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Kobe University Newsletter "Kaze"

Vol. 12

April 2022

PHOTO ESSAY

Celebrating 120 Years of Student Life at Kobe University

RESEARCH AT KOBE

Reading into the present through research into mysteries

INTERNATIONAL VOICES

"COVID-19 has affected my studies in ways that I could never have imagined"

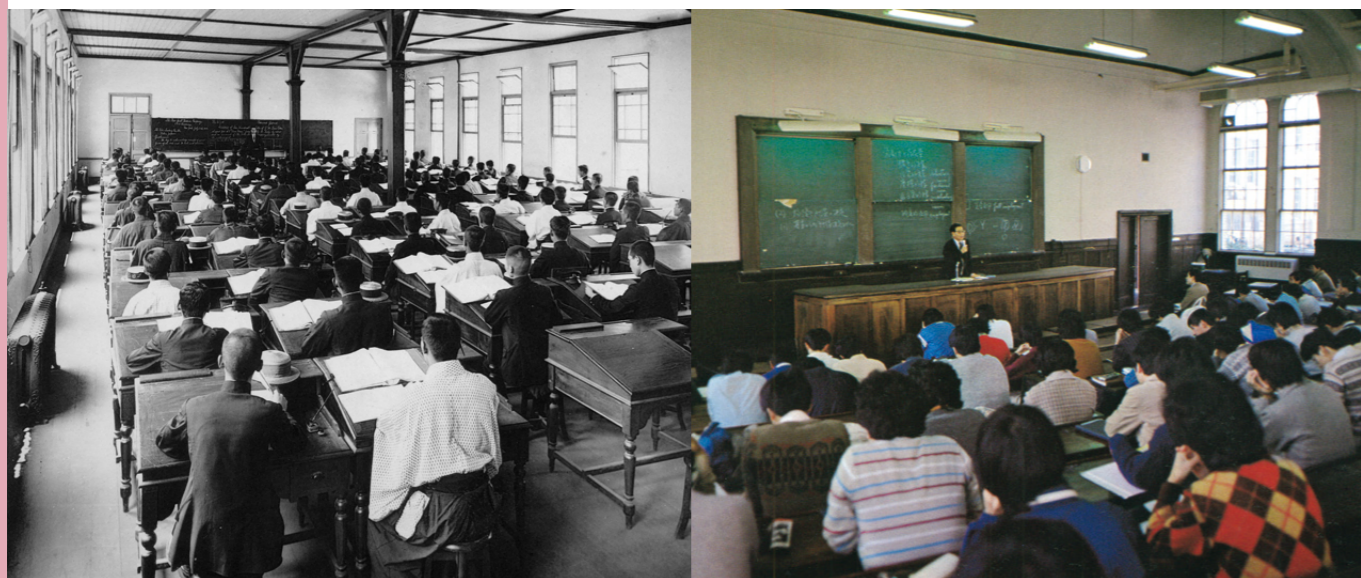


120 years of Student Life at Kobe University

KOBE UNIVERSITY

Lectures and student activities are key elements of university life. In this photo essay we delve into our 120 years of history to present snapshots of students' experiences of Kobe University.

Kobe University's Instagram page is currently running a photo countdown until our foundation day on May 15. Click [here](#) to see the series with professors and students giving their opinions on Kobe University's good points (in Japanese).



Lectures at Kobe University: Above left: Students listening to American Professor Roy Smith's lecture on international commerce (1915). Above right: Students taking a class in 1980. Below left: Students taking a machinery practical at Kobe Technical College (which would eventually merge with other institutions in 1949 to form Kobe University) (1928). Below right: A lecture on internal medicine at the former Kobe Medical College (now the School of Medicine at Kobe University) (1960).



Student Activities at Kobe University: Opposite page top: Students watch a University Festival concert (1978). Middle left: Japanese archery club members (1932). Middle right: English dialogue performance at Kobe Higher Commercial School's 1st foreign languages contest (1907). Bottom: The University Glee Club sings the school song at the Entrance Ceremony (2001).



