

Autumn 2020

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."

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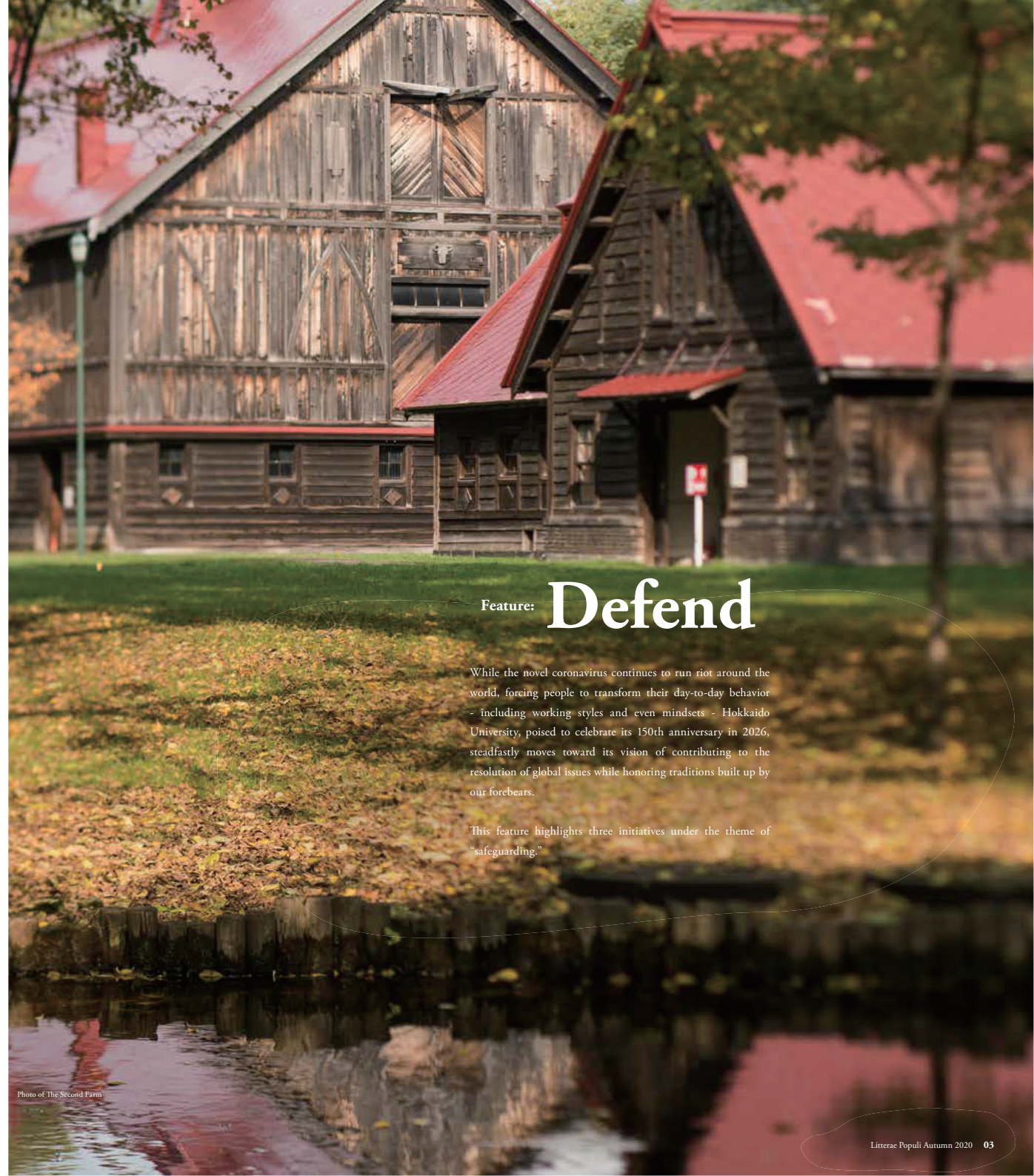
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Feature: Defend

While the novel coronavirus continues to run riot around the world, forcing people to transform their day-to-day behavior - including working styles and even mindsets - Hokkaido University, poised to celebrate its 150th anniversary in 2026, steadfastly moves toward its vision of contributing to the resolution of global issues while honoring traditions built up by our forebears.

This feature highlights three initiatives under the theme of "safeguarding."

Photo of The Second Farm

Toward Zoonosis Control through Preemption



Research Center for Zoonosis Control

When, where, and how do pathogens creep into our daily lives? We are committed to safeguarding human health against the threat of emerging and re-emerging infectious diseases.

HUCZC faculty with international students from Zambia and elsewhere (at an HUCZC lab). From front right: Hiroshi Kida (head of the HUCZC), Yasuhiko Suzuki (director), and Hirofumi Sawa (vice-director). The HUCZC hosts numerous international students every year, fostering a wealth of talent.



The HUCZC, at the forefront of studies on zoonosis control.

Infectious diseases such as influenza, the Ebola hemorrhagic fever, SARS, and AIDS are caused by viruses initially carried by wild animals. These viruses jump to human populations because buffer zones between humans and wild animals have been eliminated by environmental changes due to deforestation, farmland expansion, irrigation, and other factors. The microorganisms are harmless in their natural wild animal hosts, but occasionally spread to humans, causing outbreaks of infectious diseases through human-to-human infection. These infectious diseases are called as zoonoses.

The Hokkaido University Research Center for Zoonosis Control (HUCZC) has aimed at zoonosis control since its foundation in 2005. Professor Yasuhiko Suzuki, the director of the HUCZC, outlines their activities: “The Center is designated by the Ministry of Education, Culture, Sports, Science and Technology as one of some hundred Joint Usage Research Centers for Collaborative Research. It has been leading Japan-wide efforts to combat infectious diseases through the Japanese Union for the Promotion of Infectious Disease Knowledge through Research and Education (JUPITRE), which also includes the Institute of Medical Science (The University of Tokyo), the Research Institute

for Microbial Diseases (Osaka University), and the Institute of Tropical Medicine (Nagasaki University).” Composed of seven divisions, three units, and one overseas sub-center, the HUCZC engages in research, education, and international collaboration.

“While human-to-human transmission routes are easy to trace epidemiologically, only limited information is available on the transmission of pathogens from animals to humans,” says Dr. Hiroshi Kida, Head and Specially Invited Professor of the HUCZC. New strains of influenza, COVID-19, and other emerging infectious diseases currently drawing attention are no exceptions; it takes herculean efforts to elucidate their animal-human transmission routes. Among the innumerable microorganisms present in nature, viral species alone number in the hundreds of thousands. There is no predicting which viruses will expand their host ranges into humans.

Preemptive strategies

Given these circumstances, the HUCZC has adopted preemptive strategies for sharing information about microorganisms carried by domestic and wild animals by

creating a library based on the comprehensive isolation of such microorganisms. The idea is to use this information to develop diagnostic kits, vaccines, and therapeutic medicines. By convincing the government of the importance of preparing against the threat of zoonoses, the HUCZC leadership led to the founding of a research center for emerging and reemerging infectious diseases and the launching of research and education projects. This initiative involves multiple government agencies: the Ministry of Education, Culture, Sports, Science and Technology, which supervises research institutions in academia; the Ministry of Agriculture, Forestry and Fisheries, which overseas measures to fight infectious diseases of livestock and poultry; the Ministry of Health, Labour and Welfare, which has jurisdiction over disease control in humans; and the Ministry of the Environment, which supervises the investigation and preservation of wildlife ecosystems. The HUCZC also collaborates with international organizations, including the World Health Organization (WHO) and the World Organization for Animal Health (OIE), and organizations concerned in other countries.

Hokudai Center for Zoonosis Control in Zambia and “Zambianization”

The HUCZC established the Hokudai Center for Zoonosis Control in Zambia (HUCZCZ) at the University of Zambia’s School of Veterinary Medicine in 2007, with the aim of elucidating the pathogens causing viral zoonoses prevalent in sub-Saharan Africa. The HUCZCZ is, in fact, the fruit of hard efforts by Professor Kida, who believes that, because infectious diseases know no borders, it is crucial to practice preemption in the countries where infectious diseases actually emerge. The opening ceremony of the HUCZCZ was reportedly attended by his excellency Kenneth Kaunda, the first president of Zambia.

