

KYUSHU UNIVERSITY



Embodying the spirit of Kyushu

As a young boy from Nagasaki, Kyushu University was a place I deeply admired. Inspired by my father, who studied medicine here, I knew early on that this was where I belonged. More than just a place of learning, this university embodies the spirit of Kyushu itself: a region rich in history, cultural connections, and a drive for progress.

Historically, Kyushu was a gateway to Asian culture, home to instrumental figures in the Meiji Restoration, and a hub for Japan's industrial revolution. Today, Kyushu University reflects this spirit through our thriving international community, as well as our partnerships that advance society and connect us to the Kyushu-Okinawa region, Asia, and the world.

As the only university west of Kansai to become a Designated National University Corporation, we are uniquely positioned to spearhead initiatives aligned with our VISION 2030: "driving social change with integrative knowledge." But we cannot achieve this alone. Collaboration with other universities is essential. This belief led to the launch of the Kyushu Okinawa Open University (KOOU) in 2023, uniting all 11 national universities in the region to boost our research capabilities and compete globally. KOOU's 2024 partnership with the University Academic Alliance in Taiwan (UAAT) further expands opportunities for joint international research.

Our university is also at the forefront of industry-academia-government collaboration. The arrival of Taiwan Semiconductor Manufacturing Company (TSMC) in Kyushu provides exciting opportunities in technological research.

Through the Platform for All Regions of Kyushu & Okinawa for Startup-ecosystem (PARKS), which connects 18 universities, local governments, and industry, we are fostering innovation and contributing to the sustainable development of Kyushu and beyond.

As President, I am proud to lead a university that reflects Kyushu's rich heritage. I welcome international students and faculty to experience Kyushu's onsen, ocean, and stunning volcanic beauty, and help us realize our vision of social change.

Tatsuro Ishibashi
President, Kyushu University



Fast Facts



167th
QS World University
Rankings 2025

6th

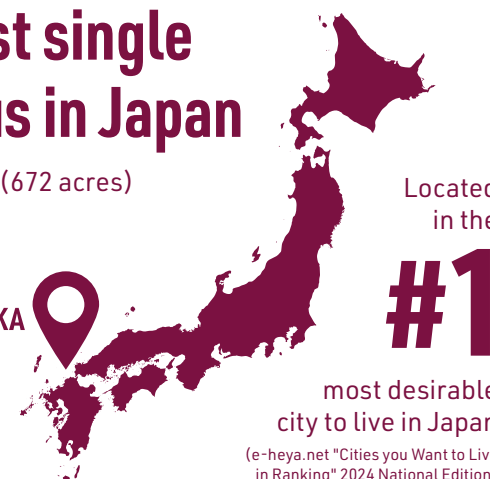
THE Japan University
Rankings 2023
(out of over 270 ranked universities)



Largest single campus in Japan

272 hectares (672 acres)

FUKUOKA



Located
in the

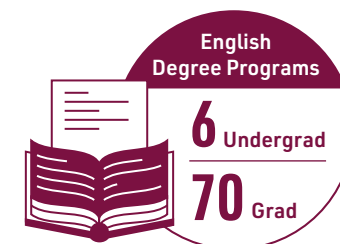
#1

most desirable
city to live in Japan

(e-heya.net "Cities you Want to Live
in Ranking" 2024 National Edition)

76

programs
offered in
English



34th

QS Asian University
Rankings 2025



1:9

Faculty to
student ratio

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Cover Story

02 PARKS Roundtable: A Kyushu-Okinawa Co-creation Platform for University Startups

Roundtable discussion on PARKS, a startup support program involving 19 universities and institutions across Kyushu and Okinawa led by Kyushu University and Kyushu Institute of Technology.



PARKS Roundtable: A KYUSHU-OKINAWA CO-CREATION PLATFORM FOR UNIVERSITY STARTUPS

Leading the way to build a startup ecosystem from Kyushu-Okinawa to the world

Famous startups from universities are a common story. But no single researcher has the expertise and knowhow to get a company off the ground and have it flourish.

This is where Kyushu University's Open Innovation Platform (OIP) comes in. Founded as a platform for academia-industry collaboration, OIP transitioned into an independent company in 2024 and now stands as the primary support system for university startups and academic-industry-government collaborations. With support from the Fukuoka City Government and local financial institutions such as The Nishi-Nippon City Bank, OIP embarks to fulfill the dreams of students and researchers who wish to bring their work to market, and to simultaneously energize the Kyushu-Okinawa region.

One program OIP leads is the Platform for All Regions of Kyushu & Okinawa for Startup-ecosystem, or PARKS: a coalition of 18 public and private universities in the Kyushu-Okinawa region. Established to create and support startup ecosystems between participating universities, the program is led by Kyushu University and Kyushu Institute

of Technology and was recently awarded a major grant from the Japan Science and Technology Agency (JST).

PARKS aims to enable the creation of university-based startups that are innovative, customer-oriented, and based on each university's strengths and regional characteristics. In addition, with cooperation from startup ecosystems in Taiwan and Singapore, PARKS aims to create a shared global ecosystem of human resources, knowledge, and funding for the benefit of all players.

Representatives of PARKS sat down for a roundtable to discuss the program's goals and the importance of Kyushu University's leading role within it.

Professor Hirofumi Furuhashi

*Deputy Program Director of PARKS
Director of Intellectual Property Management and
Startup Support Group, Academic Research and
Industrial Collaboration Management Office*



▲ Discussing PARKS's vision and goals at the Kyushu University OIP headquarters. (Kyushu University)

Q What are your motivations and goals for PARKS?

Furuhashi ▶ My major motivation is to build a startup ecosystem and use it as a platform to create many global startups that expand from Kyushu-Okinawa to the world. The important thing about these startups is that they are based on research results from universities. Naturally, we must cooperate with businesses and financial institutions in the Kyushu-Okinawa region to build the best possible ecosystem.