About Kobe University's PR Magazine "Kaze"

Cover photo for Issue 12: cherry blossoms in bloom on Rokko-dai 2nd campus

Why "Kaze"?

Pronounced "Kazé", the title of this publication means 'wind' in Japanese. There are two main concepts behind this. Firstly, Kobe University's goal to innovate, creating a wind of change. Secondly, our university is located at the foot of Mt Rokkō, an area known for the invigorating wind of Rokkō-oroshi that blows down from the mountain range. The calligraphy on the cover of "Kaze" was created by Professor Emeritus UOZUMI Kazuaki, a researcher of calligraphy at Kobe University.



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Please let us know your thoughts on this issue of Kaze via the following [Questionnaire](#).

Stay connected - search for "Kobe University" on the following platforms:



Contact us: intl-plan@office.kobe-u.ac.jp
(International Affairs Planning Division)



100 years of Engineering at Kobe University



In December 2021, the Faculty of Engineering celebrated its 100th anniversary. Since its establishment, it has produced some 30,000 engineers, business people and researchers. Building upon this continued tradition is the Faculty and Graduate School's vision for the next 100 years: '---Engineering Products, Services, and Sustainable Happiness @The Port of Sapience, Kobe---'. In this special feature to mark the centenary, we interview Dean KOIKE Atsushi about the concepts and ideas behind the vision, find out about the Graduate School's latest research and hear from some current students and alumni.

Shaping values and fostering creativity: towards a technology-based sustainable society

Special interview with Professor Koike,
Dean of the Faculty & Graduate School of Engineering



As the dean, what are your thoughts on the Faculty's 100th anniversary?

I feel proud of our solid century of history. Kobe University's Faculty of Engineering produces outstanding individuals and is highly evaluated thanks to the efforts of our faculty and graduates. I feel it is my great duty to draw upon this tradition and make new strides.

What is the meaning behind the 100th anniversary vision of the Graduate School and Faculty of Engineering?

Our vision is: --Engineering Products, Services, and Sustainable Happiness @The Port of Sapience, Kobe--

In the past, engineering was the field that supported Japan's manufacturing industry, which in turn contributed to the growth of our strong economy. Therefore the main goal of education and research at our faculty and graduate school was to train engineers. Japan's industrial structure subsequently changed and now the service sector accounts for over 60% of the country's GDP. The importance of manufacturing hasn't changed, rather the fusion of manufacturing with service aspects in new fields, as well as how to make the best use of products have become the main topics of engineering research. It is vital not just to produce things but to make the best out of them and ultimately consider how they will contribute to people's welfare. I drew up this vision while thinking about the education and research that the next 100 years will produce.

So it is important to think about what kind of society we should create.

It is. University education in engineering gives back to society in the form of science and technology. Science is about looking at various phenomena in society and discovering their universal principles. When these principles are applied to society, it is engineering's job to manipulate these principles so that they suit the various types of people who make up society. For example, in the medical field when a new method of treatment is developed, it must be appropriately prescribed to the patients. In this way, there are engineers who are like local medical practitioners. New science and technology can be applied to various problems in society and this can help people and improve their wellbeing, hence the 'Happiness' part of our vision.

Therefore, students of engineering have a duty to not only study science and technology but to understand the impact that this technology has on society. Consequently, we have chosen 'cultivation' as one of the themes for our subsequent education. In my mind, this 'cultivation' is tied to the 'ability to make value judgements'.

Interviewee Profile

KOIKE Atsushi

Dean of the Faculty & Graduate School of Engineering

**Professor, Department of Civil Engineering,
Graduate School of Engineering**

Dean Koike majored in civil engineering in the Faculty of Engineering at Gifu University in 1992, going on to complete a master's course at the University's Graduate School of Engineering in 1994 and a PhD. in 1999. He has held various positions including assistant researcher at Nagaoka Institute of Technology regarding environmental and civil engineering, visiting researcher at the Netherlands Organisation for Applied Scientific Research (TNO) and Associate Professor in the Department of Social Systems Engineering at Tottori University's Graduate School of Engineering, before becoming a Professor in the Department of Civil Engineering at Kobe University's Graduate School of Engineering. He was appointed dean in 2021. His specialization is infrastructure planning and management.