The relationship between Hokkaido University and Zambia goes back years, to when the School of Veterinary Medicine was founded at the University of Zambia in 1985. “When His Majesty the Emperor Emeritus visited Zambia as the Crown Prince in March 1983, he learned from locals how Zambia was in dire need of a school of veterinary medicine,” recounts Professor Hirofumi Sawa, HUCZC Vice-Director and HUCZCZ Director. The construction of the school building and facilities started in February 1984 with support from the Japanese government and was completed in 1986, followed by the launch of a master’s degree program. “The faculty of the Hokkaido University



An international student examines specimens.





This next-generation sequencer allows large amounts of genetic data to be gathered within a short time, enabling the early detection of novel viruses.

School of Veterinary Medicine were deeply involved in the establishment of the school and have since built strong bonds of trust with their counterparts there,” notes Professor Sawa. Today, the HUCZCZ serves as a full-fledged research center equipped with a biosafety level-3 laboratory.

The Hokkaido University School of Veterinary Medicine has also been engaged in personnel exchanges with the School of Veterinary Medicine at the University of Zambia. In fact, the faculty of the former have been helping the latter to develop human resources for three decades. The University of Zambia has a university staff-training course, and the Hokkaido University School of Veterinary Medicine has hosted numerous students from the University of Zambia. Today, the University of Zambia has a strong faculty lineup, with Zambian nationals having taken over the human resource development tasks once implemented by Hokkaido University faculty. Professor Kida cheerfully says, “This is what ‘Zambianization’ is all about. As their research levels improve, we simultaneously compete and cooperate to deliver results.”

Efforts to combat COVID-19

Knowledge of zoonoses and related analytical techniques gained through these activities have proved useful for efforts to bring COVID-19 under control.

Assistant Professor Kyoko Hayashida, who develops testing technology, used a genetic analysis technology known as LAMP* to develop a technique for detecting the novel coronavirus. LAMP has been used in epidemiological studies of myriad pathogens at the HUCZCZ, too. Allowing

gene amplification at a constant temperature within the range of 60–65 °C, LAMP does not require the precise temperature control of polymerase chain reaction (PCR) tests. This makes it relatively easy to conduct diagnostic testing in developing countries and remote areas of the world. The researchers are now verifying procedures that use the LAMP method, approved by the relevant ethical review committee, with clinical samples provided by Sapporo City General Hospital, a designated infectious disease treatment hospital.

Further, the HUCZC has established a new research division in collaboration with a private pharmaceutical firm to develop antiviral drugs. (See page 9 for details.)

*loop-mediated isothermal amplification, developed by Eiken Chemical Co., Ltd.

Expert training for the future of our world

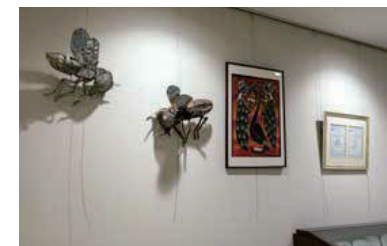
“Zoonosis control requires experts in infectious disease control,” reckons Professor Kida. The HUCZC has produced 82 zoonosis control experts over the past decade through its zoonosis control expert training program and its unique human resource development initiative that has been implemented in partnership with the Hokkaido University Faculty of Veterinary Medicine. Those experts have contributed to zoonosis control in multifarious fields, including academia, international organizations (e.g., the WHO), government agencies in their home countries (e.g., health and agricultural ministries), and pharmaceutical firms. Director Suzuki contentedly says, “All these experts are our pride.” Professor Kida stresses that love for humanity



The Science Lecture 2019 was held at the HUCZC in July under the theme of “Wanna take a look at the risks? Learning about the cutting edge of infectious disease research by looking at mosquitos and ticks.” The HUCZC is also putting efforts into explaining specialized topics plainly to the public.

motivates their research. Driven by a sense of mission to make the Earth a happy place for all, HUCZC staff set their sights on the future of the world while also taking note of challenges associated with infectious diseases, including population and environmental problems.

In 2020, a research project at the HUCZC entitled “Development of Research and Human Resources for the Control of Zoonoses at the Hokudai Center for Zoonosis Control in Zambia” was selected for funding under the



Metal models made in Zambia, the likes of which adorn the interior of the HUCZC

Japan Program for Infectious Diseases Research and Infrastructure (Emerging/Re-emerging Infectious Disease Project of Japan) of the Japan Agency for Medical Research and Development (AMED). As it plans to continue its manifold research and education activities to further advance research and cultivate human resources, the HUCZC is committed to continuing to lead the global fight against infectious diseases as an international collaborative research center for zoonosis control.

HUCZC Division of Anti-virus Drug Research, Shionogi & Co., Ltd.: Combatting COVID-19 with new drugs



In April 2018, the Division of Anti-virus Drug Research, Shionogi & Co., Ltd. was established at the HUCZC under an initiative to develop new antiviral drugs, with Dr. Akihiko Sato from Shionogi & Co., Ltd. serving as a Guest Professor. The division focused on viruses that cause influenza, Lassa fever, South American hemorrhagic fever, and other viral diseases - before the COVID-19 pandemic prompted it to hone in on SARS-CoV-2, the virus that causes COVID-19.

Professor Sato has developed a new drug from chelates (meaning ‘crab’s claws’), which are compounds that share a certain structure. Chelates are ‘molecular hands’ that grab atoms of metals such as magnesium and manganese. The new antiviral drug binds to the enzymes involved in the replication and multiplication of viral genes when chelates on the drug grab metal atoms on those enzymes, particularly those near their active centers, where viral genes replicate. The drug thus prevents the viral genes from entering the active centers, thereby inhibiting gene replication and viral reproduction.

Professor Sato uses two-metal chelate compounds, which have two chelates in the molecule. Selected as materials for the new drug are compounds with a distance between chelates that matches the distance between the metal atoms near the active center, enabling the antiviral

drug to bind to the metal atoms with pinpoint accuracy. When the two chelates dovetail with the metal atoms, the compound binds firmly to the enzyme, giving the drug lasting efficacy.

The development of a new drug involves many processes. Staff of the Division of Anti-virus Drug Research begin by looking for candidate materials. They select a promising compound that binds easily to a certain virus, which is followed by the fine-tuning of its properties by an expert in chemical design who, for example, changes its shape for stronger binding to the enzyme and adds water solubility to allow faster absorption by the body. A drug candidate developed in this way then advances to animal tests and clinical trials.

Shionogi & Co., Ltd. has hundreds of thousands of samples of candidate materials for new drugs, approximately 50,000 of which are stored at the Division of Anti-virus Drug Research. Equipped with the apparatus for viral proliferation inhibition tests that can handle up to approximately 5,000 compounds per day, the Division can test all the samples it has within 10 days. Based on their experience and knowledge of how drugs work, their efforts to search for and design compounds for drug discovery will continue day and night.

