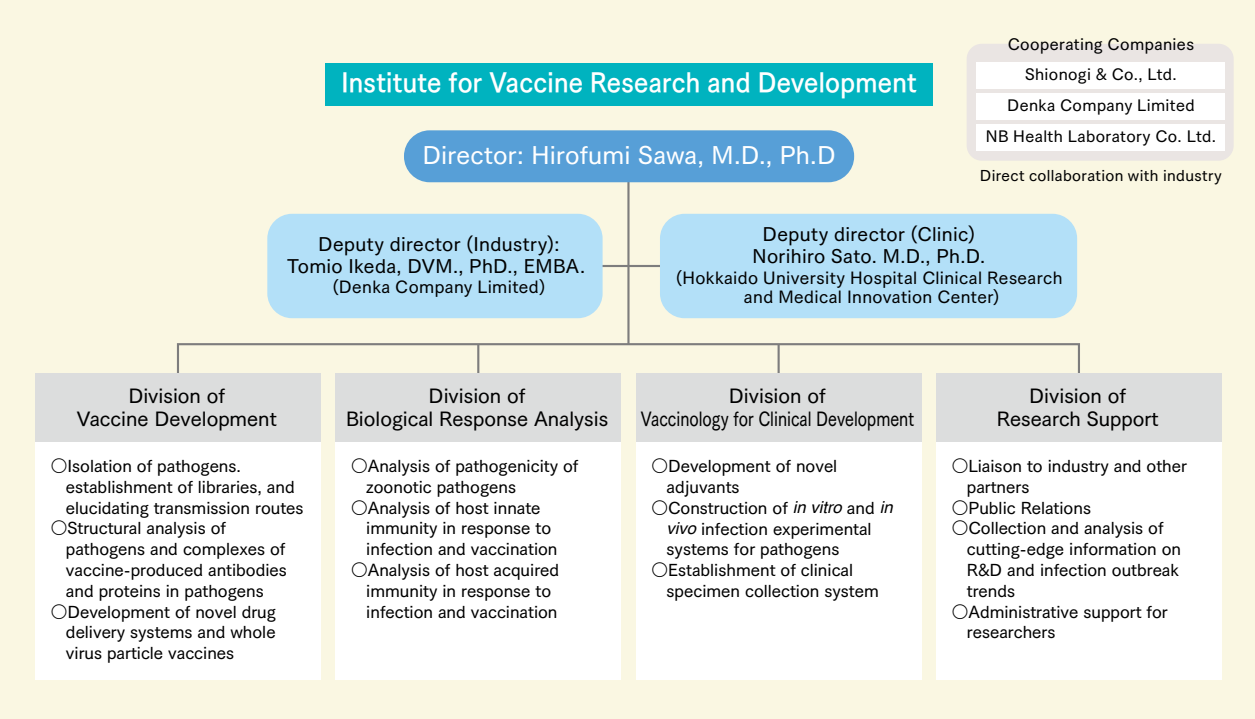
The University of Tokyo was selected as the flagship center, which takes a leading role, while the four universities of Hokkaido University, Chiba University, Osaka University, and Nagasaki University were selected as the synergy centers. Hokkaido University consequently established the Institute for Vaccine Research and Development (IVReD) within the Creative Research Institution at the northern part of the Hokkaido University Sapporo Campus in October 2022.

Vast knowledge of zoonotic diseases

The director of IVReD is Professor Hirofumi Sawa (Distinguished Professor). He has been engaged in research to overcome zoonotic diseases for many years, and also has served as a professor at the Hokkaido University Research Center for Zoonosis Control (now, International Institute for Zoonosis Control) since 2005. Professor Sawa explained the establishment of IVReD as follows.

"Hokkaido University International Institute for Zoonosis Control has been involved in the elucidation of pathogen propagation routes, analysis of the pathogenesis mechanism of pathogens, and development of preventive, diagnostic, and therapeutical methods as the three pillars of basic research. These achievements must have been highly

Professor Sawa, the director of IVReD.



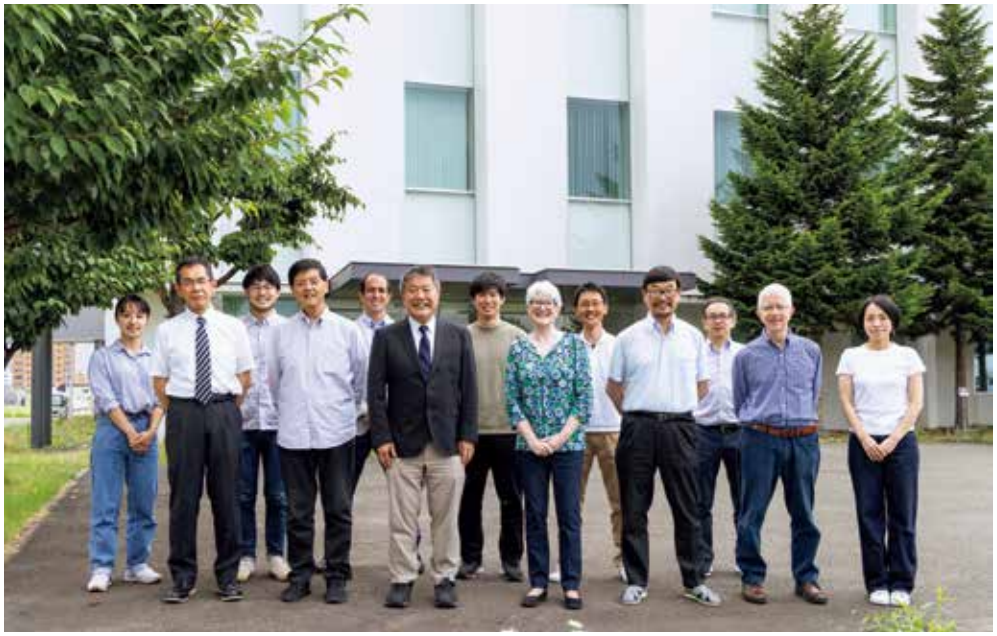
evaluated as strengths of Hokkaido University to be selected as a synergy center."

Since its establishment, the Institute has created libraries of viruses, bacteria, and other pathogens that may cause human infection and promoted basic research on vaccine development ahead of others. In addition, collaboration research with Shionogi & Co., Ltd., which led to the development of Xocova®, Japan's first domestically produced COVID drug, is still fresh in our memory.

Based on these activities, IVReD was adopted as one of the world-leading vaccine and research and development centers.

Preemptive strategy to prevent pandemics

The organizational structure of IVReD consists of four divisions—the Division of Vaccine Development, Division of Biological Response Analysis, Division of Vaccinology for Clinical Development, and Division of Research Support—under a Director and two Deputy Directors. IVReD is focusing vaccine research and development targeting zoonoses, mainly influenza, coronavirus disease, and tuberculosis. Its goal is a preemptive strategy to prepare preventive, diagnostic, and therapeutic methods before the occurrence of a pandemic.



International collaboration in IVReD.

All-Hokkaido University R&D system

IVReD consists of multiple institutes and departments of Hokkaido University, such as Hokkaido University Hospital, which is located on the same campus, as well as the International Institute for Zoonosis Control, Faculty of Medicine, Faculty of Pharmaceutical Sciences, Faculty of Veterinary Medicine, and Institute for Genetic Medicine, among other departments. "When a vaccine is in the stage of social implementation, it is necessary to provide information to the public and to predict and verify the vaccine's economic effect, which requires the involvement of researchers in the fields of humanities and social sciences of the University. This can further demonstrate the potential of the All-Hokkaido University system," says Professor Sawa.

Professor Yasuhiko Suzuki (Distinguished Professor) of the International Institute for Zoonosis Control, who is the Head of the Research Support Division, serves as the contact person in charge of coordination and information exchanges with the flagship center (The University of Tokyo) and other synergy centers under the management of the Strategic Center of Biomedical Advanced Vaccine Research and Development for Preparedness and Response (SCARDA) of AMED.

Professor Suzuki says, "Research subjects promoted by individual researchers will be monitored in detail in addition to the progress of the project as a whole, so that adjustments can be made as necessary to ensure smooth research activities. Reaching out to society to show the

content of research performed at the Institute is also an important goal."

Cooperation systems have also been established with outside parties, including Shionogi & Co., Ltd., Denka Company Limited, NBHL Co., Ltd., and other companies. In terms of international cooperation, information concerning infections and R&D trends will be collected both in and outside Japan and available information will be shared with other centers through integration with international research/education networks established by the University's Global Institution for Collaborative Research and Education (GI-CoRE). Professor Suzuki expressed his enthusiasm saying, "We wish to provide steady logistic support for the social implementation of the basic research results of the International Institute for Zoonosis Control. We can proceed even faster than before."