--Engineering Products, Services, and Sustainable Happiness @The Port of Sapience, Kobe--

Do you mean value judgement in an ethical sense?

That's right. For example, the judgements that are made when considering the following dilemmas: 'It's scientifically correct but what about ethically?' or 'If this technology worked well for 90% of the population but caused fatal issues for 10%, what would you do?' In such situations, I cannot say that engineers would necessarily remember their obligations. Therefore, it is vital to thoroughly teach the processes that will enable them to make the correct judgement when faced with such a dilemma.

To this end, 'engineer ethics' is part of the curriculum. In these classes, students look at past cases, such as space shuttle accidents, and examine what caused them. The value judgements involve both ethical issues and philosophical issues. The impact of science and technology grows stronger every day, and as a result, an increasing number of situations require engineers to give their opinion and make decisions in regards to problems facing society. Engineers' efforts to tackle issues relating to value judgement is a topic that is covered by the 100th Anniversary Vision's Action Plan.

Should society's needs be prioritized above all else?

But the needs of society are constantly changing and 'user needs' do not equal 'society's needs'. For example, continuing the production of (conventional) cars to meet users' needs will exacerbate global warming. In other words, engineers need the background knowledge and ability to consider the needs of society before contemplating those of the user. Without this grounding, there is a danger that engineers may have an 'if there is user demand, we'll make it' attitude. Engineering's role is to look at how society is in the present and to contribute a vision of the kind of society that can be realized through scientific and engineering techniques.

For this to happen, it is important for students to be able to think freely. Students have a tendency to only come up with short-term, small-scale ideas if they are bound by realistic constraints and target values. The way of thinking that pushes target values aimed at achieving goals is removed from humanity and completely disregards the individual. This is even more of an issue nowadays. To freely come up with ideas it is extremely important to be aware of disparities between the main aim and the target values and to always approach things from a broad perspective. I would like for the Faculty of Engineering to become an 'intellectual hub' through the implementation of our education philosophy of 'shaping values by fostering creativity'.

What is the appeal of the Faculty of Engineering for high school students going on to university?

There are many outstanding students in Kobe University's Faculty of Engineering. To enable their talents to flourish in a highly creative manner, each individual student in the faculty thoroughly considers what he/she wants to do. We welcome students who wish to use their ideas to make the world a better place.

What is the appeal of the Faculty and Graduate School of Engineering for international students?

At present, about 300 overseas students study in either the Graduate School or the Faculty of Engineering at Kobe University. Fostering globally oriented human resources is one of the key missions of Kobe University and we place great importance on internationalization in all Engineering disciplines. The Faculty and Graduate School offer an excellent research and educational environment and heartily welcome students from all over the world, especially those who wish to take on the challenge of exploring new corridors and fields in engineering, and who share our vision.

Complete automation of machining can save small factories

Assistant Professor NISHIDA Isamu
(Graduate School of Engineering)

The vehicles, machines and devices that we use in our daily lives (such as smartphones, computers, cars and airplanes) use a great number of machined components. From the body of a smartphone to the turbine blades of airplane engines, these components are cut out of lumps of metals, such as aluminium alloy.

The majority of metal products are cut and manufactured by numerical control (NC) machines. These machines have an endmill that contains a cutting blade and rotates at high speeds. Information about the path that the endmill will take is generated in advance (NC program), and material is removed (cut) by moving the tool in accordance with this path information.