It is very encouraging to have people like Mr. Takamasu from Fukuoka City and Ms. Nakamura from the Nishi-Nippon City Bank joining the group. It helps us build a solid foundation for this ecosystem.

Takamasu ▶ It is difficult for a business to grow with only a university's support, so it is important to create an ecosystem that facilitates collaboration with financial institutions and various other entities. PARKS was started with the idea of creating an ecosystem in different places while also creating a single regional hub.

Furuhashi ▶ PARKS aims to provide support for university-based startup creation in the Kyushu-Okinawa region. As Mr. Takamasu mentioned, one university alone cannot provide full support, so it is essential to collaborate with businesses and governments. For example, Fukuoka City can help provide the startup with laboratory space or legal expertise.

Banks also cooperate with startups in the financial space through investments and loans. In addition, they can provide startups with vast networks to other banks, as well as to possible investors and customers rooted in the community.

Nakamura ▶ As a bank, it is important for the local community to grow and develop. If a university startup we are working with grows, it becomes a benefit to its local community.

→ Mari Nakamura

*Coordinator, Kyushu University Open
Innovation Platform Science Driven Team
Dispatch from The Nishi-Nippon City Bank*



→ Kenichi Takamasu

*Coordinator, Kyushu University Open
Innovation Platform Science Driven Team
Dispatch from the Fukuoka City Government*





Konosuke Sakai

CEO of Thymos TechnoLogic Corporation
Pre-Chief x Officer (CxO) and
Business Advisor to Professor Yuriko Aoki

Professor Yuriko Aoki

Department of Material Sciences,
Faculty of Engineering Sciences



When I first started working at the bank, I didn't know that much about university startups. I did receive inquiries about starting new businesses or a new company, but many of them were about opening stores, like ramen shops or beauty salons. Starting a business requires expertise and an understanding of the market. For university-based startups, you may even have to find or build a new market from scratch.

Furuhashi ▶ I would like to hear Prof. Aoki's perspective on startups. Your research results are very impressive, and I think that pharmaceutical companies have shown interest. What made you decide to apply for the PARKS program?

Aoki ▶ I have been developing a piece of software for use in my own research for almost 30 years. It is something that I believe can be put to practical use in drug development. But when I visited several companies, they told me this tool is too specialized. I considered starting a non-profit organization (NPO) instead; however, that proved just as hard as it was something I had very little experience in.

Furuhashi ▶ Yes, it takes a lot of energy and expertise for researchers to start a company based on their research results. This is why it is very important to have someone like Mr. Sakai accompany the project as a pre-Chief x Officer (CxO) who can work with you toward commercialization.

Aoki ▶ Yes, that was very reassuring. It was great that you were able to find someone with abilities that researchers don't have. I have already had the opportunity to interact with him for a few months, and it has made all the difference.

Nakamura ▶ Mr. Sakai actually has experience in founding his own company.

Sakai ▶ That's right. In my own business, I interact with many people at universities and research institutes. This has allowed me to see research from many angles. Researchers like Prof. Aoki are what we can call "knowledge producers" as her field is very fundamental science. Without a certain amount of professional backup, it is very difficult to turn raw research into a business. From a business perspective, we want to know if the results can be profitable. There is a gap between the technology's value and the money it can bring, and I think it is our job to devise ideas to fill that gap.

The first thing I told Prof. Aoki was that she should focus on her research's social and practical value, and I would take care of its economic and business value. This division of roles makes it easier to start a business.

Furuhashi ▶ Yes, that's right. Also, thanks to a recent government grant, PARKS can now more proactively support startups.

Takamasu ▶ One interesting fact is that the Kyushu-Okinawa region, especially Fukuoka City, does not have many major manufacturing industries. This is why there is a focus here on research and information technology (IT). By patenting a university's intellectual property and research, we can build a competitive edge. More competition leads to more business, and more business means more employment. Fukuoka City considers startups to be very important; its mayor has been committed to them for over 10 years.



▲ Clockwise from top left: Kenichi Takamasu, Professor Hirofumi Furuhashi, Konosuke Sakai, Professor Yuriko Aoki, and Mari Nakamura. (Kyushu University)

Furuhashi ▶ Fukuoka also ranks first among 21 major cities in Japan in terms of the number of new businesses opening.

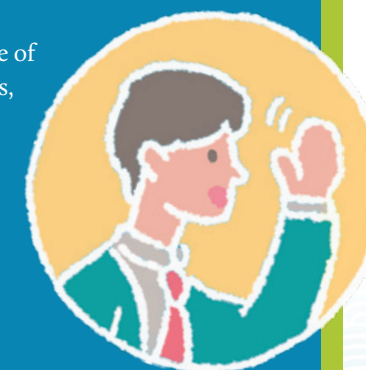
Takamasu ▶ Yes, for five years in a row. That is how many people are willing to take on the challenge of starting a business.

Q Why is Kyushu University's leadership role in PARKS important?

Furuhashi ▶ To put it simply, Kyushu University is large, and our high-level research attracts attention from all over the world. We have a significant global impact. Even if a small percentage of our research results are commercialized, it is still a comparatively large portion. Extend that to the entire Kyushu-Okinawa region and we have a trove of potential startups.

However, this kind of activity cannot be done by one university alone. If we can support each other to build a startup ecosystem and a shared platform, I think we can make the entire region more prosperous.

Takamasu ▶ This ecosystem is a mixture of different industries, geographical regions, companies, and universities. I think the fact that Kyushu University is the focal point of this 18-university collaboration will create tremendous impact and influence. Kyushu University is leading the way for everybody.



Nakamura ▶ Kyushu University is certainly the natural leader for PARKS and the region's academic output. Even just having open communications between us has massive advantages; we can learn a lot about each other's work.

Aoki ▶ As a researcher, I have spent countless hours applying for research funding. I feel that I am in a very fortunate position because Kyushu University has incredible resources to do good research, which in turn increases the chances of getting funding. I have also been in the position to review grants and look out for valuable results at smaller universities. Kyushu University leading PARKS is vital, and it is important to support the discovery of people who are working very hard in different environments.