Professor Suzuki, the Head of the Division of Research Support.

Expectations for young researchers

There are many young researchers working at IVReD. Members with diverse backgrounds—specializing in immunity, clinical application, information science, and other fields—all work in the same laboratory.

Specially Appointed Associate Professor Kensuke Takada of the Division of Vaccinology for Clinical Development says, "There is an atmosphere where researchers with different specialties help each other toward a single goal. I expect innovation to be created where diverse fields interact with each other."

Specially Appointed Assistant Professor Koshiro Tabata of the Division of Biological Response Analysis, who specializes in pharmaceuticals science, says, "Since the role of manufacturers that commercialize vaccines and send them out to society is essential, I also think it is important to have the insight to convince them about the developed product."

Specially Appointed Assistant Professor Hiroto Takeuchi of the Division of Vaccinology for Clinical Development said that he joined IVReD because he wanted to see his research results applied to clinical practice. A strong awareness of "outlets" for the results of basic research on preventive and therapeutic applications in addition to the research itself is a mindset shared by young researchers who gather here.

Specially Appointed Associate Professor Gabriel Gonzalez of the Division of Research Support is in charge of the information science fields, including data processing/analysis and simulations. "To demonstrate the efficacy of the developed vaccines it is also important that we clearly show the data analysis and development rationale to the community."

Professor Sawa also remarked, "It is very significant that young researchers, such as alumni of the Graduate School of Infectious Diseases and the Graduate School of Veterinary Medicine, become interested and participate in our activities under our university's One Health Frontier Graduate School of Excellence program." IVReD will perform vaccine research and development involving many young researchers.

Young researchers from different fields work together at IVReD.

Environment filled with a vaccine development spirit

Yukari Itakura

Institute for Vaccine Research and Development (IVReD), Hokkaido University
Specially Appointed Assistant Professor

Specially Appointed Assistant Professor Yukari Itakura of the Division of Biological Response Analysis is working on oral rabies vaccine development with a view of environmental dispersion. Rabies, which is a zoonotic disease, is preventable, but there are no effective therapeutics against it, and it is almost impossible to escape death once rabies symptoms appear. In the field of veterinary medicine, vaccine research is aimed to control the disease on the animal side.

"In western countries, wild animals may be given oral vaccines using attenuated viruses, which have been proven to be efficacious. However, in India and other countries where many stray dogs sharing living environments with humans, there is a risk that humans may consume vaccine-mixed food if it is placed outdoors or spread through air. The subject of my research is the development of a safe oral vaccine for dogs that can be spread in environments where people and animals coexist."

Dr. Itakura, who belonged to the laboratory of Professor Sawa when she was a student, joined IVReD because it gave her meaning to give back her research results to society. "I think members of IVReD are highly motivated to create vaccines with their own hands. I can feel the high level of commitment among them. Apart from being able to receive guidance from the world's top-class researchers, it is also a precious experience to conduct research together with members of other universities and companies. I hope to help many people by working on the development of vaccines and therapeutics in this favorable environment."

Nanae Fresh-Water Station, Field Science Center for Northern Biosphere

To be a laboratory that meets the needs of society

Feature: In Response

The Nanae Fresh-Water Station is one of two fresh-water testing facilities of Hokkaido University. In the more than 80 years since its establishment in 1940, the Station has played flexible roles depending on the needs of the times. In recent years, it has also launched the utilization of "deliverable fish," besides its student training and researcher support efforts.

Highly skilled staff and an open environment

The Nanae Fresh-Water Station, where 12 species and 19 strains of salmon/trout (at the time of the interview) are bred for educational and research purposes, is about a 20-minute drive from Hokkaido University Hakodate Campus. It started out as a fish cultivation site of the Hakodate College of Fisheries, the predecessor of the Hokkaido University School of Fisheries Sciences. It later became a facility of the School of Fisheries Sciences and was brought under the aquatic research stations of the Field Science Center for Northern Biosphere—which was established in 2001 to integrate field science-related research facilities. The Station has many breeding tanks in a research building with indoor breeding rooms and twenty concrete outdoor ponds.

The Nanae Fresh-Water Station opens its doors for research and education from inside and outside Hokkaido University. The Station where a few elite members conduct research on fish may give an impression of a rigid organization dedicated only to research, but the staff aim to create an experiment station rooted in society and the local community. In addition to training and technical guidance for students of Hokkaido University and other universities, it conducts biological experiments for elementary and junior high school children as well as programs for high school students. The Station also sees dissemination of a fish-eating culture as a mission of fisheries science, and is currently promoting the Hokkaido University Trout Project to sell surplus salmon and trout as products, in cooperation

Breeding facility at the Nanae Fresh-Water Station. A total of 12 species (19 strains) of salmon/trout are kept at the Station.

with private companies in southern Hokkaido.

"The basis of this Station is the succession of fish species through artificial breeding to maintain and provide educational and research materials to researchers inside and outside Hokkaido University," says Associate Professor Seishi Hagihara of the Station, who assumed the post in March 2023. The Nanae Fresh-Water Station is operated by a very small staff and is supported by Dr. Eisuke Takahashi, a technical assistant working at the station for 11 years. He is in charge of general maintenance and management, and also that of the facilities. Associate Professor Hagihara praises him highly saying, "His experience and skills are number one at Hokkaido University, especially when it comes to breeding salmon/trout."

Cherry salmon bred in a water tank.

There are sixteen round tanks for adult salmon and trout and nine for adult sturgeon in the outdoor area.

Associate Professor Seishi Hagihara (left) and Dr. Eisuke Takahashi (technical staff, right) of the Nanae Fresh-Water Station.

Meeting the demands of researchers with finely-tuned responses

The facility seems small in scale and not particularly well-equipped with high-tech devices. Why, then, is it conducive to research? Its best attribute is the attention paid to detail. Dr. Takahashi emphasizes, "Individuals handled as one lot at other larger breeding farms are carefully separated here, depending on the fish that fertilized the eggs. We do it to meet the research demands of users. Such a detailed response is the selling point of Nanae, and an important factor forming the basis of its existence." The Station has played its roles flexibly depending on the needs of the times since its establishment. Recently, aquaculture has been attracting attention for its potential contribution to easing the burden on natural resources.

Ideas behind the sales of "deliverable fish"

Even the Station, which has accumulated know-how for many years, has some difficulties with the breeding of fish. To prevent a situation of not being able to provide enough fish due to an unexpected outbreak of disease, many fertilized eggs must be produced. "Production adjustment is very difficult. No matter how experienced you are, you can't predict the number of surplus fish. As a person handling living creatures, it is mentally hard to have to dispose of them, to waste them," says Associate Professor Hagihara. A new effort under these circumstances is the utilization of these unused fish by changing the name to "deliverable fish." The University has registered the Hokkaido University brand of products using these salmon and trout. Smoked cherry salmon was sold on a trial basis in June this year, in cooperation with graduates of the School of Fisheries Sciences. It is also planned to sell the surplus offspring of the wild sturgeons—caught along the coast of Hokkaido—that are artificially bred at Hokkaido University. Another purpose of selling products is to demonstrate the appeal of fisheries science and the Station to future students. The name "deliverable fish" means "all fish raised at the Station are deliverables (even if they are unused fish)."

The role of the Station as a provider of field practice unique to the northern hydrosphere should also be mentioned. It has been designated by the Ministry of Education, Culture, Sports, Science and Technology, as a joint-use center for experience-based education to learn about the aquatic environment of Hokkaido as a food base, alongside the Usujiri Fisheries Station and Oshoro Marine Station run by the University. Specially Appointed Assistant Professor Mika Kuroda, who is known for her research on stranded whales and is responsible for marine mammal practice, says, "The Nanae Fresh-Water Station is fully capable of breeding and maintaining fish from the stage of eggs until they become adults and die. It's the only facility of its kind that possesses not only the equipment, but also the know-how handed down from generation to generation."

To be a research facility that contributes to the real world

At the Nanae Fresh-Water Station, many different kinds of fish are bred under a variety of conditions found nowhere else. The range of services provided gives one a false impression that it must be a larger facility. In 2011, 16 modern round breeding tanks were installed. What kind of vision does Associate Professor Hagihara have now?

"Meeting demands of users is our highest priority. If someone wants to conduct a certain kind of research, I would consider all possible ways of meeting the person's needs in a proactive manner. Since many researchers of the School of Fisheries Sciences conduct research in close relationships with industry, I'd like to meet the social needs by supporting their research as far as possible." He emphasized the strong will to contribute to solving real-world issues by meeting the demands of various users.