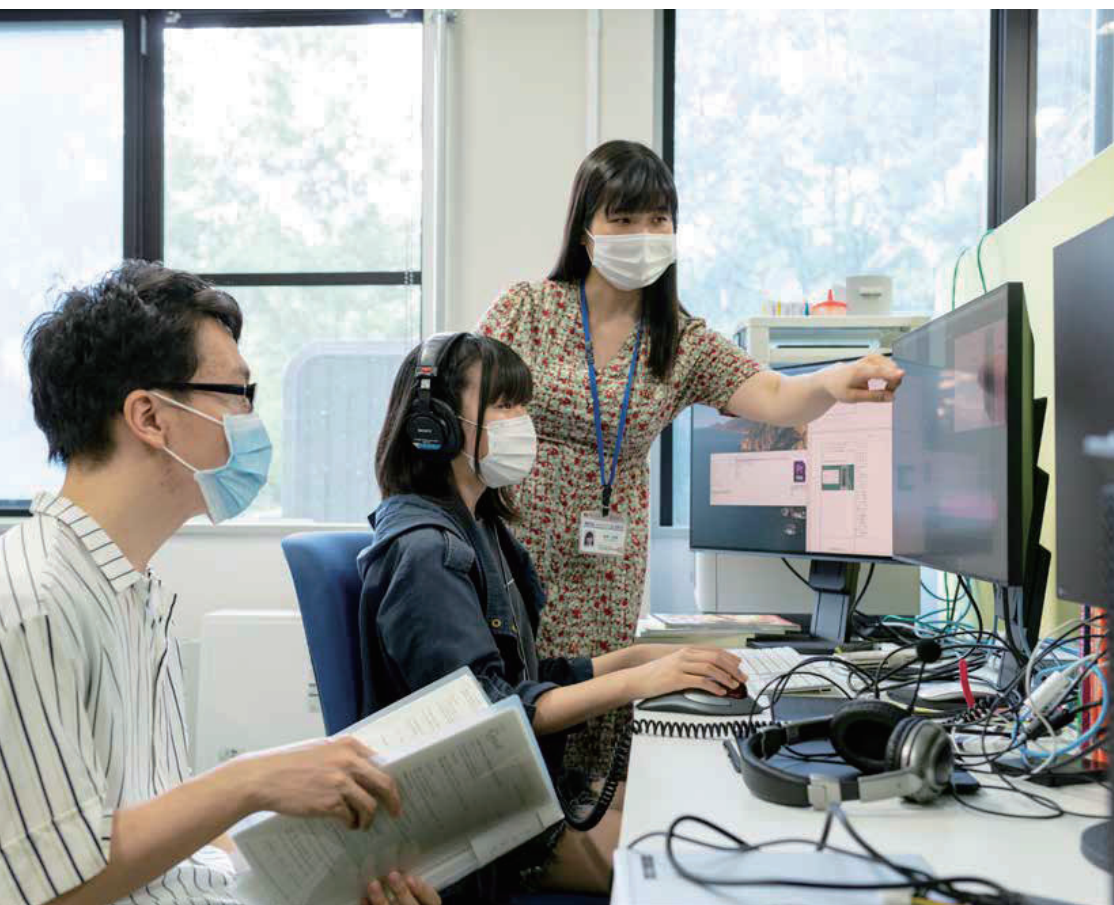
Center for Open Education

As the year 2020 has seen the global COVID-19 pandemic force changes to university education, the Center for Open Education has been playing a crucial role in supporting new methods of education delivery, such as online instruction, to protect university education.



Support for University Education and the Worldwide Promotion of the Appeal of Learning at Hokkaido University

Students produce educational materials as part of their graduation work in a lesson provided by the e-Learning Department.



The Center for Open Education (OEC) was established at the Institute for the Advancement of Higher Education in 2014 with the aim of supporting teaching and learning using ICT and expanding learning opportunities using Open Educational Resources (OERs). In 2015, the OEC established the e-Learning Department, whose mission includes the development of OERs, and established the Communication in Science and Technology Education and Research Program Department (CoSTEP Department). Despite their limited organizational sizes—each staff consists of only 10 members or so—the departments capitalize on their features in order to support Hokkaido University's initiatives to improve its education while promoting the appeal of learning at Hokkaido University in Japan and beyond.

Two departments supporting university education

The e-Learning Department, which has been supporting online programs during the pandemic, has two main missions. One is to develop OERs that are freely accessible to anyone via ICT. Of late, open education, whereby university and other educational institutions offer learning opportunities on the internet, has proliferated and OERs have allowed Hokkaido University to offer its courses worldwide.

The e-Learning Department develops some 600 OERs for approximately 50 lectures every year. The staff's steadfast efforts to develop OERs in cooperation with course instructors have been raising the department's profile within HU. Many OERs are based on videos produced by staff members who have expertise in video recording, video editing, copyright compliance, and the like. Anyone on campus or elsewhere has free access to the Hokkaido University OpenCourseWare website, which offers resources in myriad humanities and science fields, ranging from lectures to extension courses provided by HU undergraduate and graduate schools.

The other mission of the e-Learning Department is the operation and management of the HU Education and Learning Management System (ELMS). To ensure its smooth use, the Department maintains and regularly upgrades the system based on requests from across campus.

The CoSTEP Department was formerly established as the Communicators in Science and Technology Education Unit, which operated from 2005 to 2010 with Science and Technology Promotion Adjustment Grants provided by the Ministry of Education, Culture, Sports, Science and Technology. The department has focused on three pillars: education, research, and practice regarding science and technology communication. Its educational activities center on the Communication in Science and Technology Education and Research Program (CoSTEP), which is touted by Professor Masahiro Matsuo, the OEC director, as becoming a "lifelong treasure" for students. This one-year liberal arts education program introduces students to the concept of science and technology communication and



Above: A video for educational material regarding surgical techniques is recorded at the School of Veterinary Medicine (pre-pandemic).
Below: A lecture is recorded on video in the S9 Studio of the Institute for the Advancement of Higher Education (pre-pandemic).



helps them gain fundamental skills in such communication. It attracts roughly 80 students from HU and elsewhere every year, and half of the student body is composed of people in the workforce, including company employees, local government employees, and faculty of other universities.

CoSTEP offers a regular course and an elective course. In the regular course, students are divided into teams and they organize events on campus and write articles about them. The elective course is offered on an e-learning platform to provide learning opportunities to many students, and it also includes face-to-face seminars held over the course of three days either in summer or fall. CoSTEP also has a training course for those who have completed the regular and elective courses.

Activities central to the CoSTEP Department include the periodic organization of science cafés, which are events that serve as opportunities for learning and for practically applying knowledge, as well as for interacting with citizens under a scientific theme. Two of the six science cafés held annually are planned and organized by students. Before COVID-19 made it difficult to hold large gatherings, the Science Café Sapporo, held in Kinokuniya bookstore in front of Sapporo Station, had attracted more than 100 participants each time.

The CoSTEP Department, together with students, runs the Facebook page "Like! Hokudai." Although it is no easy task to simultaneously pursue education, publicity, and



Brochures on the OEC with an easy-to-understand introduction to support programs for the development of OERs.

communication, articles concerning COVID-19 received more than 60,000 pageviews in total.

Impact of the COVID-19 pandemic

In this way, the e-Learning Department and the CoSTEP Department have been engaged in their respective activities under the OEC umbrella. However, from March 2020, when the effects of the COVID-19 pandemic began to be felt at HU, the OEC took on the new mission of supporting online instruction, starting with building a framework for providing information and support for online teaching and learning.

The first task they embarked on was the establishment of an information-sharing system for online classes, through which the e-Learning Department provided the faculty, staff, and students with information on the basics of online classes, available tools and teaching methods, and the differences between simulcast and on-demand learning, as well as their advantages and disadvantages. The department regularly held information sessions about online classes, from basic to advanced. A total of 1,800 faculty members attended the sessions, with the related website receiving roughly 170,000 pageviews as of August 31, 2020. This suggests that the Department plays a crucial role in supporting online classes.

In the meanwhile, the e-Learning Department also poured more of its energy into maintaining the ELMS and enhancing its capacities, as it has taken on greater importance in supporting classes. Although the ELMS had just been migrated to a new system in March 2020, that



Science cafés held by the CoSTEP Department. The above photo shows a pre-pandemic, in-person event; the below photo shows an online event held during the pandemic.

move was not premised on the assumption that all courses would be offered online. While the system allowed the online preparation and delivery of textbooks and reference materials, these were intended to supplement face-to-face classes. Accordingly, the department modified the system to accommodate the new requirements without skipping a beat.

Despite incidents that forced services to be suspended due to system overloads, the staff pulled through by continuously monitoring and managing the server. Dr. Katsusuke Shigeta, associate professor and director of the e-Learning Department, says: “We hope to continue our work to provide information not just about how to use the system as an ICT tool, but also about how to use the system along with teaching methods, its advantages and disadvantages, how to determine and assess study conditions, and more.”

The CoSTEP Department has also been affected by COVID-19, albeit differently. The department had taught and engaged in online and in-person practical activities, but it is now unable to hold face-to-face classes and events as it had previously been doing. The staff have decided to livestream science cafés via YouTube, answering questions using the chat box. “It’s challenging, but we’ve come to many new realizations,” reckons Dr. Shishin Kawamoto, associate professor and director of the CoSTEP Department. The positive aspects of online science cafés include an overwhelming increase in participants and lower barriers for those who feel out of their element when communicating face-to-face with others. While classes have moved online, available tools and functions remain limited, which makes it imperative to reimagine conventional ways of teaching and communicating, including the consideration of how to incorporate what had been practiced as face-to-face instruction.

The COVID-19 pandemic has raised expectations for effective communication in science and technology, but the faculty are calling on students to remain even-keeled with a calm, dispassionate view of their expertise and responsibility for providing information.

In terms of research, the CoSTEP Department has published feature articles on COVID-19 in its publication, the *Japanese Journal of Science Communication*, since mid-April. The five articles that have been published received over 17,000 pageviews in the past four months, much more than usual. Director Kawamoto remarks, “We should consider the ideal organizational structure and operations of the CoSTEP Department based on the assumption that infectious disease outbreaks, natural calamities and other incidents – that have made us recognize the importance of science and engineering communication – will continue to transpire.”