Sakai ▶ As someone from Tokyo, in my view, you wouldn't be able to do something like this there. In Tokyo you can go one or two train stations over and feel like you are in a different world. Moreover, with so many universities it would be very difficult to organize them all. It's amazing that PARKS can bring together 18 universities across Kyushu and Okinawa to work together like this. Kyushu University has the foundation to nurture, organize, and lead everybody in the region.

Nakamura ▶ Kyushu University and the Kyushu-Okinawa region are certainly in a unique position.

Furuhashi ▶ It was not until I came to Fukuoka that I was able to work this closely with other universities, local governments, and the business community. The ties between these groups are strong. These are elements that will help both PARKS and the Kyushu-Okinawa region to succeed. 🌱



For more information on PARKS, visit the website:
<https://www.parks-startup.jp/>

READING SPRING'S ARRIVAL IN GENETIC CODE

Climate change is shifting when Japan's iconic cherry blossoms flower. A new genetics-based model could provide more accurate predictions.

The *Somei Yoshino*, Japan's most iconic cherry tree, blooms each spring, starting in Kyushu and blazing northwards to Hokkaido. Its white-pink blossoms captivate locals and tourists, with festivals and trips planned around the peak of its flowering season. However, due to climate change, the annual timing of these blooms has become increasingly unpredictable.

Now, researchers from Kyushu University have developed a model that uses gene activity to predict when Yoshino cherry buds awake from dormancy. Published in the journal *Plants, People, Planet*, their findings not only could improve cherry

blossom forecasts, but also highlight the threat climate change poses to the flowering season in southern Kyushu.

To bloom, cherry buds must pass through, or "release" two dormancy phases: endodormancy, for which they need cool temperatures over winter to break free from; and ecodormancy, for which they need the warmth of spring.

"Depending on the temperature over autumn, winter, and spring, flowering could be early, delayed, or hindered altogether," explains first author Atsuko Miyawaki-Kuwakado, a JSPS Research Fellow at the Faculty of Science.

When ecodormancy breaks, cherry buds start to grow and open. On the other hand, endodormancy release is less obvious as the buds show no external change.

"However, inside the bud, we see a different story," says Miyawaki-Kuwakado.

To capture snapshots of gene activity in Yoshino cherry plants throughout a year, the researchers took monthly samples of buds and leaves from three sites

▲ Yoshino cherry blossoms at Ito Campus, Kyushu University. (Kyushu University/Atsuko Miyawaki-Kuwakado)

across Japan: Fukuoka in the south, Tsukuba in the center and Sapporo in the north.

The team found that the activity of one gene in particular played a key role: *DAM4*, from a subset of genes associated with dormancy. While highly expressed at the start of winter, *DAM4* activity decreased with each cool day.

"Once *DAM4* activity was below a certain threshold, the buds awoke from endodormancy," says senior author Professor Akiko Satake of the Faculty of Science.

Using a model based on *DAM4*, the researchers determined that Yoshino cherry buds need around 61 days with temperatures below 10.1 °C for endodormancy to break. From historical temperature data, the team estimated that between 1990–2020, endodormancy release was delayed by 2.3 days per decade.

Moving forward, forecasters could make use of the model to improve their Yoshino blossom predictions. The researchers also plan to expose Yoshino cherry trees to different temperatures to validate and refine the model's predictions on how climate change could impact flowering.

"Without a sufficient number of cool days over winter, Yoshino buds cannot flower," says Miyawaki-Kuwakado. "Therefore, it's important to predict the impact of global warming—particularly in southern Kyushu—so that we can try to develop strategies to mitigate it."

◀ Changes in Yoshino cherry buds throughout the seasons. (Kyushu University/Atsuko Miyawaki-Kuwakado)



THE HIDDEN BIRD FLU CARRIERS

A new study from a wild bird colony in southern Kyushu reveals that blowflies carry the bird flu virus, potentially infecting nearby poultry farms.



In recent years, bird flu has been spreading rapidly around the globe, leading to the death of millions of wild birds and the culling of more than half a billion farmed birds worldwide. In Japan alone, more than 17.7 million birds were culled in the 2022–2023 season.

Kyushu University researchers have recently discovered that blowflies, a family of flies strongly attracted to decaying flesh and feces, are capable of carrying the bird flu virus. Published in *Scientific Reports*, their findings suggest a potential new transmission route for bird flu and highlight the need for new countermeasures to prevent the disease in poultry farms.

"Bird flu not only causes substantial damage to wildlife and the poultry industry,

but also poses a great risk to humans who work closely with livestock. It's vital to understand the different ways the virus can spread to prevent outbreaks," says Associate Professor Ryosuke Fujita from the Faculty of Agriculture, the study's first author.

The researchers' attention was drawn to a wild crane colony in Izumi City, Kagoshima, in southern Kyushu. In winter—the prime season for bird flu—around 10,000 cranes migrate to the area, their dense numbers making them vulnerable to infection. A reported 1,600 cranes in the area died from bird flu during the winter of 2022–2023.

"When we heard about the infections, we knew we had to

act fast," says Fujita. "We were particularly interested in one blowfly species, *Calliphora nigribarbis*, as they are most active in winter. This, along with their attraction to animal flesh and feces, made them a prime suspect for transmission."

To confirm the connection between the virus and the blowflies, the scientists set insect traps around the colony. Of the 648 blowflies they collected, 14 turned out to carry the bird flu virus—a significantly high prevalence of 2.2% compared to other insect-borne diseases.