Close-Up

Ryuzo Yanagimachi received the Kyoto Prize

–Science is not a job, it is a passion–

Ryuzo Yanagimachi, an honorary degree recipient from Hokkaido University (Professor Emeritus, University of Hawai'i) photographed at the Large Auditorium of the School of Science, Hokkaido University, in July 2022. (Courtesy of Like! Hokudai)

Ryuzo Yanagimachi (Professor Emeritus of the University of Hawai'i), who graduated from the School of Science, Hokkaido University, and specializes in reproductive biology, received the 38th Kyoto Prize in 2023, for his contributions to the elucidation of fertilization mechanisms and the establishment of micro-insemination technology. He was bestowed an honorary degree by Hokkaido University. What are his achievements?

Dr. Yanagimachi was born in Ebetsu, Hokkaido, in 1928, and grew up in Sapporo. He entered the Department of Biological Sciences, School of Science, of Hokkaido University, and now looks back on his days at the University. "It was just after the war, and I was very poor. We were short of food, and there were fields all over Sapporo. In those days when dedicating your life to the country was considered honorable, I was lucky to be alive and immersed myself in research. I received practical training at the Oshoro Marine Station in my first year. I learnt to mix sperm and eggs taken from sea urchin to fertilize them and observed their development. I was fascinated by their very dynamic life cycle. I also became very interested in the phenomenon that our genetic information was inherited from germ cells, such as sperm and eggs, and wanted to pursue this field."

After graduating from the School of Science, he conducted research on the fertilization of herring, salmon, and other fish, and the sex determination of barnacles as a postgraduate. In 1960, he earned his PhD in Science (animal embryology) from Hokkaido University. Although Dr. Yanagimachi wanted to continue his research at the University, he became

Dr. Yanagimachi when he was a student at Hokkaido University (front row, third from the left, photographed in 1952, courtesy of Dr. Yanagimachi).

a science teacher at Sapporo Minami High School on the recommendation of his PhD supervisor. As he maintained his passion for research, he resigned after teaching for one year, thinking that it was wrong for both his students and himself to keep on teaching. He was then employed as a postdoctoral fellow at the laboratory of Dr. M. C. Chang of the Worcester Foundation for Experimental Biology in the United States.

In those days before the Internet or e-mail, Dr. Yanagimachi sent a letter requesting postdoc employment. "Since Dr. Chang was a researcher of mammals, I was surprised when I, who was not working with mammals, got an OK from him. I later asked Dr. Chang why he had employed me, and he said that it was because I was doing very good research on fish. If he had not appreciated my fish research, I wouldn't be where I am now," reflects Dr. Yanagimachi, about those days.

In 1963, Dr. Yanagimachi succeeded in achieving in-vitro fertilization of hamsters*1 under the guidance of Dr. Chang. He then conducted research on fertilization phenomena using this method, and elucidated various phenomena that occur during fertilization, including the process whereby sperm acquire fertility and the responses of eggs.

Dr. Robert G. Edwards traveled all the way from Britain to learn about in-vitro fertilization from Dr. Yanagimachi. Dr. Edwards took the technology home with him, and succeeded in realizing the world's first birth of a human child conceived using in-vitro fertilization at Cambridge University in 1978. He received the Nobel Prize in Physiology or Medicine in 2010 for this achievement.

"Edwards had been thinking that in-vitro fertilization technology was applicable to human fertility treatment, but was unsuccessful and came to learn and use my techniques. There was heavy criticism of in-vitro fertilization of humans in those days, but he endured such criticism and his patience finally paid off. Although I actually had the opportunity to convert to applied research on humans, I chose a career in basic research as I was interested in the phenomenon of fertilization itself. Since the fertilization of mammals occurs inside their bodies, it is very difficult to study. So, I established the in-vitro fertilization technique as a method for observing fertilization outside the body. Even though I had not been aiming at a medical application, I'm glad that I could actually make a contribution," says Dr. Yanagimachi. He says that he always sees himself as a researcher conducting basic research.

In 1964, Dr. Yanagimachi returned to Hokkaido University as a part-time lecturer. Although there was a plan to hire him as an assistant professor, it did come to pass. "Fortunately or unfortunately, I could not remain at Hokkaido University. I was invited as an assistant professor of the University of Hawai'i, and went back to the States. People may think I've been successful in my career, but my young days were full of struggles, having no luck in finding jobs and failing repeatedly in my research," says Dr. Yanagimachi.

After moving to the University of Hawai'i in 1966, he continued his research on fertilization for 40 years at the University and accomplished a number of achievements, including successfully cloning mice by somatic cell nuclear transfer, until he became a professor emeritus in 2006.

Even after he left the front lines of research, he has continued joint research with his students all over the world, and is still engaging in research on fertilization at the age of 95. Due to his sincere attitude to spend his life as a researcher and his gentle nature, he is respected and worshiped by many people.

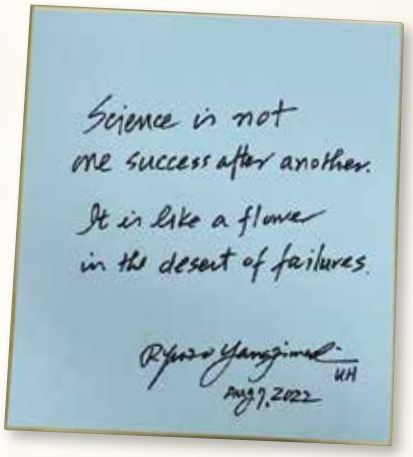
Dr. Yanagimachi in front of the School of Medicine, University of Hawai'i (photographed in 1974, courtesy of Dr. Yanagimachi).

Professor Emeritus Takayuki Takahashi (Faculty of Science), who is a close friend of Dr. Yanagimachi, says, "Although Dr. Yanagimachi received many famous academic prizes in the past, the Kyoto Prize once again proved his excellent research results on a global level. When he visited Japan, he enjoyed the medaka fertilization research at my laboratory. Among the many things I learned from him, I was most impressed by the importance of maintaining the will to conduct high-level research. The encounter with Dr. Yanagimachi is a great treasure of my life."

The contribution of Dr. Yanagimachi, who maintained his stance toward basic science to elucidate fertilization as a life phenomenon, to present-day developmental/reproductive medicine, is immeasurable.

*1: In-vitro fertilization is a fertility treatment technology whereby eggs that grew in a woman's body are removed and fertilized by contact with sperm outside the body.

Dr. Ryuzo Yanagimachi passed away at the age of 95 on September 27, 2023.



A signature board from Dr. Yanagimachi when he visited the Noto Center for Fisheries Science and Technology, College of Science and Engineering, Kanazawa University. It reads "Science is not one success after another. It is like a flower in the desert of failures." (donated in August 2022, courtesy of Assistant Professor Tatsuro Harumi, Asahikawa Medical University).

Scan here for the video of the interview with Dr. Yanagimachi when he visited the Faculty of Science, Hokkaido University, in July 2022.

Guest

TANAKA Kensuke

Chairman of Tanaka Gakuen

Mr. Kensuke Tanaka fascinated fans as he kept running across the baseball field as a NBP and MLB player for some 20 years. He is currently nurturing the hearts of nursery school, kindergarten, and elementary school children as the chairman of Tanaka Gakuen and Tanaka Gakuen Welfare Association.
President Kiyohiro Houkin, who is promoting reform to realize an unprecedented university, interviewed Mr. Tanaka about his life and career change, and how his passion for education will expand future possibilities.

Contributes to Hokkaido by helping realizing children's dreams and growing together with them, with the slogan, "Nice Try!"

Days of practice and effort to realize his dream of becoming a baseball player

Houkin: I suppose you are not only busy as the chairman of Tanaka Gakuen, but also in many other ways.

Tanaka: I put full effort in everything, that is, 70% in my work as the chairman, 20% in the training of Nippon-Ham Fighters team players and the rest in my work as a professional baseball commentator.

Houkin: I understand you are from Chikushino, Fukuoka. How did you get involved in baseball?

Tanaka: I began to play baseball when I was in the second grade of elementary school under the influence of my older brother who was playing baseball. I played baseball almost every day, and continued to do so after I became professional. So I didn't have much experience going somewhere on my days off (laugh).

Houkin: You were in Higashifukuoka High School, which was known to be strong in sports.

Tanaka: I went to the Koshien high school baseball tournament three times—spring and summer of my second year and summer of my third year.

The manager at the time asked me what I wanted to become in the future, and as my answer was a professional baseball player, he set goals to make my dream come true. Although those days were very hard, I managed to get through them thanks to his guidance toward my goal.