The future of the OEC

With the impact of COVID-19 likely to continue over the coming months or longer, both departments plan to further



Initiatives taken by the e-Learning Department have been recognized with many awards including:

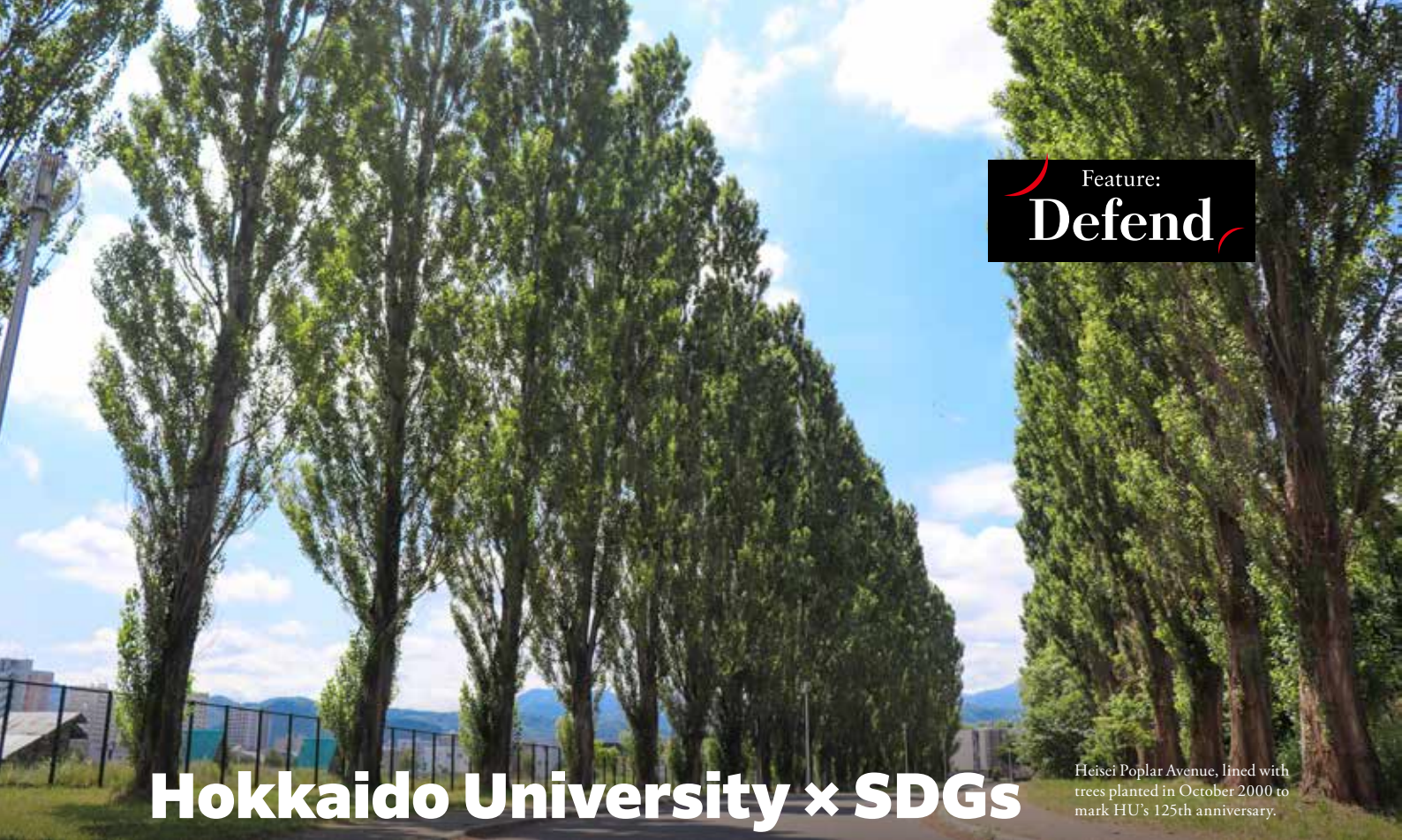
Right: The Open Courses Award of the 2018 Open Education Awards for Excellence, awarded in recognition of a set of courses of exemplary quality in the presentation of educational content, in terms of breadth, depth and creativity.

Left: The Open Education Special Category Award of the Japan E-Learning Awards (2016), awarded in recognition of excellence in e-learning content and service that unleash the learning potential and academic abilities of students.



The OEC inked a comprehensive partnership agreement with the Sapporo Community Plaza (August 2020). To the right is Dr. Masahiro Matsuo, OEC director. To the left is Mr. Masaharu Ishii, director of the Sapporo Community Plaza.

expand the scope of their activities. For instance, the OEC inked a comprehensive partnership agreement with the Sapporo Community Plaza in August 2020 to provide an opportunity for interactions and learning through the organization of events featuring science, technology and art, whose interrelations have drawn attention of late. The e-Learning Department intends to develop educational resources for digital literacy as part of its ongoing joint research with the private sector. OEC Director Matsuo states, “The e-Learning Department has expertise in educational methodologies, whereas the CoSTEP Department excels in educational practice. Both are experts in developing the educational content that we need today. We look forward to further demonstrating synergy between them.” OEC remains committed to maintaining the quality of university education and publicizing all that HU has to offer throughout Japan and elsewhere.



Feature:
Defend

Hokkaido University × SDGs

Heisei Poplar Avenue, lined with trees planted in October 2000 to mark HU's 125th anniversary.

From the Pre-SDG Pursuit of Sustainability, to Efforts to Achieve the SDGs, and Toward a Path Beyond

Hokkaido University ranked first in Japan in the Times Higher Education (THE) University Impact Rankings*¹ 2020, which shines a light on the commitment of universities to social contributions toward SDGs. The rankings are designed to showcase progress toward the 17 SDGs by measuring universities' social and economic impacts.

The United Nations Sustainable Development Goals (SDGs) are a set of goals adopted by the international community at the United Nations Summit in September 2015. The SDGs aspire to 'leave no one behind' and require concerted efforts by the international community.

The 17 SDGs, which are accompanied by 169 targets, are integrated. Since they are inseparably linked, achieving the goals requires partnerships between different academic disciplines and society in general, and there are growing expectations for universities to play their part, too.

The history of Hokkaido University and the SDGs

HU's initiatives toward the SDGs predate their adoption at the UN.

We at HU will celebrate our 150th anniversary in 2026. As we approach this important milestone, we have been moving forward with reforms since 2014, to become an institution that can contribute to the resolution of global issues—reforms based on the basic philosophies that have

been upheld ever since HU's founding and on its long-term objectives.

One objective of the reforms, known as the Future Strategy for the 150th Anniversary of Hokkaido University, is to sustain future generations by resolving various issues.

The appeal of HU includes vast fields, such as on the Sapporo Campus, which has 11 undergraduate schools, the Hakodate Campus, a livestock farm and other farms, a botanical garden, experimental forests—some of the largest such forests at any university in Japan—and training ships (the Oshoro-Marui and the Ushio-Marui) that belong to the School of Fisheries Sciences. Leveraging these vast, diverse fields to our advantage, HU has been engaged in research and education that are related to the SDGs.

Since establishing the Office for a Sustainable Campus (now, the Sustainable Campus Management Office) in 2010, HU has promoted sustainable campus initiatives to help create a sustainable society through its research, education, social cooperation, and campus development. Today, HU takes a leading role in such initiatives among

institutions of higher education in Japan.

Hokkaido University was initially founded as Sapporo Agricultural College. Professor Takanori Nishimura, dean of the Research Faculty of Agriculture, states, "Research and education activities to create a sustainable society have been under way at the School of Agriculture for more than 140 years, since before the term 'SDGs' even existed." In fact, research and education at the School, the Graduate School, and the Research Faculty of Agriculture are closely related to the SDGs. This year, to highlight their connections with the SDGs, the website of each laboratory includes icons for the SDGs that are related to their research activities. This demonstration of relations between their research fields and the SDGs expedite their networking with private businesses and other stakeholders in industry. Further, the interlinked nature of the SDGs is expected to promote interdisciplinary collaboration.

Educational initiatives

SDG-related student activities are also thriving on campus. In 2019, HU's Aquamou, a team of four students, became the first team from Japan to win at a Hult Prize*² Regional Summit, putting them among the top 40 teams from around the world.