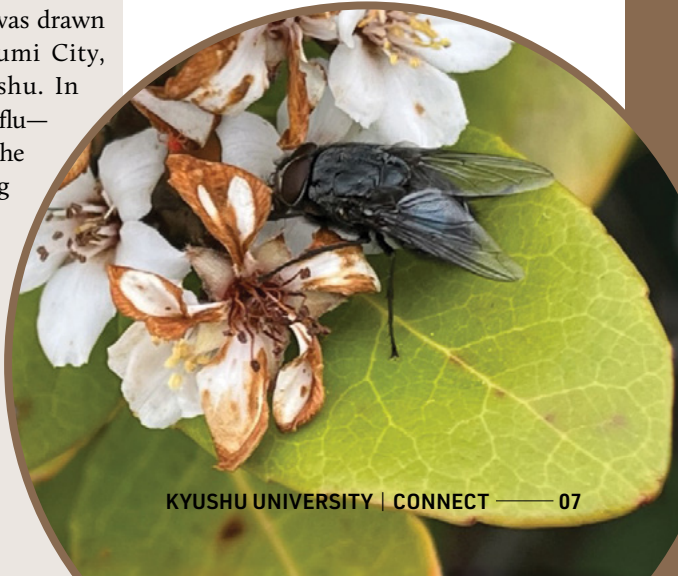
The researchers believe that as contaminated blowflies move from place to place, they could be spreading the virus to surfaces, food sources, and water sources up to 4 km away, causing bird flu outbreaks at nearby poultry farms.

However, as farmers in Japan typically use indoor farming systems, countermeasures aimed at eliminating blowflies—such as fine nets or insecticides—could be implemented fairly easily to help protect farmers from the severe financial damage of culling their flock.

Moving forward, Fujita and colleagues are studying infected poultry farms to find definitive evidence that blowflies are the cause of these outbreaks. "By using advanced technologies alongside on-the-ground research, we can better understand and control the spread of bird flu, ultimately safeguarding both animal and human health," concludes Fujita.

◀ A wild crane colony in Izumi City, Kagoshima, Japan. (Marty Oishi/Shutterstock)

▼ The blowfly *Calliphora nigribarbis*, a potential means of bird flu transmission. (Kyushu University/Ryosuke Fujita)



Kyushu's Wildlife



PROTECTIONS ACROSS BORDERS FOR BORDERLESS BIRDS

Through global and cross-disciplinary collaboration, Kyushu University researchers aim to save endangered migratory birds.

With its warm currents and abundant nature, Kyushu is a key stopover and wintering site for migratory birds. Its wetlands welcome tens of thousands of waterbirds and shorebirds every year. For species such as cranes and sandpipers especially—that cannot float as ducks do—the shallow mudflats are irreplaceable refueling stations, providing them with essential shelter and nourishment to continue their epic journeys across oceans.

While Kyushu has expanded its national parks and wildlife reserves to cover over 10% of the island, restoring clean waters and safe havens for birds, these measures alone are not enough to safeguard their migratory paths. “Creating protected areas is important, but not the whole solution,” says Associate Professor Toshinori Tanaka, who leads efforts in environmental governance and conservation research at the Kyushu University Institute for Asian and Oceanian Studies.

By monitoring surveys through camera traps and observation studies, Tanaka’s team has shown that birds on migration never



◀ Researchers monitor migratory birds in the wetlands. (Kyushu University)

▼ The endangered Great Knot, a small wader, on a Japanese shore. (Shingo Uemura/Japan Bird Research Association)

restrict themselves to the designated reserves, but frequent farmlands and human-inhabited areas with equal enthusiasm. Their findings call for “beyond the boundary” protections, including organic farming and community engagement.

Breaking boundaries is essential for successful bird conservation. Migratory birds ignore human divisions as they travel across borders, but their protection requires cross-national data, along with joint analyses from environmental scientists, ornithologists, and other experts. Yet, a single nation’s inaction—whether through poor land management, uncontrolled hunting, or armed conflict—can turn the birds’ arduous migration into a deadly trial. Long-lasting, effective solutions need cross-disciplinary collaborations that transcend national borders.

Tanaka is also conducting an administrative analysis of the Ramsar Convention, a global commitment to protecting wetlands. “The Ramsar Convention sparks collaboration among governments, communities, NGOs, and researchers,” notes Tanaka. “Through local and international networks, people worldwide share expertise to safeguard migratory birds.”

Such growing cooperation has already produced tangible results. For instance, the black-faced spoonbill, a graceful white bird with a distinctive spoon-shaped black beak that winters in Kyushu, was once critically endangered. From a precarious population of 300 three decades ago, their chorus has since rebounded to 6,000 individuals.

With many species still teetering on the brink of extinction, Tanaka and his colleagues are working with experts along the East Asia-Australasian Flyway—one of the world’s most densely-used bird migration routes—to protect these vulnerable creatures. By harmonizing conservation across borders, the team aims to ensure that the melodies of migratory birds continue to echo from shore to shore.

“In many ways, migratory birds are symbols of peace. We should work together beyond boundaries for them, and for us,” says Tanaka. 🌿

Kyushu's Peace Education

EIGHTY YEARS ON FROM THE BOMB

Kyushu University's annual Global Peace Workshop brings local and international students together to foster a deeper understanding of peace.

Eighty years ago, the atomic bombs “Little Boy” and “Fat Man” devastated Japan, claiming the lives of hundreds of thousands.

Less than 100 km from Kyushu University, the city of Kokura in Fukuoka Prefecture was the intended target on the day of the Nagasaki bombing. This proximity makes the university a key site for peace education.

On May 18, 2024, Kyushu University held its annual Global Peace Workshop, featuring Ms. Mitoe Matsumoto, a survivor of the Nagasaki bombing. At just three years old, she witnessed her hometown’s destruction. Though distance spared her life, the explosion’s orange flash was etched into her memory, haunting her for life.

Over 100 students attended the workshop, with most coming from the Japan in Today’s World (JTW) international study program. After hearing testimonies, participants folded paper cranes—in Japan, symbols of hope and peace—which were later donated to the Nagasaki Atomic Bomb Museum.