Houkin: You were drafted to join Nippon-Ham Fighters and started your career as a professional baseball player in 1999. I was surprised that it took more than six years until you became a regular player. Didn't you consider following a different path during those years?

Tanaka: As the career of an average professional baseball player is around 7 years, I had almost run out of time when I became a regular player in my seventh year. I think I worked my way up very slowly.

However, I believed that I would have a chance, especially with batting, and that all I had to do was to improve my fielding.

Houkin: When you became a regular player, the Fighters seemed to be especially strong.

Tanaka: I became a regular in 2006, when the Hokkaido Nippon-Ham Fighters became the national champion for the first time. The ten or so years after that were really the golden age for me. I'm the only player who has experienced five league- and two national championships.

Houkin: Could you tell me how you practiced and what you did from a mental perspective to maintain a regular position in professional baseball?

I think "Boys, be ambitious" was life itself for Dr. Clark, and the attempts of Mr. Tanaka embody the philosophy of his school.

– Dr. Houkin

Tanaka: Baseball is basically a cat-and-mouse game. You have to get ahead of the opponent, or you'll lose. I tried to predict the future and act boldly. That's why I dared to make drastic changes when I was getting results.

Especially during games, there are many things that have to be predicted. When batting, some are good at guessing if the pitch will be a fastball or a breaking ball. I was probably good at that.

A new challenge – choice to be a major league player

Houkin: Why did you want to be a major leaguer? I think you had various options at the time and you were at a fork in the road of your life.

Tanaka: I wanted to keep taking on new challenges, probably because of my nature. I also easily get

bored (laugh). I knew that I should be able to keep a regular position, but sometimes I felt it wasn't enough …

At the same time, I thought I should stay with the Fighters considering my future and for a living. It caused me much distress. Nevertheless, my wish to go to the States was stronger, and I decided to sign a minor league contract. Even though I had to dip into my savings for a living, I had a strong desire to play in the States.

Houkin: You must have gained a lot by becoming a major leaguer.

I was consciously trying to predict the future and act boldly. I wanted to keep taking on challenges.

– Mr. Tanaka

Tanaka: Actually, I experienced many more hardships. Life has its ups and downs. If you dare to jump down when things are looking up, you may actually be able to take advantage of the situation.

In that sense, I think making the big decision to try to be a major leaguer was good for me, after all.

Houkin: I think it is a very important point. As far as Hokkaido University is concerned, "Boys, be ambitious" was not just a verbal message of Dr. Clark. Since it meant life to him, people could feel with him and followed him. Your school's educational philosophy and the three Cs representing its children—challenge, collaboration and contribution—must have been greatly affected by your experience in the States.

Feelings for Hokkaido and second career decision

Houkin: Were you strongly considering returning to the Fighters when you returned from the States? Did your feelings for Hokkaido affect your decision?

Tanaka: I wanted to come back to Hokkaido one day. I was thinking about retiring in the States, but I came back at the right time as I was still physically strong and had the opportunity to play for the Fighters again.

Since I became a regular player after the team moved to Hokkaido, I feel like I grew up in Hokkaido even though I was born in Fukuoka. I also received warm cheers when I went to the States. The team lost many games and was not very popular in the early days after relocating, but as we became stronger, our popularity gradually increased. The feeling of unity we built together is still in my heart.

Houkin: What I mostly wanted to hear about today is your second life after being a professional baseball player. I guess there are many different choices, but the choice to make a transition to the field of education seems quite rare.

Tanaka: I didn't see education as a business. I was envisioning a life of being surrounded by children as the principal when I'm about 60, and I made my plans mostly by myself without consulting anyone.

I tried to start a kindergarten or nursery school at first, but it didn't work out well. Then I decided to open an elementary school as I could obtain school corporation status. However, I didn't even know how to make an application and had to visit the Hokkaido government office many times. As I was told that it would be impossible to fill out all the forms by myself, I decided to seek help from an administrative scrivener.

Fortunately, I was able to open the school at its

current location by entering into a partnership with Ritsumeikan Keisho and securing the minimum scale and area necessary with my limited funds.

Houkin: The idea of establishing a private elementary school in Sapporo may be unprecedented.

Tanaka: Since the overwhelming majority of schools in Sapporo are public schools, establishing a private school might have been unconventional. But I felt that a private elementary school was necessary in Sapporo. Some people also said that there weren't enough facilities for further education, so I thought there was a chance to solve the problem.

As I think early childhood and elementary education is important, I'm currently running a certified childcare center/kindergarten/nursery school in addition to the elementary school. I feel that I'm closer to the goal I had envisioned now.

To produce 12-year-olds who challenge the world from Hokkaido

Houkin: Could you tell me what kind of elementary school and what kind of education you want to provide as the chairman?

Tanaka: From a technical aspect, we focus on English and ICT, and I feel that the children's academic ability is steadily improving. From a mental aspect, I tell the children that having a mindset to keep trying to find a new self regardless of your age will help them lead their lives into a good direction, under the school motto of "Linking learning to happiness." Our slogan is "Nice Try!"

Houkin: I think your attitude is conveyed to children because you have led a life of "Nice Try" yourself,

Now, could you tell me about your future dreams and prospects?

Tanaka: I hope that the children will play leading roles in Hokkaido 20 years from now. Just like Fukuoka Softbank Hawks, which brought about a major change in the Japanese baseball world, our school should stand in front of others. I want my school to set an example.

Although the scale of our school is small, it is

I think the attitude of the chairman is conveyed to children because he has always led a life of "Nice Try" himself.

– Dr. Houkin

HOUKIN Kiyohiro

President, Hokkaido University

Born in Hokkaido in 1954. Graduated from Hokkaido University School of Medicine. Doctor (medicine) (Hokkaido University). Worked for Hokkaido University Hospital and other facilities since 1979. After working as a visiting researcher at the University of California, Davis, became an assistant professor at the Hokkaido University Graduate School of Medicine in 2000, professor of Sapporo Medical University School of Medicine in 2001 and professor of the Hokkaido University Graduate School of Medicine in 2010. After becoming the director of Hokkaido University Hospital and vice executive president of Hokkaido University in 2013, and the director of Hokkaido University Hospital and vice president of Hokkaido University in 2017, assumed the present position in October 2020.

better for making bold attempts. We are currently engaging in activities surrounding English education and learning support in cooperation with the local government. I intend to further promote these activities.

Houkin: What are the common and different points between fostering professional baseball players and children?

Tanaka: I think it's basically the same. Build-up-type guidance is currently given both in professional baseball and elementary schools. On the other hand, backward guidance to overcome insurmountable barriers is not very common. However, both are important, and keeping a balance between them is very important.

Another important common point is to learn how to lead one's life in the future, in addition to learning the technical aspects. I think fostering the ability to survive after the end of your career and education with a view on the future are the same thing.

Houkin: It's back-cast thinking to consider what you should do by thinking backward from your ideal future status.

Lastly, could you give a message to Hokkaido University?

Tanaka: We hold an annual event called World Day. We invite people from different countries, including international students of Hokkaido University, to spend time with children for two days or so.

As Hokkaido University is a centerpiece of Hokkaido, others will follow its examples in many cases. I think the ability to break through will create the future. I hope Hokkaido University will open up and break through a new future as a world-class university.

Houkin: If you try to advance side-by-side, you have to keep pace with others. I think someone needs to come forward to open up the future. I hope Hokkaido University will take a lead and break through. Let's both work to foster "human resources who challenge the world."

Thank you very much for today.

I hope to foster a challenging spirit regardless of age.
I want children to play active roles as leaders of Hokkaido in the future.

– Mr. Tanaka

TANAKA Kensuke

Chairman of Tanaka Gakuen

Born in Fukuoka Prefecture in 1981. Joined Nippon-Ham Fighters from Higashi Fukuoka High School as the second round draft pick in 1999. Became a regular player in 2006, and contributed to the team's five league and two national championships. Signed a contract with San Francisco Giants in the US in 2013 and was called up to MLB in July that year. Returned to the Nippon-Ham Fighters in 2015 after playing in the US and retired in 2019. Played in 1,634 games in total in Japan and the US, received the Best Nine Award (best second baseman) six times and the Golden Glove Award five times. Became the chairman of Tanaka Gakuen in 2020. Opened Tanaka Gakuen Ritsumeikan Keisho Elementary School in April 2022.

Refining: Comparative Cognitive Science

Elucidating the path of evolution and development of mind Through cross-species comparison including humans

Laboratory of Behavioral Science, Research Group of Behavioral Science, Division of Human Sciences, Faculty of Humanities and Human Sciences, Hokkaido University

TAKIMOTO Ayaka

Associate Professor

Doctor of Literature specializing in comparative cognitive science. Completed the doctoral course of the Graduate School of Letters, Kyoto University. After working as a special research fellow of the Japan Society for the Promotion of Science (PD: Graduate School of Arts and Sciences, The University of Tokyo), became an associate professor at the Graduate School of Letters, Hokkaido University in 2015. Appointed to current position in 2019.