"We also offer a vast lineup of SDG-related courses," remarks Professor Makoto Demura of the Faculty of Advanced Life Science. "I myself give a seminar for first-year students entitled 'Sustainable Development Goals (SDGs) and Life Science.' It is truly crucial to raise student awareness and contemplation of how their areas of specialization connect to society," he adds.

Despite the great lineup of SDG-related courses, HU's current syllabus search system does not enable students to easily find SDG-related courses. It remains a challenge to make explicit how HU courses relate to the SDGs.

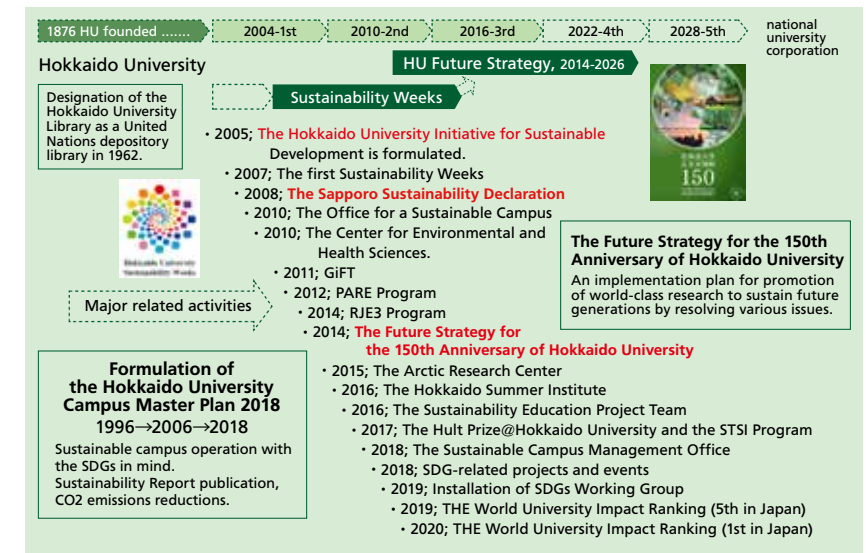
Publicizing HU's SDG initiatives far and wide

In Japan, educational reforms focusing on the SDGs are in progress. As curricula change, how incoming students can learn about the SDGs at university will become an important factor when they decide which colleges and universities to attend. "We thought HU should consider launching organized publicity campaigns," says Professor Demura.

Despite its distinguished history and achievements of contributing to the SDGs, HU lacks an organization for widely publicizing its SDG-related courses. For this reason, an SDG Working Group led by Professor Demura was established; the group's scrutiny of avenues to publicize



The 17 SDGs.



Sustainable development initiatives that have been undertaken at HU.

HU's SDG activities far and wide bore fruit in the form of a new SDG website*³ established this year. Professor Demura stresses that the website mainly targets high school students because it is most important that youths who will lead the next generation will envision their future with the SDGs in mind.

The COVID-19 pandemic stands in the way of achieving the SDGs, but it has renewed our sense of their importance. HU is expected to make further contributions to building a prosperous future.

*¹ The University Impact Rankings are high-profile annual rankings published since 2019 by *Times Higher Education (THE)*, a UK-based magazine that reports on news and issues related to higher education. In 2020, Hokkaido University placed first in Japan and 76th globally.

*² The Hult Prize, organized by the Hult Prize Foundation, is the world's largest competition for crowdsourcing entrepreneurial ideas from students. Held since 2009, this annual competition lets students worldwide compete on ideas to address challenges that align with the SDGs. The 2019 challenge was to build the foundations of a venture that will provide meaningful work for 10,000 youths within the next decade, and the winning team received seed capital of USD 1 million (approx. JPY 110 million).

*³ <https://sdgs.oec.hokudai.ac.jp>



Refining: Structural Mechanics



A New Paradigm of Manufacturing Driven by Unlocking the Secrets of Bamboo from the Perspective of Structural Mechanics

Motohiro Sato

Professor, Faculty of Engineering

A specialist in structural mechanics, Motohiro Sato earned his doctorate from the Hokkaido University Graduate School of Engineering (Division of Structural and Geotechnical Engineering). He was appointed to his current position in 2019 after serving as an assistant professor in the Graduate School of Engineering from 2002. He was awarded the NISTEP Researcher Award in 2019 by the National Institute of Science and Technology Policy (NISTEP), the Ministry of Education, Culture, Sports, Science and Technology. He is expected to play an even more significant role in the coming years and decades.

On his decision to pursue his own original research

Bamboo has been part and parcel of the lives of Japanese people, as evidenced by archaeological finds of bamboo articles unearthed at prehistoric Jomon sites. Due to its light weight and rigidity, people have used the plant for various purposes since ancient times. The hollow culm makes bamboo lightweight, despite its ability to grow to great heights. But the light weight alone would leave bamboo vulnerable to strong crosswinds and make it difficult for the plant to support its own weight. To make bamboo not only lightweight but also rigid, the hollow culm includes nodes arranged at adequate spacing in the longitudinal direction,

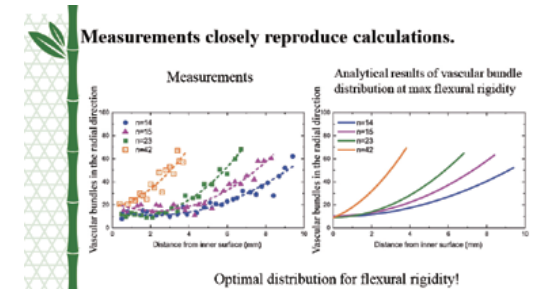
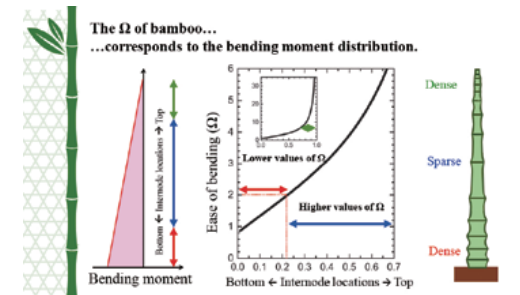
and the woody parts of bamboo are reinforced with thin but robust fibers called vascular bundles. Focusing on this unique structural morphology, Professor Motohiro Sato of the Faculty of Engineering analyzed its rigidity from the perspective of structural mechanics and revealed the plant's outstanding mechanical properties in terms of internodal spaces and the density distribution of vascular bundles.

"I wasn't good with my hands, so I was poor at making things. Instead, I enjoyed thinking logically, which led me to develop an interest in structural mechanics," says Professor Sato. After graduating from Hokkaido Sapporo Kita High School, he entered Hokkaido University (Science I) in 1993. After enrolling, he studied various subjects in the First-Year Education Division and ultimately came to consider moving on to the School of Engineering. "My first-choice was the Department of Civil Engineering, because I wanted to pursue studies in a field where I could do something grand in scale," he says. In that department, he joined a laboratory that conducts research on structural mechanics. Aspiring to pursue his own original work, he chose a career as a researcher. Since joining the Hokkaido University faculty in 2002, he has continued his own original research based on structural mechanics.

Research on bamboo from the perspective of structural mechanics

"My doctoral dissertation addressed the structural mechanics of submerged floating tunnels," says Professor Sato. That research led him to studies on the structural mechanics of various cylindrical objects, during which he came up with ideas about the structural mechanics of bamboo. Since bamboo has nodes along a hollow culm, he wondered if he could elucidate the roles of these nodes from the perspective of structural mechanics, as he thought they must play a major mechanical role. He began by looking into the internode lengths and found that the lengths in the longitudinal direction are not uniform: Nodes are spaced at short intervals near the bottom and the top and at longer intervals in the middle. "When a force such as wind acts on bamboo, greater force is applied to the bottom than to the top of the culm, so we tend to think intuitively that nodes must be concentrated near the bottom to withstand the force. But that's not true," says Professor Sato. He then looked into the correlation between nodal distribution and bamboo rigidity from the perspective of structural mechanics and found that the nodal distribution is mechanically rational. "Bamboo with many nodes would be heavy, and so, mechanically disadvantageous. I found that, to avoid this, bamboo has only the minimum necessary number of nodes and they're only in the necessary places."