“Hearing from someone my grandmother’s age makes history feel alive,” said Aleyna Baser, a Swedish student in the JTW program. “This isn’t like Hollywood. It’s real, grounded, and close.”



▲ Professor Masa Higo at the Kyushu University Global Peace Workshop 2024. (Kyushu University)

▶ A thousand paper cranes connected into a senbazuru. (Kyushu University)

Since 2012, Kyushu University’s International Student Center has led peace education initiatives. With students from diverse backgrounds, the Global Peace Workshop has become essential for collective reflection beyond cultural differences. By bridging these differences, the workshop fosters dialogue and deepens the understanding of peace for local and international students.

As the workshop’s principal organizer for over a decade, Professor Masa Higo from the International Student Center emphasized that peace is a global issue crucial to our planet’s future. He expressed shock that, even in Japan—the only country to have suffered a nuclear attack—some believe nuclear armament is necessary to balance international relations.

“As an international educator, I feel a deep responsibility to take peace education seriously,” Higo added. “The awarding of the 2024 Nobel Peace Prize to Nihon Hidankyo, the grassroots organization of Hiroshima and Nagasaki survivors, reminds us of the urgent need for a world free of nuclear weapons for global peace today and our future.”

As time passes, the Hiroshima and Nagasaki survivors grow older, making each opportunity to hear their voices more precious. When we shift our focus from grand narratives to individual experiences, we see history reflected in the tear-filled eyes of those who lived it. Eighty years may blur the world’s memory of war, but the trauma and stigma the survivors carry, like the wrinkles in their eyes, carve deeper with time. To keep the world free of war’s shadows, Kyushu University will continue to

engage, inspire, and pass the message of peace to future generations. 🌿



◀ Workshop participants listening to the testimonies of survivors of the Nagasaki Bombing. (Kyushu University)

Kyushu's Voices

MAPPING DIALECTS AND LANGUAGES ACROSS KYUSHU'S LANDS AND SEAS



▲ Hiroshi Miyaoka, Assistant Professor at the Faculty of Humanities. (Kyushu University)

▼ Taketomi Island in southern Okinawa. Home to around 300 residents, its local dialect is a variant of Yaeyama. (Kyushu University)

▼ Rich verb conjugations in Japanese dialects. (Kyushu University)



◀ A dialect word collection by linguists from Kyushu University and other universities. (Kyushu University)

“Pokémon very kawaii!” might be a common phrase you hear in Fukuoka. Is it a mix of English and Japanese? Not quite. What sounds like “very,” and has the same meaning, is actually “*bari*” in Fukuoka’s local dialect. As you travel further south in the Kyushu region, even this small word varies—from “*wazze*” in Kagoshima to “*deezi*” or “*ippe*” in Okinawa.

“Rolling mountains on Kyushu’s main island have shaped a wide variety of dialects,” says Hiroshi Miyaoka, Assistant Professor at the Faculty of Humanities. “We can generally divide these dialects into three main groups: *Hōnichi*, *Hichiku*, and *Satsugū*. If you journey further south to Kagoshima and Okinawa’s islands, the differences in vocabulary, grammar, and pronunciation become more fascinating.”

The names of these dialect groups come from the domains of Japan’s Edo period (1603–1868), rather than modern administrative divisions. For example, *Hichiku* combines the names of *Hizen* and *Higo*—which include today’s Kumamoto, Saga, and Nagasaki—and *Chikuzen* and *Chikugo*, now part of Fukuoka. Over time, interactions between neighboring regions allowed languages to flow, blend, and develop similarities. Meanwhile, regions with limited contact gradually formed their own linguistic characteristics in isolation.

Dialects echo the sound of history. These linguistic artifacts preserve ancient vocabulary, grammar, and pronunciation, offering vivid insights into how people once lived, worked, and thought.



▲ Dialect divisions (indicated by the blue borders) within Kyushu Island. (Kyushu University)

“Folk songs, festival chants, and herbal medicine recipes often rely on dialects to survive. If replaced by a standard language, something essential is always lost,” says Ryuichi Taki, Assistant Professor at the Faculty of Humanities. “Dialects carry the whispers of our ancestors. While no system collapses when a dialect fades, it feels like something irreplaceable slips away.”

Yet, the rich variety of words and sounds that took centuries to form is rapidly disappearing worldwide. In Japan, the seeds of this decline were sown during the standardization of the Tokyo dialect decades ago, with schools even enforcing punishments for speaking regional dialects.

The resulting shame associated with regional speech, combined with population shifts, standardized education, and media influence, has hastened the erosion of linguistic diversity. The Kyushu region, especially Amami and Okinawa, is in a critical situation, harboring six of Japan’s eight endangered languages as classified by UNESCO.

Recognizing the silent disappearance of regional languages, Kyushu University linguists have been dedicated to their preservation since the 1970s. While some mine ancient literature to reconstruct the history of dialects, many others visit remote regions—from mountain villages like Miyazaki’s Shiiba to distant islands like Okinawa’s Miyako and Yaeyama—to collect firsthand linguistic data.

Besides engaging with local speakers to investigate pronunciations and word usage, these researchers also quietly observe everyday conversations to capture language in its natural state. Over decades of fieldwork, they have explored every corner of Kyushu, piecing together local stories and memories to complete the puzzle of the region’s dialects and languages.



◀ Ryuichi Taki, Assistant Professor at the Faculty of Humanities. (Kyushu University)



◀ Natsuko Nakagawa, Associate Professor at the Faculty of Humanities. (Kyushu University)

Back in university labs, the collected data undergoes transcription—a task still largely manual, as artificial intelligence (AI) struggles with the nuances of Kyushu dialects and languages. This labor-intensive process, where a minute of audio might require an hour to transcribe, is just the first step. Like how a chef starts cooking only after prepping ingredients, deeper analysis begins after the data is ready.