Wishing to understand what animals think Encounter with animal psychology

Comparative cognitive science is an academic field that elucidates the evolutionary processes of cognitive functions by studying such functions in various animals, including humans. This field emerged between the late 1980s and early 1990s based on animal psychology and ethology. Representative cognitive science research methods include the study of animal's natural and trained behavior. The former can be divided into natural observation and recording of natural behavior of the subject, and experimental observation of animals' natural responses to experimental procedures

(stimulus presentation). The latter involves an experimental analysis method to analyze the thinking of a variety of animals in detail. Associate Professor Ayaka Takimoto of the Faculty of Humanities and Human Sciences focuses on the horse, a domestic animal that is genetically far removed yet spatially close to humans. She is currently conducting research based on comparative cognitive science, by combining the above methods for the status and evolution of psychology supporting the formation of ties between horses and between horses and humans.

"According to my parents, I spent a very long time observing zoo animals when I was little. My younger brother and sister wanted to move on to the next animal quickly, but I would remain standing in front of the same animal. When we went to a farm, I had no trouble riding a horse although my brother and sister were afraid of horses. It seems that I was a child with a strong interest in animals," says Associate Professor Takimoto from Wakayama. After graduating from Kindai University Wakayama High School, she entered the Faculty of Letters, Kyoto University. She joined the University's equestrian club immediately after enrollment. "I had lost interest in animals when I was in elementary, junior high and high school, but my interest in animals from childhood came back to me when I joined the club. During my contact with horses almost every day, I became interested in what they were thinking and what I should do to give them instructions in an easily understandable manner."

Associate Professor Takimoto says that she became interested in research on animal psychology because she wanted to have a better relationship with horses in the equestrian club. She talked about how she decided to conduct comparative cognitive science research. "When I was in my first year, I saw a fourth-year student who belonged to the comparative cognitive science laboratory studying in the equestrian club during the summer vacation, to write their thesis. That's how I found out about the research field. Then in my second year, I met Professor Kazuo Fujita, who was teaching comparative cognition science classes in the animal psychology course of the Faculty of Letters. It was the start of my involvement in research in this field."

Unraveling what horses think

Associate Professor Takimoto, who joined the comparative cognition science laboratory led by Professor Fujita, engaged in experiments on cooperative behavior (e.g., reward allocation) between individuals of the same species, using the tufted capuchin monkey, a primate that is genetically close to the human, to study the evolution process of cooperation between animals, including humans. "I was interested in the thinking of animals, but I also wanted to do work that would benefit society," says Takimoto. During her first year in the master's program, she was impressed by a lecture by British ethologist Jane Goodall, who suggested that there are ways to conduct research while contributing to the community, and she decided to become a researcher. After completing the master's and doctoral programs at the Graduate School of Letters, Kyoto University, and working as a Research Fellow of the Japan Society for the Promotion of Science

A scene visualizing the results of image analysis tracking walks by a human and a horse to elucidate the mechanism of human-horse walking synchronization (created by Eriko Ueda).

(PD: Graduate School of Arts and Sciences, the University of Tokyo), she became an associate professor at the Graduate School of Letters, Hokkaido University, in April 2015. She currently conducts research on the psychological mechanism supporting cooperative behavior and the psychological basis for bonding between companion animals (mainly horses) and humans in the Laboratory of Behavioral Science.

In 2018, Associate Professor Takimoto's research group experimentally discovered that horses interpret human emotions not only from their facial expressions, but also by relating their verbal expressions and tone of voice. The group conducted an experiment whereby a human facial expression was projected on a screen that was shown to a horse and then played a human voice through a speaker. When the facial expression of the person did not match the voice, the horse turned to the speaker and looked at it for a long time. The horse felt uncomfortable about the inconsistency between the facial expression and the voice. Horses, which have lived with humans since ancient days, may be able to respond to human facial expressions and tones of voice because they recognize humans as their companions. "We are also conducting research on the process of how horses interact with other horses and humans to bond with them. I wish to elucidate both the mental evolution and development processes," says Associate Professor Takimoto. She continues to conduct comparative cognitive science research based in Hokkaido, aiming to link her research on the psychology of horses to spread the charm of horses, as well as to increase opportunities for horses to play active roles, preserve native horses in Hokkaido and other parts of Japan, and improve the second life of retired racehorses.

Relaxation

Trips to get refreshed!

Associate Professor Takimoto says she loves traveling. She has widely traveled in Japan and abroad, including Germany, Italy and Finland. Recently, she feels refreshed when walking in parks and forests near Sapporo.

To see the unseen sceneries

Alumni Interview

NOMURA Ryouta

Alpinist/mountain guide

| School of Fisheries Sciences Graduate |

On December 30, 2022, the person who appeared in NHK's TV special program entitled, "Traversing through the Silvery White World – 670 km Long Watershed Route in Hokkaido" fascinated the viewers. In February 2022, Ryouta Nomura accomplished an unprecedented challenge of continuously crossing the watershed between Cape Soya and Cape Erimo in 63 days. Nomura won the Uemura Naomi Adventure Award, which is given to people who take creative and courageous actions that pushes the limits of what is possible for humans in nature—the first time it was awarded for mountain climbing in Japan. He talked about his memories of Hokkaido University and other stories.

—What was your childhood like?

Since I grew up in a "bed town" suburb of Osaka, I was not surrounded by nature. I was an ordinary boy playing baseball through elementary, junior high, and high school. In those days, I never imagined what I have become now.

—So, the reason you entered Hokkaido University's School of Fisheries Sciences was not "yearning for nature?"

I wanted to leave home. I chose Hokkaido University as I wanted to go as far away as possible. The only reason I chose the School of Fisheries Sciences was because I thought field work looked more interesting than studying at a desk. After I entered the University, I was surprised how much my fellow students loved and knew about the sea.

—Would you tell us about your experience in the wandervogel (hiking/backpacking) club?

I wanted to start something new. As I was curious about the unfamiliar word *wandervogel*, I went to the club's welcoming party for freshmen and joined because the senior students invited me. After joining the club, I neglected my studies and was always thinking about the mountains.

An unforgettable memory is that some fourth-year students suffered from hypothermia while climbing a mountain in spring when I was in my second year. Although all of us

managed to get down the mountain, it got me thinking about climbing in the future.

When you are in the mountains, you are solely responsible to determine how far you can safely go. You have to draw a line before it really becomes dangerous, but if you draw the line too early, you won't be able to achieve what you came to do. The skill to determine where you draw the line may determine how good a climber you are.

—I hear you took a leave from the University for two years but remained in the wandervogel club.

I ran into one of my former senior students who had become a mountain guide when I climbed a mountain in the summer of my second year, and I came to love helping him with the tours he organized. At that time, I set the goal of becoming a mountain guide in the future for myself. I thought about what I should do to achieve the goal and decided to take a leave of absence to acquire the experience and skill to climb mountains myself.

—How did it come that you planned to traverse the watershed after graduating from the School of Fisheries Sciences?

It's rare for anyone to become a guide immediately without being employed as one, and I think most people in the same

position cannot easily find a job as a guide. With the outbreak of COVID-19 that coincided with my graduation, I found myself without any plans.

Two books I read during the COVID-19 pandemic, "Walking on the Northern Watershed" by Eiichi Kudo and "Endless Mountain Ridge" by Tetsuya Shimizu, formed the basis for my plan to traverse through the watershed. In his book Kudo says it is a difficult task for a person to walk through by himself and "I want someone with inner strength and a strong body to withstand such extraordinary hardships to attempt and realize this one day. (snip) I have my hope on young future mountaineers*1)." I thought I would become one of these young mountaineers. I wanted to gain confidence for living as a mountain guide by making a plan that is grand enough to make you believe you can do anything if you can complete it, and then actually achieve it.

*1) Eiichi Kudo, "Walking on the Northern Watershed," Yama-kei Publishers Co., Ltd., 1994, p. 214

—Could you tell us about traversing the watershed?

My first attempt in 2021 ended in failure because I made an inappropriate plan without understanding the entire scale. My tent broke when I felt rushed by a delay in my plan and misjudged the weather. I headed back thinking I could not proceed while making such a misjudgment. You can't climb a mountain safely until you can make objective decisions without your private emotions interfering.

The Uemura Naomi Adventure Award plaque and medal.