Along with nodal distribution, Professor Sato focused on the density distribution of vascular bundles. Observation of the woody parts in bamboo cross sections revealed that these bundles have higher density toward the outer part and



differ in distribution near the bottom versus near the top. From mechanical theory, Professor Sato established that the distribution of vascular bundles is optimized to maximize the bending stiffness regardless of whether the bundles are at the bottom, the middle or the top of the bamboo. These research findings were featured in the scientific journal *Newton*, and the related paper received the Japan Society of Civil Engineers (JSCE) Best Paper Award. Further, in recognition of his outstanding contributions to science and technology, Professor Sato was awarded the NISTEP Researcher Award in 2019 by the National Institute of Science and Technology Policy (NISTEP), the Ministry of Education, Culture, Sports, Science and Technology.

"My goal going forward is to unlock the secrets of various structures from a mechanical viewpoint and offer the findings for use in engineering. Using unique shapes found in the natural world, I hope to give clues to a new paradigm of manufacturing," says Professor Sato. He will continue his efforts to establish plant mimetics technology, which takes advantage of novel structures and systems of plants like bamboo, and to apply it to develop new durable, lightweight materials.

Relaxation

Driving for a change!

Professor Sato loves driving. He goes on drives around Hokkaido for a change of pace.



Alumni Interview

This page features interviews with Hokkaido University alumni who are flourishing in society. The feature highlights some of those we previously interviewed. To prevent the spread of COVID-19, we interviewed them in writing this time and integrated the two interviews for this feature.



Kyushu Asahi Broadcasting Co.,Ltd
Head of public relations

Satoshi Ishibashi

| School of Fisheries Sciences Graduate |

「Vo1.56/2015」

At the time of our previous interview in 2015, Satoshi Ishibashi was the head of the President's Office and the director of the Corporate Planning Department at Kyushu Asahi Broadcasting Co., Ltd. He had served as the producer of "Kenzo Kitakata's *Suikoden* (Water Margin)," a radio drama that aired for six years. He named the drama's opening song "Immortal Honor," a term found in the lyrics of the Sapporo Agricultural College anthem. In recognition of his achievements in the drama's production, he received the Kyushu Asahi Broadcasting Company Award in 2017.

In college, he devoted his waking hours to cheerleading. In our first interview, he also shared his fond memories of drinking sake with shrimp caught while on the Hokusei-Maru training ship for practical sessions of the School of Fisheries Sciences.

When 80 current and former members of the Hokkaido University Men's Cheerleading Club and Brass Band Cheerleading Club gathered for the Seven Universities Athletic Meet at Kyushu University in the summer of 2019, he joined in and fostered relations with them.

Message to
current
Hokkaido University
students

Terms such as 'the baby boom period,' 'the bubble economy era' and 'the ice age' are a mirror of society and give images of those times. Current college students are often referred to as 'the COVID generation,' but nobody knows what this term will come to mean in the coming years and decades. I hope that current Hokkaido University students—future alumni—will view the current crisis as an opportunity and will act positively so that Hokkaido University students of 'the COVID generation' will be praised in later years.

Taishi Kamiya was engaged in new business development at Yamaha Corporation when we interviewed him in 2016. He was working on business development, collaborating with other companies and with creators, to do what his company cannot do on its own and to leverage respective strengths.

At college, he belonged to a music group and engaged in extracurricular activities. What he learned through his research on 'chaos' on campus has influenced his mindset, he says.

After leaving Yamaha, he continued his studies at the Copenhagen Institute of Interaction Design. Today, he's juggling two jobs that encompass the fields of business, design and art, at KONICA MINOLTA, INC. and TAKT PROJECT Inc.

Amidst the COVID-19 pandemic, some of you must be finding the unprecedented disruption to college life challenging, while others may be viewing it as a moment of introspection and may be discovering what you truly want to do. Learning at college is about more than just attending classes and engaging in research, so I urge you to savor every moment of the present and never idle it away.

Message to
current
Hokkaido University
students



KONICA MINOLTA, INC.
Human Experience Design Center
Design Strategist

TAKT PROJECT Inc.
Art Strategist

Taishi Kamiya

| School of Engineering Graduate |

「Vo1.57/2016」



Murata Co., Ltd. Ina Wine Factory
Chief Executive Officer, Brewing Manager

Jun Murata

| School of Pharmaceutical Sciences and Pharmacy Graduate |

「Vo1.58/2016」

Message to
current
Hokkaido University
students

Looking back, all my experiences, good and bad, have made me who I am today. Even the hours we spend against our will and the hours that appear blank aren't wasted, but shape our hearts and minds for what's to come. I therefore urge you to do your utmost to get through these trying times without feeling pessimistic.

Having been fascinated by the sheer size of the Tokachi Wine vineyard he visited while in Tokachi for practical training of the School of Pharmaceutical Sciences and Pharmacy, Jun Murata found employment at a company that had begun a winemaking business. After returning home to Nagano Prefecture, he worked as the head of a winery and has since been engaged in making wines that are ideal for Japan.

At Hokkaido University, he played trumpet in the orchestra. During our first interview, he shared his memories of practicing the trumpet until midnight at the Student Center for Extracurricular Activities. He also remarked that winemaking requires knowledge not just of basic chemistry, but also of 'integrated chemistry,' which includes biology, physics and earth science. In this sense, what he learned at the School of Pharmaceutical Sciences and Pharmacy has turned out truly useful, he says.

The brewery he runs expanded its facilities in 2020, as its custom-made wine is gradually gaining name recognition.

A picture book called *Space Station* that Keisuke Iwaya read as a child made him hanker for outer space. While at the School of Engineering, he happened to see balloon-based space photos taken by a university student in the United States, which prompted him to try balloon space photography himself. He first succeeded in photographing space when he launched his 11th balloon, and he has ultimately become one of the nation's foremost leaders in balloon space photography. Today, he is also engaged in other activities, like speaking at workshops for children, writing picture books, and giving presentations to pass his passion for fulfilling his ambitions on to the next generation.

In August 2020, he opened an office in front of Sapporo Station. He hopes to be of help to Hokkaido University students suffering from pandemic-related income losses.

I've heard that the COVID-19 pandemic has forced a highly restrictive campus life on Hokkaido University students. It remains unclear whether 'the new normal' we're witnessing right now is here to stay, but in emergency situations, people who get ahead of others in gaining the competence necessary to cope can seize a chance to win. I thus urge you to keep up your hard work while looking ahead to the future.

Message to
current
Hokkaido University
students



Iwaya Giken Inc.
Chief Executive Officer

Keisuke Iwaya

| School of Engineering Graduate |

「Vo1.59/2017」

Please visit the website below for our previous interviews with the alumni. We have released the alumni interview video series "Groups of Hokkaido University Alumni: Embodiments of the Frontier Spirit" on the HU official website and YouTube channel. In the video messages to current and aspiring college students, our alumni enthuse about their college years and the experience gained through their careers. We sincerely hope you enjoy it!



Previous interviews: Litterae Populi Vol. 56-59

URL : <https://www.hokudai.ac.jp/pr/publications/litterae.html>

Alumni interview video series: Groups of Hokkaido University Alumni: Embodiments of the Frontier Spirit

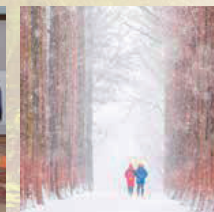
URL : <https://www.hokudai.ac.jp/interview/>



During the previous interviews, our fellow alumni gushed about what they had learned on our vast campus and what they poured their hearts into other than their academic pursuits, such as music, cheerleading, and outer space. They have never since ceased their efforts, continuing to take up new challenges in their fields. Their positive attitude has given us much-needed reassurance, as we are determined to emerge from the Covid-19 pandemic stronger and to thrive in the post-pandemic world.

Building an Even More Vibrant Alumni Network

This issue features contributions from HU Ambassador Qian Qian in China and HU Partner KunWoo Chun in South Korea.



Dr. Qian Qian

Deputy Director, China National Rice Research Institute (CNRRI)

When I was sounded out about becoming an HU Ambassador, I felt it both a great honor and a heavy responsibility. I feel truly honored that my alma mater still remembered a student from another country and appointed him as an HU Ambassador. More than three decades have passed since I left HU, but the memories of my days there are still etched in my mind. The mission of international students from China is to advance academic exchanges and cooperation between Japan and China and to contribute to the development of various research disciplines.

I was enrolled in a master's course in genetics and plant breeding at the Hokkaido University Graduate School of Agriculture from October 1986 to March 1989. The scene I most vividly recall is the one where my classmates and teachers were toiling and sweating in a field next to Poplar Avenue, lined with trees over 100 years old. The idyllic sight of their plowing the brown soil beside the green Poplar Avenue under a blue sky with white clouds made a lasting impression. Regrettably, Typhoon Songda in September 2004 toppled more than half of those poplars, but

I later received a pendant with a head made of wood from one of the toppled trees from a professor who had really helped me out while I was at HU. I've held it dear as a keepsake of my youth.