Research then branches into specialized recipes: some researchers conduct broad comparative studies. Miyaoka, for instance, is now examining RU-verb conjugations, such as “*mi-ru*,” meaning “to see.” While “*mi-ru*” becomes “*mi-nai*” in the negative form of the Tokyo dialect, regional dialects change it to “*mi-n*” or “*mi-ran*.” Miyaoka casts a wide net, comparing dialectal patterns across regions to uncover how and why such variations occur.

Meanwhile, other researchers like Taki zoom in on a single region or dialect, compiling encyclopedic records of pronunciation shifts, unique expressions, and distinctive grammar. Bit by bit, they build a comprehensive portrait of each region’s linguistic identity.

Over the past half-century, Kyushu University scholars have produced extensive dictionaries, grammar books, and recordings of countless conversations. Now, the university is leveraging digital innovation to preserve this rich linguistic heritage for the future. Its Graduate School of Digital Humanities, launching in 2025, will become a cross-disciplinary hub for collaboration with information scientists. It will support projects like the development of dialect conversation databases, which encourage data sharing among researchers while empowering students to explore new possibilities in the humanities with digital tools.

“Language is more than data; it connects us to our region, identity, and history,” says Associate Professor Natsuko Nakagawa from the Faculty of Humanities, adding that the digitization and sharing of linguistic data benefits not only research, but also local communities. Keenly aware that the decision to preserve local dialects ultimately lies with the source communities themselves, Nakagawa aims to return such invaluable information to them, empowering their preservation efforts.

“Universities should safeguard dialectal and cultural materials,” adds Nakagawa. “Through preserving physical books and digital recordings, Kyushu University will remain a hub for research, dialogue, and the transmission of humanity’s intellectual heritage.”

Kyushu's Geology

JAPAN'S ISLAND OF QUAKES AND FIRE

Located on the Pacific Ring of Fire, Japan is one of the world's most volcanically-active and earthquake-prone countries. Kyushu, the southernmost island of Japan's main four, is no exception: the region experiences more than 20,000 earthquakes a year and boasts 17 active volcanoes, with nine having erupted since the start of the 20th century.

"Kyushu sits on a subduction zone, where the Philippine Sea tectonic plate is forced beneath the continental Eurasian plate," explains Satoshi Matsumoto, Professor of Kyushu University's Faculty of Science and Center Director of its Institute of Seismology and Volcanology. "Millions of years ago, this subduction zone caused fierce volcanic eruptions that helped form Kyushu; the activity of these two plates still impacts the island today."

Three of Kyushu's volcanos hold particular prominence. In the island's center lies Mount Aso, Japan's largest active volcano, with a 400 km² caldera that encompasses Aso City. To the south is Sakurajima, the country's most active volcano, which regularly belches volcanic smoke from its conical peak. Finally, westward Mount Unzen—located in Nagasaki prefecture on the Shimabara Peninsula—was the site of Japan's deadliest volcanic disaster in 1792: an eruption that triggered a landslide and tsunami, killing an estimated 15,000 people.

In light of this tragedy, Kyushu University established the Shimabara Institute for the Study of Volcano and Hot Springs in 1962. Initially a temporary facility at Mount Unzen's eastern foot, this changed after a spate of earthquakes rocked the peninsula in 1968, causing concern among local officials and residents. A permanent Shimabara Volcano Observatory was established in 1971 at the Japanese government's request, tasked to continuously monitor the peninsula's volcanic and seismic activity. In 1984, the observatory expanded its scope to include seismic observation across Kyushu and was renamed the Shimabara Earthquake and Volcano Observatory (SEVO).

Mount Unzen would erupt again throughout the early 1990s, heavily damaging Shimabara City and killing more than 40 people—including three volcanologists—in a pyroclastic flow in 1991. This tragedy provided vital lessons on using monitoring data to better mitigate harm in future volcanic disasters.

In 2000, SEVO was reorganized into the Institute of Seismology and Volcanology,

◀ An aerial view of Mount Unzen erupting in 1993. The area of damage caused by pyroclastic flow and debris flow is clearly shown. (SEVO)

▼ Traces of the 1991-95 pyroclastic flow are still visible on the slopes of Mount Unzen. (2005, Nagasaki Office of River and National Highway)

an affiliated facility in Kyushu University's Faculty of Science. Currently, the institute supports the Japanese government's Earthquake and Volcano Observation Research Plan (Third Phase) to Contribute to Disaster Mitigation, in collaboration with other national universities and research institutes.

"SEVO provides high-quality fundamental scientific data for government use when developing strategies for disaster mitigation," says Matsumoto. "We monitor crustal movements and magma activity, as well as conduct research on the structure and character of the Earth's crust, to gain insight into the mechanisms underlying seismic and volcanic activity."

With better data and understanding, the researchers hope to provide more accurate forecasts of earthquakes and eruptions. "It probably will never be possible to predict exactly when these natural disasters will happen, but we could have a good idea if one is likely to occur soon," adds Matsumoto.

SEVO currently has a network of 24 permanent remote sensing stations and over 100 temporary ones that can be deployed when increased activity is detected. However, collecting data is no easy feat. Researchers often need to scale mountains or reach remote locations to install, maintain, and remove these stations.

These activities sometimes involve working with local officials. In May 2024, before the punishing summer heat and humidity took hold, SEVO volcanologist Professor Takeshi Matsushima and colleagues, along with the Japan Meteorological Agency, local disaster prevention officials, and the media, climbed Heisei-Shinzan, Mount Unzen's highest and



▲ Professor Takeshi Matsushima (right) guides parents and children on a climb up Fugen, Mount Unzen's second-highest peak, in 2024. The new lava dome, Heisei Shinzan, can be seen in the distance. (SEVO)

newest peak. Their aim was to monitor the status of a lava dome formed by the eruptions in the 1990s, which is now at risk of collapse.

At the peak, the researchers measured the temperature of the volcanic gas emissions and confirmed that the area's volcanic activity and the lava dome's condition remained unchanged.