I then made another attempt with a new plan in February 2022. When I'm on the mountain, all I can do is to think about the day ahead of me. As the sun rises at 4 or 5 o'clock in the morning, I get up and start walking at 2 or 3 o'clock. It's easy to walk at first, but snow becomes slushy after sunrise, making it difficult to walk. Every day, I get to my destination thinking, "What am I doing? I want to go home." I put up a tent, have a warm drink, eat biscuits, and feel a little happy. Then I check the map, eat dinner and go to sleep at sunset day after day. Sometimes when the weather was bad, I would spend a whole day in the tent. Then I realized that it had been a week, a month, or even two months. Although I experienced the problem that food I had kept at a resupply point was eaten by rats, I managed to complete the full distance with the help of my friends who got me food from the foot of the mountain.

—After completing the course, did you have any change of heart?

I don't feel that I accomplished something great as I only barely managed to do what I thought I might be able to do. To be honest, strangers began to talk to me, the media covered me, and the responses of people around me changed only after I received the Uemura Naomi Adventure Award. I have no desire to be valued by people around me. I'm just a person who did and pursued what I wanted to do.

My next plan is still just a dream. It's a secret because it is not yet at the stage to be talked about (laugh). I don't think there will be a second traverse plan.

—Lastly, could you give a message to students at Hokkaido University?

I've just done what I wanted to do. I first wish for them to find what they really want to do. I gave up getting employment or having a stable career to pursue mountain climbing. Such paths are actually quite common. I want many juniors to know that there are lots of choices, and independent of the path they eventually choose, there are many interesting directions they can follow.

Top: at the summit of Mt. Totsutabetsu, Hidaka Mountains.

PROFILE

Born in Osaka Prefecture in 1994. Graduated from the School of Fisheries Sciences in 2020 and became a mountain guide. Completed a solo run of the Shiretoko and Hidaka mountains without resupply in a single winter while at the University and received the 2019 Hokkaido University Elm Award. Achieved a solo run of the Hokkaido watershed (670 km between Cape Soya and Cape Erimo) in 63 days in the snowy season of 2022, becoming the first person to do so, and received the 2022 Uemura Naomi Adventure Award.

A bridge between Hokkaido University and the world

This issue features contributions from Dr. Md Tofazzal Islam, who is active as a Hokkaido University ambassador in Bangladesh, and Dr. Sonoko Dorothea Bellingrath-Kimura, who is active as a Hokkaido University partner in Germany.

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Dr. Md Tofazzal Islam

Professor and Founding Director, Institute of Biotechnology and Genetic Engineering, Bangabandhu Sheikh Mujibur Rahman Agricultural University

When I was asked to be a Hokkaido University Ambassador by my teacher, Professor Atsushi Yokota, who is now Executive Vice-President of the University, the words of Professor William Smith Clark, "*Boys, be ambitious*" first came to my mind. I was very delighted to know that my alma mater was ranked among the top ten universities in the world by the Times Higher Education Impact Rankings 2022.

I had the opportunity to do my MS, PhD, and Postdoctoral studies at Hokkaido University from 1997 under the extraordinary guidance of Professor Satoshi Tahara at the Graduate School of Agriculture. There are lots of unforgettable special memories from my life in Sapporo, besides my research activities. In particular, I have a strong impression of meeting then President Mutsuo Nakamura and then Director and Vice President Kenichi Nakamura at the ceremony held in 2005 to commemorate the 10th anniversary of the establishment of Bangladesh Society Sapporo (BSS).

Hokkaido University is a seat for higher learning and doing impactful research in the world. The most important aspect of the University is that it offers enormous opportunities to students and researchers for cultural exchange, extracurricular activities, and networking, and is rich in innovation and internationalization. Not only knowledge and research skills, but I also gained the lofty ambition and spirit from Hokkaido University to pioneer my own research. I owe the University for transforming my dream, way of thinking, and mind.

As an Ambassador, I would like to unite all Hokkaido University alumni in Bangladesh and spread the spirit and light of HU to my country and beyond through various academic, social, and cultural activities. We may form interconnected national virtual social platforms for exchanging views and ideas among the alumni, current students, and future students, and also share innovative ideas for the betterment of Hokkaido University. Another idea is to introduce a mentoring system for the current students. Alumni can serve as mentors for the foreign students.

Currently, I am living in the most densely populated city, Dhaka, the capital city of Bangladesh, which is highly different from the well-organized and peaceful city of Sapporo. However, business and hardworking residents in Dhaka seem quite similar to Sapporo. Bangladesh is highly blessed by fertile soils for agriculture, aquaculture, and biodiversity like Hokkaido. The country also has some groups of indigenous people. Bangladesh has the world's largest mangrove forest, the Sundarbans; and the longest unbroken sea beach, the Cox's Bazar.

My family and I consider Hokkaido to be our second home. I will never forget the sweet memories of the snow festival, the summer festival, playing with snow, delicious foods, the friendship of people, and every precious day in the laboratory. My wife completed her PhD at Hokkaido University, and my son had a wonderful time at the nursery and elementary schools. We are grateful to the numerous people of Sapporo. As members of the Hokkaido University family, we feel proud of and wish to maintain our bond. If I get any opportunity to do something for my alma mater, I never miss it. Welcome to visit Bangladesh and allow us an opportunity to be your host.

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1. Graduation ceremony of the first batch of the special English program of the Graduate School of Agriculture of HU (Third from the right, back row).
2. Members of the Hokkaido University Alumni Association Bangladesh.
3. Son, Tahsin Islam Sakif, in front of the monument of Bangladesh language martyrs made by BSS at the Snow Festival of Sapporo.
4. My family at the longest sea beach in the world, Cox's Bazar.

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Dr. Sonoko Dorothea Bellingrath-Kimura

Professor, Humboldt University of Berlin /
Leibniz Centre for Agricultural Landscape Research (ZALF)

When Hokkaido University offered me a partner position, I was very happy to be connected to my alma mater and my desire to go to Sapporo again grew stronger. I have Hokkaido University pamphlets in my office to present the appeal of the University to visitors. Many people in Germany have heard of "Hokkaido" and "Sapporo", which is associated with good impression, such as Snow or delicious pumpkin named "Hokkaido". Many members of the association of alumni of the Japan Society for the Promotion of Science (JSPS) in the German-speaking area have been to or have acquaintances in Hokkaido. When I see graduates of Hokkaido University or participants of the summer programs, I feel like I've known them for many years.

I'm happy that the Graduate School of Global Food Resources and other organizations of Hokkaido University are currently active in fostering international human resources and research activities. I am also conducting a joint research project with the Laboratory of Soil Science for which I am receiving Grants-in-Aid for Scientific Research. I'm planning to visit places where I studied when I was in the doctoral course, and I'm looking forward to it. I'd like to interact with current students of Hokkaido University and to receive them as exchange students in the future. When some people from the German agricultural machinery industry sought my advice because they wanted to observe Japan's smart agriculture, I recommended Hokkaido and a visit by their delegation to Hokkaido University was realized.

Since the pandemic started, online meetings and communications through instant messengers have become common, and it has become possible to work efficiently and flexibly from home or other places. Even so, I feel it is important to meet people in person, because small talk you have with someone you run into may sometimes develop into discussions about research activities. I think online and in-person communications should be combined effectively in the future.

I currently live in the State of Brandenburg, about 30 minutes by train from the east of center of Berlin. It is a northern region, but it does not have as much snow as Sapporo. The nearby city of Fürstenwalde has a plant of the Beer Brewery, which advertises to be the roots of Sapporo Beer. I was very surprised to find a slide show of the streets of Sapporo, the Clock Tower, and Odori Park at the plant. In Germany, many people enjoy hiking and walking on holidays, and the entrances to forest roads are lined with cars in the mushroom-picking season. (Locals know the secret places, and so do I!)

Cycling tourism is also popular, and projects to link bioeconomy and cycling tourism are conducted mainly in the Lausitz region with its old brown coal mine sites. Co-development-type research involving the stakeholders is recommended, and the research style is changing in the direction of conducting research, development, and innovation simultaneously under the name of Living-Lab. This is necessary to provide research results promptly to meet the on-site needs and address climate change "now". Research on "right crop for right site" intended to identify optimal ways of utilizing agricultural land is currently conducted with the aim of improving ecosystem functions of soil besides food production, including carbon accumulation and groundwater preservation through smart agriculture.

I was able to spend nine wonderful years at Hokkaido University. I want to tell everyone at Hokkaido University that you can be proud of your university in the world. Please value your ties expressed in the *Miyako zo Yayoi* dormitory song.

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1. At a field of the Humboldt University of Berlin.
2. Receiving the JSPS Alumni Award 2023.
3. A "right crop for right site" model field to maximize ecosystem services.
4. Mushroom-picking harvest.