Since returning home, I've often visited HU to promote exchanges and cooperation in paddy rice research between Japan and China while doing my utmost to help advance paddy rice research in both countries by introducing scholars and other experts in China to research programs under way at HU. I've also attended gatherings of the HU China Alumni Association, where I've made every effort to support current HU students based on my friendly relations with HU officials. As luck would have it, however, I was appointed to the Chinese Academy of Sciences last year, and that appointment has made me even busier than ever. I am, therefore, thinking of retiring from my HU Ambassadorship to make way for a young alumnus or alumna.

I live in Hangzhou City. It's an adopted home where I've lived longer than in my original home, as I found employment here, got married here, and raised my children here. Hang-

zhou was a small city when I settled down, but it's rapidly grown into a vibrant metropolis thanks to the nation's decades-long reform and opening-up policies. I love this city. If there's any shortcoming, it's that the summers are too hot. Whenever I'm out in a field cross-breeding rice or observing the grain shapes in scorching heat over 40 degrees Celsius, I wish it weren't so hot. I miss the snow, the blue skies, and the white clouds of Sapporo.

Since the motto of HU is 'Be ambitious,' I hope all its students are ambitious and never cease to keep working toward their goals with the frontier spirit for which Sapporo is known and with the principles of practical learning, diligence, and innovation that have been pursued by HU. I also hope that the HU China Alumni Association will reach out to many alumni and build relations with those who are active in Hangzhou and elsewhere in China to contribute to the friendship between Japan and China and to advances in science.

Dr. KunWoo Chun

Professor, Division of Forest Science, College of Forest and Environmental Sciences, Kangwon National University

I learned about the HU Ambassador and Partner System in 2015 from Professor Joo-Young Cha, the then-director of HU's Seoul Office, and I am honored to have been inaugurated as an HU Partner at the appointment ceremony in Seoul in April 2016. I was also appointed as the first president of the Korea Yeonlyeongcho Association of Hokkaido University at its kickoff ceremony on the same day. The association is a new alumni group consisting of HU Ambassadors and Partners in South Korea. These appointments have made me feel truly honored and pleased with the opportunity to return the favor to all those at HU who helped me out in the past.

I belonged to the Laboratory of Erosion Control Engineering at the Hokkaido University Graduate School of Agriculture for four years from 1983: one year as a research student, and three years as a doctoral student. The wide-ranging guidance I received in those years from my supervisor, Professor Saburo Higashi, regarding the origin and direction of erosion control engineering laid the foundations for my 33-year academic life. Most notably, the idea of

comprehensive erosion control, as opposed to erosion control simply based on analytical interpretations of data, has been a beacon for my research.

To stay grounded in that idea after returning to Korea, I visited the laboratory every year and received guidance from professors Tohru Araya, Tomomi Marutani and Takashi Yamada. I also received instruction from Professor Futoshi Nakamura and Professor Shoichi Kimura at the Laboratory of Ecosystem Management. (Professor Kimura is an HU alumni and currently a professor at Gifu University.) Further, I have encouraged many of my students to study at HU.

Although Chuncheon City, where I live, is at a much lower latitude than Sapporo, the two cities are similar in terms of natural conditions such as vegetation; however, Sapporo has much greater snowfall. Furthermore, Kangwon National University, where I work, has a lot in common with HU. Just as the forerunner of HU was Sapporo Agricultural College, so Kangwon National University developed from Chuncheon Agricultural College. The first president of Kangwon National University graduated

from the HU School of Science, and many HU alumni have since served as the president of our university. Also, in the Division of Forest Science, the second, fourth, and ninth deans were HU alumni before I was selected to be the 14th dean.

So far, interactions among alumni appear to have been mostly limited to a personal level, like those between laboratory alumni. To expand and continue such interactions for years to come, we need to encourage alumni to participate in various events held by HU and incentivize them to contribute to exchange activities.

In our busy lives, we tend to forget what matters to us, but we alumni should keep in mind that we are who we are because we've been able to make our dreams come true—dreams we dreamed while studying on the HU campus. As we've been driven by what we learned and experienced at HU, so should we help drive HU forward and upward so that we can become the pride of the University as we work in our respective fields with an abiding belief in the institution.



1. Gongchen Bridge (built in 1631 during the Ming Dynasty), located at the southern end of the Grand Canal connecting Beijing and Hangzhou (2,500 km in length, completed in 610 during the Sui Dynasty), a UNESCO World Heritage site.
2. A rice paddy owned by the China National Rice Research Institute (CNRRI).
3. CNRRI (built in 1989), where HU Ambassador Qian Qian serves as deputy director.
4. HU Ambassador Qian Qian with primary school students who visited CNRRI on a social studies field trip.

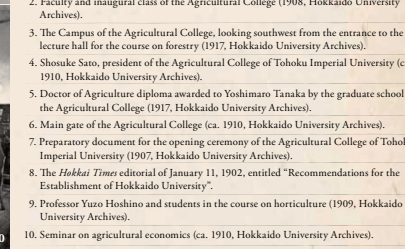
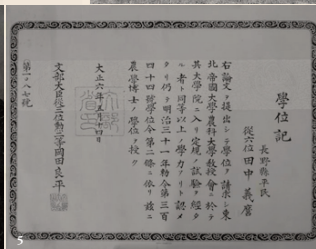


1. The inaugural ceremony of the Korea Yeonlyeongcho Association of Hokkaido University and the appointment ceremony for HU Ambassadors and Partners (April 2016).
2. A row of *Metasequoia* (dawn redwood) trees on Nami Island in the North Han River in a suburb of Chuncheon City, where Kangwon National University is located, is known as a location for the popular Korean television drama *Winter Sonata*. (Photo credit: Chuncheon City).
3. HU Partner KunWoo Chun with students on South Korea's Teachers' Day (May 15).
4. The Kangwon National University campus illuminated during its university festival (Photo credit: Kangwon National University).

140 years
of
challenge

SCENE-13

1896-1907

Elevation of Sapporo
Agricultural College to
University Status

Origins of higher educational institutes in Japan

In the 1870s, ministries and agencies of the Meiji government established institutes of higher education to produce talent with the expertise necessary to transform feudal Japan into a modern industrialized state. By 1890, many of such institutes were reorganized by the Imperial University (later renamed Tokyo Imperial University) as its colleges (which correspond to today's undergraduate schools). The colleges of law, letters, science, and medicine originated from institutes for Western studies established by the Tokugawa shogunate and placed under control of the Ministry of Education. A school established by the Ministry of Justice was integrated into the College of Law. The College of Engineering was established based on a school founded by the Ministry of Industry, and the College of Agriculture was founded based on a school whose operations had been handed over from the Ministry of Home Affairs to the Ministry of Agriculture and Commerce. The only schools that were established by government ministries and agencies but were not integrated into the Imperial University were those established by the Ministries of the Army and Navy and Sapporo Agricultural College (SAC), the last of which was founded by the Hokkaido Development Commission.

When it was founded, SAC stipulated that it would award a Bachelor of Science to students who would successfully complete prescribed courses, and it granted that degree to graduates of the college's regular course (*honka*). Technically, SAC was not a college, but it was on par with the colleges of the Imperial University.

Momentum for elevating SAC to university status

From around 1897, when Kyoto Imperial University was established as the second university in Japan, moves to increase the number of universities spread in the government and the Ministry of Education, and hopes for SAC's elevation to university status increased among SAC officials. At SAC's commencement ceremony in 1896, Yasutaro Hara, director-general of the Hokkaido Government, expressed his desire for the establishment of a university based on SAC. In 1898, the Sapporo Agricultural College Student Association published an article entitled "Recommendations for the Establishment of Sapporo Imperial University" in its brochure *Sapporo Agricultural College*. Meanwhile, SAC President Shosuke Sato

took every opportunity to lobby officials of the government and the Ministry of Education for the expansion of schools and the elevation of SAC to university status. Also calling for the establishment of a university based on SAC were the members of the Hokkaido Board of Education, the Sapporo Ward Assembly and the Hokkaido Assembly, local supporters, and newspaper and magazine publishers.

However, the momentum waned due to circumstances including the Russo-Japanese War and financial problems facing the country. In addition, the rule that a university had to have more than one college made it difficult to independently elevate SAC to university status.