For SEVO, conducting activities with the public—children in particular—is also important. In July 2024, Matsushima guided a parent-child mountaineering climb up Fugen, Mount Unzen's second-highest peak, and educated the children on the dual nature of volcanoes.

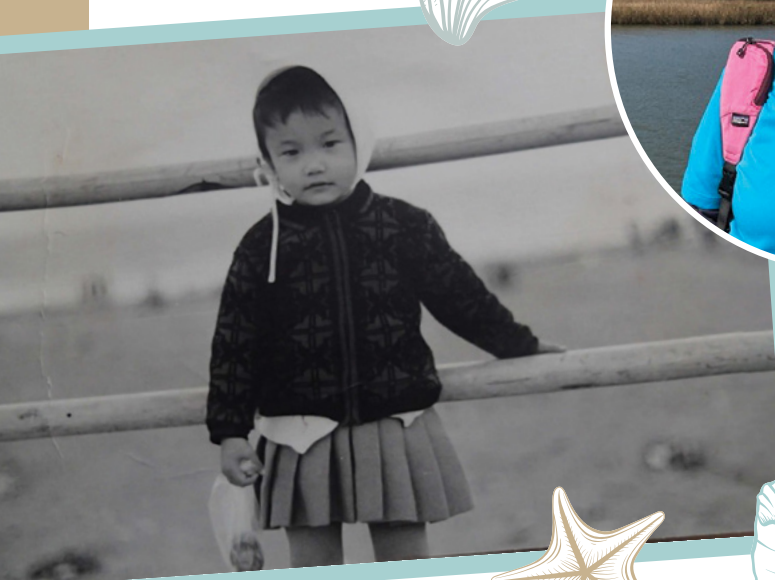
"Volcanic eruptions can cause enormous damage, but [volcanic zones] can also provide many blessings during periods of calm. Their hot springs attract locals and tourists, while their scenic beauty soothes the hearts of nature lovers. The fertile lands created by volcanic ash also provide rich benefits for local agriculture," says Matsushima.

He adds that it is important for the public to develop a "healthy fear" of volcanic eruptions based on scientific

knowledge, rather than ignorance, so as to properly understand their risks and take the right countermeasures. "Ultimately, we want to cultivate respect for the volcano, and impress the importance of coexisting with nature," notes Matsushima. 🌋

◀ Researchers, disaster prevention officials, and members of the media scale the Heisei-Shinzan peak of Mount Unzen. This area is a designated danger zone and off-limits to the public. (SEVO)





Kyushu's Ocean

PROFESSOR SEINO'S CAMPAIGN FOR COASTAL CONSERVATION

For as long as she can remember, Satoquo Seino has loved the beach and its hidden treasures. Every weekend, while her father painted the coastline of Enoshima—a popular seaside getaway close to Tokyo—3-year-old Seino would scout for seashells, bones, and rocks washed up by the currents and tides. Her childhood fascination with the ocean led Seino to study aquatic science for her bachelor's degree at the University of Tokyo. She later focused on cephalopods and their evolution during her master's degree and researched the habitats of endangered coastal species for her PhD studies.



▲ Associate Professor Satoquo Seino in Itoshima, Fukuoka. (Kyushu University)

◀ A young Satoquo Seino holds a collection bag of "ocean treasure" on a beach at Enoshima. (Yoshio Tatenno)

Now an Associate Professor of Kyushu University's Faculty of Engineering, Seino is an expert in ecological engineering, marine debris, and the conservation of marine invertebrates, including horseshoe crabs.

Horseshoe crabs are often referred to as living fossils, as they appear unchanged since the time of the dinosaurs. In Japan, horseshoe crabs are endangered due to rising ocean temperatures, overfishing, and the loss of their tidal flat habitats to economic development.

"It's almost paradoxical," says Seino. "These animals have survived in their current form for 200 million years through numerous ecological crises, but due to human activity, they now face extinction."

Currently, Seino is collecting data on how horseshoe crabs select their spawning site to lay eggs: information that can be used to restore and conserve the sites they prefer.

It was Seino's interest in horseshoe crabs that first brought her more than 30 years ago to Fukuoka in northern Kyushu, which harbors some of their largest habitats in Japan. She later joined Kyushu University in 2010.

▼ Horseshoe crabs at Moriye Bay tidal flat, Kitsuki, Oita, on the eastern coast of Kyushu. (Kyushu University/Satoquo Seino)



► Seino (right) identifies a cuttlefish bone, which a child examines using a magnifying glass. (Kyushu University)



▲ Plastic waste piles up on the beaches of Tsushima. (Kyushu University/Satoquo Seino)

◀ Umi Tsunagi participants conduct a marine litter survey. (Kyushu University/Hideo Kinoshita)



"Kyushu is such an important place for conservation efforts," says Seino. "The island marks the boundary between subtropical and temperate waters, as well as between the Eurasian continent and the Pacific Ocean. The powerful Tsushima Current brings warm water and nutrients further north, leading to an abundance of marine life. You end up with a wonderful mix of species and truly world-class marine biodiversity."

Protecting that biodiversity is one of Seino's key aims. As a researcher in ecological engineering, Seino studies coastal management, where she advocates for the design of coastal environments that benefit both humans and nature.

"Due to post-war policies to boost economic development, Japan's natural coastline has been gradually replaced by concrete walls, breakwaters, and tetrapods, causing significant environmental damage," explains Seino.

Even today, local governments receive subsidies for using concrete to address coastal erosion and typhoon surges. This often makes more expensive environmentally-friendly solutions, such as native tree planting and sand dune preservation, financially unfeasible.

Such is the case on southern Kyushu's Amami-Oshima island, where there are ongoing community protests against plans to construct a concrete seawall on the island's last remaining natural beach. Located in a UNESCO Natural World Heritage Site, Katoku Beach is home to many endemic species, and the only site in Japan where the leatherback sea turtle has been seen laying eggs.