Hokkaido University Archives

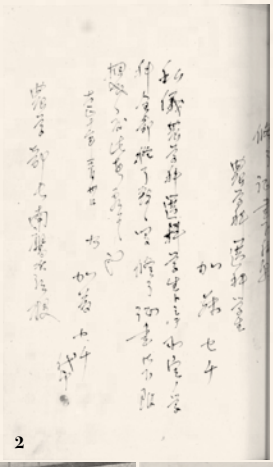
150 years of Challenge

SCENE-19

1918-45

Sechi Kato – the first woman who entered Hokkaido University


1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For a woman to enter a university

In September 1913, three women entered the College of Science, Tohoku Imperial University. They were Japan's first female university students. Then in September, 1918, Sechi Kato (1893–1989) entered the Agricultural College of Hokkaido Imperial University (later renamed the School of Agriculture), as the fourth female student.

Before World War II, it was extremely difficult for women to enter a university because the enrollment of women was not permitted in the prewar education system. The most common route to enter a university was in the order of ordinary elementary school (six years), junior high school (five years), high school or university preparatory course (three years), and university (three years). However, only boys were allowed to enter junior high school, while girls were excluded from entering the route leading to universities at this point. Girls' preparatory schools, which were the equivalent of boys' junior high schools, were girls' high schools (four or five years). Girls who graduated from girls' high schools had the option to enter a vocational school (three years) to study more professional disciplines, or a women's higher normal school (four years) to train as a female junior high school teacher. Under the system of those days, the final education that women who aspired to study could receive was only the above two types of school.

Until the enforcement of the University Law in April 1919, the five imperial universities—Tokyo, Kyoto, Tohoku, Kyushu, and Hokkaido—were the only universities in Japan. For example, Waseda University was a vocational school under the previous system, and became a university after the enforcement of the law. Japan Women's University and Tokyo Woman's Christian University were also vocational schools, and did not become universities until after the war.

Sechi Kato's path towards the university

Then, through what route did Sechi Kato enter Hokkaido University? Kato entered Tsuruoka Women's High School in Yamagata Prefecture, her hometown, but dropped out in her third year due to family circumstances, and entered Yamagata Women's Higher Normal School to become a teacher. After graduating in 1911, she taught at an elementary school near her hometown. She went to Tokyo in 1914, entered Tokyo Women's Higher Normal School (present Ochanomizu University), and after graduating in 1918, she became a teacher of Hokusei Girls' High School in Sapporo.

Kato recalled, "As soon as I stood on a platform feeling like a full-fledged intellectual, my confidence crumbled at its foundation." When she accompanied students of her alma mater, Tokyo Women's Higher Normal School, to Hokkaido University on a school trip in July 1918, she had a meeting with then President Shosuke Sato.

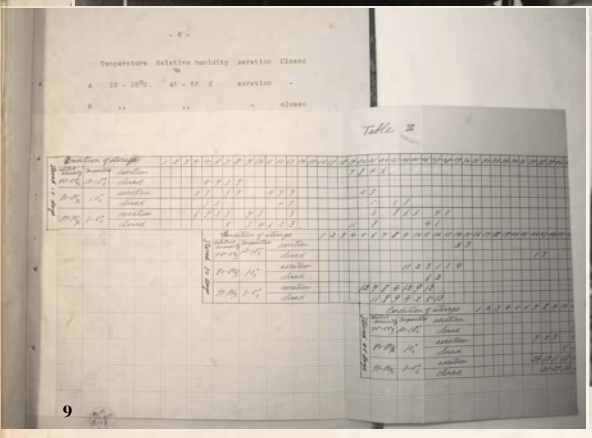
Sato, who had been a devout Methodist Christian since his younger days, and had studied for an extended period in the United States, was strongly aware of the necessity of expanding educational opportunities for women, serving as an advisor for Hokusei Girls' High School and a director of Tokyo Woman's Christian University. At a meeting of the Federation of Education Associations in June 1915, he said, "I think it will be necessary in the future to abolish the name of "girls' high school" and establish a higher educational institute with the name of girls' junior high school, or it will be urgently necessary to provide vocational schools or facilities for the education of girls." Sato said to the students of Tokyo Women's Higher Normal School that the University would never close its door to women. Hearing this, Kato decided to study again.

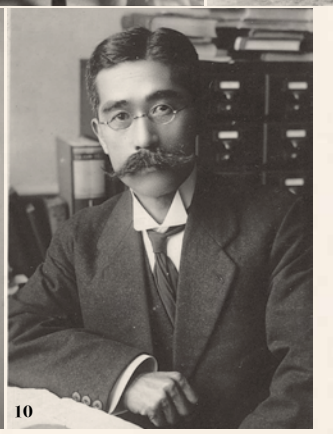
"I realized that learning has such a three-dimensional stopping. Professors seem to be giving everything they

(Sechi Kato, "Impressions as the first female student of Hokkaido University")

Hokkaido University's attitude toward the enrollment of female students

In August 1918, Kato applied for admission to the Agricultural College, Hokkaido Imperial University. In addition to President Sato, quite a few faculty members—including Kokichi Morimoto who later established the Women's Economic College





1. President Shosuke Sato who was positive about enrollment of female students (1920)
2. Request for granting a diploma to Sechi Kato (March 30, 1921)
3. Sechi Kato (1930s)
4. A scene in the botanical class, with Yasu Honma (far left) who entered as a non-regular course student after Sechi Kato (ca. 1926)
5. Professor Kokichi Morimoto, who supported the enrollment of Sechi Kato (1920)
6. New Year's card sent to Yuzo Hoshino by Sechi Kato (1923)
7. Women of the mathematics course of the School of Science – Yoshie Katsurada, Yuki Uenaka, Fumiko Osugi, Masako Imai and Masa Watanabe from the left (1941)
8. Commemorative photo with Hokkaido University students who visited the Institute of Physical and Chemical Research, with Michiyo Tsujimura in the middle of the front row and Sechi Kato on her right (1936)
9. Thesis submitted by Sechi Kato to Hokkaido University, entitled "Influence of dryness on apple seed germination" (1921)
10. Professor Yuzo Hoshino, who taught Sechi Kato (1920)

(present Nitobe Bunka College) and Yuzo Hoshino who was from the Shonai area like Kato—expressed support for accepting Kato, but there were also many dissenting voices. According to an interview with Morimoto published in a newspaper, the problems were that there was not a set opinion on whether or not women may enter universities, and that they didn't know how to perform agricultural practice nor what to do about the uniforms provided based on the dress regulations. During those days, Kato personally negotiated with President Sato, making an appeal to be enrolled. The faculty council of the Agricultural College finally decided to accept her as a non-regular course student (non-degree student) eligible to attend all lectures and receive all training and teacher guidance as full-time students, instead of being a full-time student.

aspect and moves dynamically without have to their specialties."

Excitement on studying at a university

Sechi Kato finally entered the Agricultural College of Hokkaido Imperial University, as a non-degree student in September 1918. While she experienced difficulties organizing her notebooks and studying foreign languages to keep up with the lectures in which English and other languages were frequently used, she was extremely impressed by the lectures and was really enjoying her studies every day.

During a lecture at Miyagi Daini Girls' High School in October, 1926, Shosuke Sato talked about Kato who had entered Hokkaido University. "Male students were not very welcoming and some bullied her, but she didn't care at all and continued studying. She even borrowed notebooks from boys and surpassed them in three years to graduate at the top of the non-regular course students."

After completing all non-regular courses and working as an assistant at the School of Agriculture Kato entered the Institute of Physical and Chemical Research in Tokyo. Thereafter she continued research as a pioneering female scientist. Following Kato, 24 women entered the School of Agriculture and the School of Science of Hokkaido University by 1945. In 1946, after the war, enrollment of women in universities was fully permitted by national legislation.