In 1906, the Ministry of Education compiled a budget to add two imperial universities as follows: 1. to establish Tohoku Imperial University in Sendai consisting of the colleges of agriculture and science by elevating SAC to university status

"As business flourishes, studies on the close relationship manufacturing, forestry, and fisheries will take on greater increasingly important role in Hokkaido. As our institution eternity, we must work together to ensure that it will further

(Excerpt from President Shosuke Sato's speech at the opening ceremony of the

and newly founding the college of science in Sendai; and 2. to establish Kyushu Imperial University in Fukuoka consisting of the colleges of medicine and engineering by making the Fukuoka Medical College of Kyoto Imperial University independent and newly founding the college of engineering. Once again, financial problems would soon bring that plan to a halt.

Financial aid from the Furukawa family

To help resolve the financial problems, the Furukawa family lent a helping hand. The family owned an industrial conglomerate called the Furukawa Zaibatsu, whose companies included the Furukawa Mining Company, which ran the Ashio Copper Mine and had been under fire for pollution from that mine. Takashi Hara, who was then the minister of home affairs and would later become prime minister, had served as an advisor to the Furukawa family and came up with a plan to donate one million yen toward the expansion of universities. In his childhood, Hara had been a classmate of Shosuke Sato at a school of the Morioka

Domain.

After the government greenlighted the establishment of Tohoku Imperial University and Kyushu Imperial University, the Furukawa family donated funds to build four lecture halls for the College of Engineering of Kyushu Imperial University, one lecture hall for the College of Science of Tohoku Imperial University, and four lecture halls for the Agricultural College of Tohoku Imperial University. The lecture halls built at the Agricultural College were one for the preparatory course and the practical and fieldwork course, one for the course on agricultural chemistry, one for the course on forestry, and one for the course on stock farming. Of these nine lecture halls, only the one for the course on forestry at the Agricultural College still remains. It is today's Furukawa Hall.

Furukawa Hall has witnessed the history of SAC being elevated to university status and today's Tohoku University

between theory and practice in agriculture, importance and our institution will play an is something that should exist in timeless improve and thrive with time."

Agricultural College of Tohoku Imperial University)

and Kyushu University being established. It may be described as the last surviving witness to a history that encompasses that of universities, pollution at the Ashio Copper Mine, and the friendship between Shosuke Sato and Takashi Hara.

The Agricultural College of Tohoku Imperial University

In September 1907, the Agricultural College of Tohoku Imperial University opened with 12 courses on agriculture, agricultural chemistry, agricultural physics, botany, zoology, entomology, sericulture, horticulture, stock farming, agricultural policy, and colonial science. The courses were later increased to 27, and a graduate school was established in 1913.

In his address at the opening ceremony of the Agricultural College, President Shosuke Sato, who had attended the opening ceremony of SAC in 1876 as one of its 24 inaugural students, made reference to Harvard University and Yale University, which had also started as small schools, and he said: "With just

over 30 years of history, this institution is finally about to dive into the vast sea of scholarship." This sentence encapsulates the pride he felt at SAC having remained on par with the imperial university colleges and the emotion he felt at the thought of the hardships endured to achieve SAC's elevation to university status.

Hokkaido University
HISTORY
1896-1907

1896 July	The director-general of the Hokkaido Government expresses his desire for the elevation of SAC to university status at the commencement ceremony.
1897 June	Kyoto Imperial University is established.
1898 June	The Sapporo Agricultural College Student Association publishes an article entitled "Recommendations for the Establishment of Sapporo Imperial University" in its brochure <i>Sapporo Agricultural College</i> .
1899 May	President Shosuke Sato asks the Ministry of Education to elevate SAC to university status.
July	The Hokkaido Board of Education submits a proposal for the establishment of Sapporo Imperial University to the minister of education. A supporters' association in Sapporo submits a proposal for the establishment of Hokkaido Imperial University to the minister of education.
1900 February	The director-general of Sapporo Ward submits his opinion regarding the establishment of Hokkaido Imperial University to the director-general of the Hokkaido Government and the minister of home affairs. Supporters in Sapporo establish the Association for the Establishment of Hokkaido Imperial University.
1902 January	The <i>Hokkai Times</i> publishes an editorial entitled "Recommendations for the Establishment of Hokkaido University."
1905 November	The <i>Hokkai Times</i> publishes an opinion piece entitled "A Case for the Establishment of Hokkai University." The Hokkaido Assembly passes a proposal regarding the establishment of Hokkaido Imperial University.
1906 May	The director-general of the Hokkaido Government announces a draft Hokkaido Project Plan that includes the establishment of the university.
June	The Sapporo Ward Assembly passes a proposal regarding the establishment of the university.
August	The Hokkaido Association submits its opinion regarding the establishment of Hokkaido Agricultural University to the Ministry of Education.
December	The Furukawa family offers to donate one million yen for the expansion of universities.
1907 June	The establishment of Tohoku Imperial University is officially announced.
September	The Agricultural College of Tohoku Imperial University is established on September 1, and its opening ceremony is held on September 11.

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.

Professor Hisayoshi Yurimoto of the Faculty of Science awarded Japan's Medal with Purple Ribbon

Professor Hisayoshi Yurimoto of the Faculty of Science was awarded the Medal with Purple Ribbon at the 2020 Spring Conferment. The Medal with Purple Ribbon is a Medal of Honor bestowed by Japan upon individuals with outstanding achievements in invention or discovery in science and technology, academics, sports, and art.

Having been engaged in research and education in earth and planetary sciences for decades, Professor Yurimoto plays an active role on the global stage. His contributions include the development of the world's first isotope microscope system. Isotope microscopy is a novel tool for imaging the micro-level distribution of isotopes that are contained in meteorites and other materials. The system's development has enabled the discovery of novel cosmic

materials, resulting in great advances in our understanding of the origins of the solar system, where we humans live.

In 2011, the findings of his analysis on rock particles from the asteroid Itokawa that were returned by the asteroid probe Hayabusa were published in *Science*, an American scientific journal. Currently, he is preparing to analyze samples collected from the asteroid Ryugu that are to be returned by Hayabusa 2 in December 2020.

Professor Yurimoto says, "Who knows? Substances unknown to humans may be discovered. As researchers around the world are braving the COVID-19 pandemic in preparation to analyze the samples, I hope everyone is looking forward to what we'll find." We cannot take our eyes off his research!



Professor Yurimoto and the isotope microscope system developed at his laboratory (2015 photo).

Hokkaido University Hospital COVID-19 Fund for Safe and Secure Hospital Environment established

In July 2020, Hokkaido University Hospital established a fund for fighting COVID-19 so that patients can receive medical care without anxiety, and our health care workers can provide medical services with a sense of security.

Donations made to this fund will be used to ensure the safety and security of patients (e.g., purchasing hand

sanitizers, implementing measures to prevent infection within the hospital) and the safety and security of our health care workers (e.g., medical masks, gowns and other personal protective equipment).

The kind support and cooperation of everyone is very much appreciated.



Hokkaido University Hospital COVID-19 Fund for Safe and Secure Hospital Environment.

Contact Us

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北大病院安全安心基金

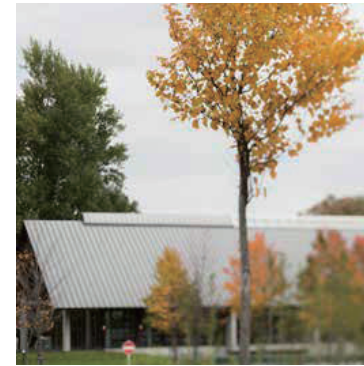


A Change of Seasons

Photographer: Akihito Yamamoto



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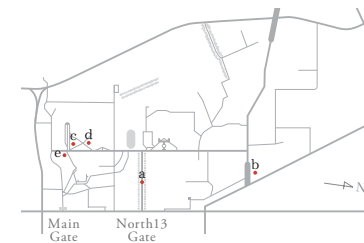
With the arrival of September, crisp autumn winds blow on campus.

Due to the COVID-19 pandemic, the usually bustling Hokkaido University campus seems serene and deserted.

For those who may find it difficult to visit our campus amid ongoing calls for prudent public action, we have uploaded videos featuring seasonal campus scenery to our website. Please enjoy them!



QR code
for videos
introducing HU.



- a. Gingko Avenue
- b. Enyu Gakusya Community Hall
- c. Entomology and Sericulture Hall
- d. Elm Grove
- e. Bust of Dr. William S. Clark