Working with local activists, Seino has advocated for dialogue between the government and residents to find alternative solutions. She has also launched community science projects in the area, enlisting the help of local surfers to monitor the changing daily movements of Katoku's sand and river mouth.

Back in northern Kyushu, community science also plays a major role in Seino's research on marine debris. She works with locals to conduct surveys into the origin and composition of waste plastic brought to the area by the Tsushima Current. Off Kyushu and centered in the current's flow, the island of Tsushima itself—the current's namesake—is a stark reminder of the growing crisis.

"The beaches on Tsushima contain the highest amount of plastic waste in Japan," says Seino. "The situation is almost indescribable."

Community science surveys in the area have revealed that some of that waste—which includes PET bottles—originates from China, South Korea, and Japan itself in roughly equal proportions.

"The problem isn't just due to other countries, it's also homegrown. Plastic management is important, but the basic attitude to nature and the sea is what needs changing," Seino emphasizes. "People who aren't connected to the sea don't care about marine debris."

In response, Seino formed a marine education platform, *Umi Tsunagi* (meaning "sea connections"), which aims to forge links between Kyushu's local community and the ocean. Besides beach cleanups, Seino and Umi Tsunagi volunteers hold seaside classrooms to teach children about marine creatures and share the joy of treasure hunting among ocean debris.

"Before plastic pollution was an issue, the debris that washed up from the ocean was a blessing," says Seino. "Seaweed was used for fertilizer, shells were made into jewelry, and manmade objects provided glimpses of far-off cultures. Even now, it's important to look beyond the trash."

"My beachcombing childhood sparked my passion for protecting the ocean," she concludes. "If I can nurture the same interest in our future generations, then our oceans—and the marine life within—may yet be saved." 🌊

Kyushu's Health

Kyushu University Beppu Hospital: PIONEERING MEDICAL CARE FOR THE COMMUNITY AND THE WORLD



◀ Dr. Koshi Mimori, Director of the Kyushu University Beppu Hospital and Chair of its Department of Surgery. (Kyushu University Beppu Hospital)

There is a tale in Japanese mythology about the gods Ōkuninushi and Sukunabikona where the latter suddenly fell ill in the course of their journey across Japan. Saddened by his companion's condition, Ōkuninushi laid a pipe across the sea floor to bring him the rejuvenating *onsen* (hot springs) waters of Beppu. After bathing in the waters, Sukunabikona was cured of his illness. It is perhaps for this reason that Sukunabikona is known as the deity of onsen, among other fields such as agriculture, sake brewing, and medicine.

Some say that the best onsen in the world are in Japan, and that the best onsen in Japan are found in the city of Beppu, located off Kyushu's northeastern shores. The health benefits of onsen have been touted for millennia, but such claims have long lacked the scientific rigor and data needed to support them.

In 1931, Kyushu University (then Kyushu Imperial University) established the Research Institute of Balneotherapeutics, a hospital to both research the health benefits of onsen and provide medical services to the people of Beppu.

Now, 90 years into its operations, the institute—renamed Kyushu University Beppu Hospital in 2011—continues to expand its medical services and research capacity, with its most recent milestone being the opening of a new hospital wing in 2024.

Today, Kyushu University Beppu Hospital is led by Professor Koshi Mimori, who became Hospital Director in 2023. Mimori began his career at the Hospital in 2000, and as such provides a unique, in-depth perspective on its role within both Kyushu University and the Beppu community.

“The Hospital's redevelopment gave us opportunities to further improve patient care. I would like to highlight two examples: firstly, the installation of cutting-edge diagnostic and treatment equipment. These include new machines for radiation therapy and MRIs, which allow us to better identify illnesses and treat our patients in non-invasive ways,” explains Mimori. “Secondly, the re-establishment of the Department of Gynecology. We wanted to emphasize women's health for the new wing.”

◀ The Kyushu University Beppu Hospital complex. (Kyushu University Beppu Hospital)



▲ Kyushu University Beppu Hospital's rehabilitation pool, which uses onsen water. (Kyushu University Beppu Hospital)

The hospital did have an Obstetrics and Gynecology Department previously but it closed in 2006. To rectify this issue, the local community lobbied Kyushu University for the establishment of the Gynecology Department, with Mimori himself drafting letters alongside the head of the Beppu City Medical Association.

The hospital's older facilities are of course in use more than ever; its Department of Rehabilitation Medicine—which incidentally, uses an onsen as a rehabilitation pool—has been critical in helping patients recover after life-saving surgeries and other treatments.

Kyushu University Beppu Hospital's redevelopment is still ongoing, with plans for another wing already in place. There is also hope that, with support from the Kyushu University Hospital, they can open more medical departments.

“We want to strengthen our connections both locally and internationally,” adds Mimori. “As we continue our close ties with Beppu City, we would also like to work on enhancing cross-cultural medical communication.”

Mimori notes that the community's support over the near-century of the hospital's operations has been nothing short of extraordinary, emphasizing that the hospital would not exist without this community.

“In turn, it is our duty to care for, support, and show appreciation to everyone here. The motto I have for this hospital is ‘a hospital that you would want to go to if I or my loved ones were to get sick,’” says Mimori. “I would like to continue to care for the local community as I work to fight against intractable diseases like cancer, all while giving support to my patients and their families. I believe health is the agent of peace, and if I can contribute to that peace, it would be my utmost pleasure.”

Strengthening the University through the Fund

Since its establishment in 1911 as a key university in Japan, Kyushu University has maintained the highest standards of education and research in the country, producing many graduates who have supported and developed modern Japan.

Kyushu University's VISION 2030 outlines the path to transform itself into a place that “drives social change with integrative knowledge.” We strive to be an institution that not only attracts excellent researchers, but also accelerates research and innovation that lead to new value creation. Furthermore, using integrative knowledge that fuses the entire spectrum of knowledge—from the natural sciences, humanities, social sciences, and even design—we hope to solve social problems and forge new social and economic systems.

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