Hokkaido University
HISTORY
1918-45

1918	July	President Shosuke Sato recommends students of Tokyo Women's Higher Normal School to enter Hokkaido University
	August	Sechi Kato applies to be admitted to the Agricultural College
	September	The faculty council of the Agricultural College decides on the 18th to permit enrollment of Sechi Kato as a non-regular course student
1920	April	Yasu Honma enters the School of Agriculture as a non-regular course student and Michiyo Tsujimura becomes an assistant at the School (until March, 1922)
1921	March	Sechi Kato completes all non-regular courses of the First Department of the School of Agriculture
	May	Sechi Kato becomes an assistant at the School of Agriculture (until December)
1922	September	Sechi Kato enters the Institute of Physical and Chemical Research
1930	April	Fuji Yoshimura enters the newly established School of Science as a full-time student
1933	April	Jun Omori and Miki Nishikori enter the School of Science
1935	April	Tamae Yuki enters the School of Science
1936	April	Yurie Yokota and Akiko Soeya enter the School of Science
1937	April	Yuki Uenaka and Yoshi Kobayashi enter the School of Science
1938	April	Hisako Nakayama enters the School of Science
1940	April	Yoshie Katsurada enters the School of Science
1941	April	Fumiko Osugi, Masa Watanabe, Kaoru Higuchi, Nobu Yonemitsu, and Kim Sam-sun enter the School of Science
1942	April	Masako Imai enters the School of Science
	October	Tami Inoue and Takayo Fujiwara enter the School of Science
1943	October	Yuriko Ikeda enters the Science Department, and Tei Yamanishi enters the School of Agriculture as a full-time student
1944	October	Kimiko Maeda enters the School of Science
1945	October	Tatsu Okubo, Shizu Enomoto, and Ikuko Oikawa enter the School of Science

Hokkaido University Archives

This facility collects, classifies and preserves historical documents and records of Hokkaido University. It also conducts investigations and research on its history.

Topics

01

Aiming to become a Novel Japan University Model – Establishment of the New Mid-term Vision, HU VISION 2030

Brochure cover,
HU VISION 2030

In July 2023, Hokkaido University announced HU VISION 2030, our new mid-term vision which aims to realize "sustainable well-being in society" by the year 2030.

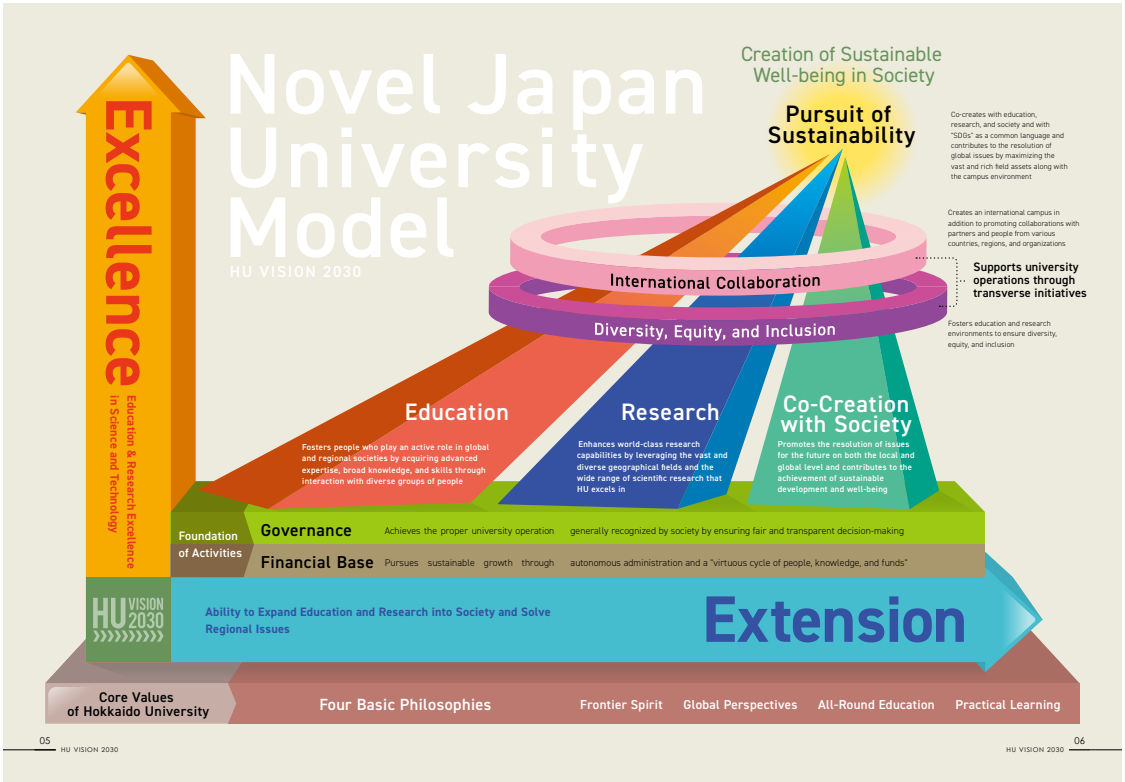
HU VISION 2030 vision identifies the elements required for universities to generate innovation on two orthogonal axes: "Excellence" in education and research in the fields of science and technology, and "Extension", the ability to expand education and research into society and solve regional issues. By dramatically strengthening not only "Excellence" but also "Extension"—which has been weak in Japanese universities up to now—we aim to create a virtuous circle and ecosystem of both, and to create a new model of Japanese university, the "Novel Japan University Model," which will generate innovation through collaboration with international and local communities.

HU VISION 2030 presents eight perspectives, including education and research, based on the University's unique strengths and identity—its field research represented by the world's largest research forest and rich marine research, and the spirit of sustainability cultivated since the University's inception. It also presents 47 concepts for realizing these visions.

The complete HU VISION 2030 is available on our website for your perusal (https://www.global.hokudai.ac.jp/about/hu-vision-2030/).

President Houkin speaking at a regular press conference

▷Hokkaido University website (HU VISION 2030)
https://www.global.hokudai.ac.jp/about/hu-vision-2030/



The intersecting axes of "Excellence" and "Extension"

02

President Houkin and delegates visited the University of Massachusetts Amherst

From April 19 to April 21, President Kiyohiro Houkin, Executive Vice President Aya Takahashi, and faculty members representing ongoing collaborations visited the University of Massachusetts Amherst in the United States. The University has its roots in the Massachusetts Agricultural College, whose president, Dr. William Smith Clark, was also the first vice principal of the Sapporo Agricultural College, and the two universities have maintained long-term exchanges throughout their existence.

During this visit, the two universities shared their expectations of the further expansion of their partnership as strategic international universities for the next 150 years, starting from the 150th anniversary of Hokkaido University in 2026. The delegation also put flowers on the grave of Dr. Clark on the outskirts of Amherst, in remembrance of his achievements that led to the present partnership between the two universities.

Chancellor Subbaswamy (then) and President Houkin

Visiting the grave of Dr. Clark

03

Ceremony to Commemorate Completion of the New ICReDD Building

On June 16, the Institute for Chemical Reaction Design and Discovery (WPI-ICReDD) held a ceremony to commemorate the completion of its new building.

At the ceremony, President Kiyohiro Houkin gave an address, followed by congratulatory messages from Keiko Nagaoka, the Minister of Education, Culture, Sports, Science and Technology (read on her behalf by Shin Okuno, Deputy Director-General of the Ministry of Education, Culture, Sports, Science and Technology), and Akira Ukawa, the Program Director of WPI.

The new building is an "under-one-roof" type research facility, where researchers from different fields can gather in one space. At the post-ceremony building tour, the participants expressed interest in the "Fusion Research Office," a special feature of the building. The building has also been certified as ZEB ready-equivalent, which is defined as an environment-friendly building that saves more than 50% energy compared to conventional facilities.

Research integrating the three fields of computational, information and experimental sciences, will be further accelerated in this new research building.

Ribbon cutting ceremony

Director Satoshi Maeda giving an address

Autumn foliage adorns the campus

Photographer: Hiromi Terashima

a

After the extremely hot summer with the highest temperature on record, a cool and pleasant autumn wind is blowing on the campus.

An autumn feature of Hokkaido University is the Ginkgo Avenue where we can see children closely observing the fallen leaves covering the footpaths.

They are all little researchers in touch with nature. Hokkaido University is deeply rooted in the local community as a learning ground that continues to pursue the joy and depth of learning.

Note: For videos showcasing the natural splendor of the campus in different seasons, please visit the University website.

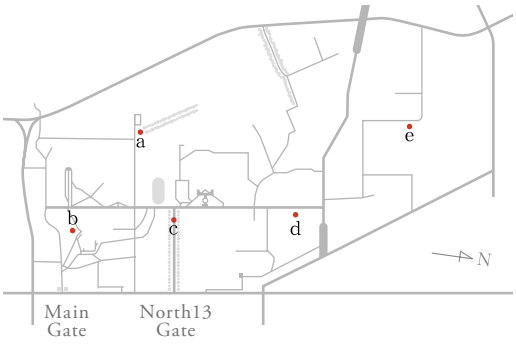
Videos of campus views QR code

b

c

d

e



a. Poplar Avenue
b. Central Lawn
c. Ginkgo Avenue
d. Main Street
e. Creative Research Institution

HOKKAIDO
UNIVERSITY

https://www.global.hokudai.ac.jp/