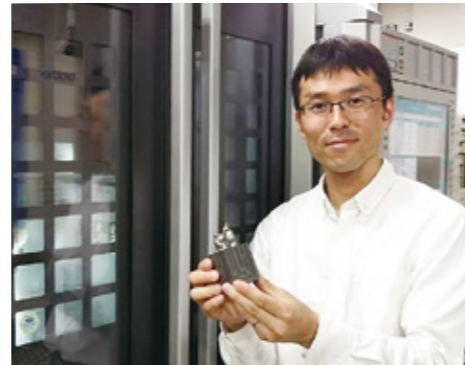
At a glance, manufacturing using NC machine tools seems to be automated, however, generating the pathway information for the tool that gives instructions to the machine requires a large amount of time and labor in addition to machining knowledge. In other words, even machining that appears to have achieved automation at first glance requires manual preparation to implement it. At present, complete automation still doesn't exist. For components of the same shape that are supplied to the market in large quantities, such as smartphone and car parts, the time and labor to generate the tool's path information is only required once to produce hundreds of NC machine tools. In this case, the percentage of man-hours required for the preparation of a single component can perhaps be ignored.

However, in small local factories it is not uncommon for only one component to be manufactured. In such cases, it is not unusual for it to take 60 minutes (of labor) to generate the tool's path information and 10 minutes for the automated manufacture by the machine. Furthermore, a limited number of engineers have the experience required to create the machine path and there is currently a shortage of human resources with these skills.

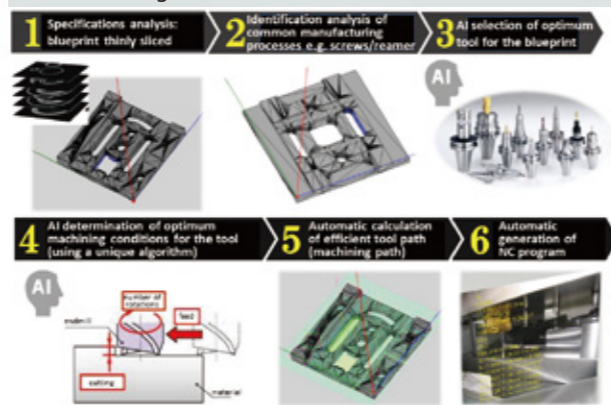
Achieving the global SDGs (Sustainable Development Goals) for sustainable industry requires not only a rethinking of the ways of doing things that have depended upon people up until now. It is also necessary to establish new manufacturing methods that make full use of computer and IoT technologies.

In my research, I am working on a system that enables the programming of the tool's pathway information to be completely automated. It only requires the user to enter the product's 3D digital information (i.e. its CAD (Computer Aided Design) model). Currently, we analyze the CAD model specifications, determine the information for each area that should be removed, select the tools for manufacturing each area, determine the machining conditions, the machining order and other such preparation tasks. I am working on implementing automation by incorporating software that can make these high level judgements currently made by experienced engineers. In this way, machining that can be automated could be entrusted to the system, enabling experienced engineers to concentrate on higher added value machining. It is important for people and systems to coexist, utilizing their respective strengths.

To get this system implemented into society, we have set up a university-launched venture company, BESTOWS Co. Ltd., which is also working on technology transfers. I hope that this will enable research achievements to be implemented in society and that the proceeds from this can be reinvested in the university to improve the research environment, which will allow new research to be conducted. I am striving each day to make this virtuous cycle a reality.



Components produced in order to gather representative manufacturing data



Fully automated generation of tool pathway information

Messages from current students

I want to contribute to society by creating things

KAWASAKI Yuta (3rd year, Department of Chemical Science and Engineering, Faculty of Engineering)



For the University entrance exam, I was unsure whether to choose the Faculty of Science or Faculty of Engineering. In the end I decided to pick the Faculty of Engineering because I want to contribute to society by creating things. Now, I am studying diverse fields related to both organic and inorganic chemistry. In the 3rd year we also do experiments, which allows us to put what we learned in years 1 to 3 into practice. In the 4th year we will be assigned to a laboratory, so everyone is conducting experiments everyday while thinking about which research group they'd like to continue working with. The majority of our classes have been held online due to the coronavirus restrictions, which means we have many assignments, so I am always busy with daily experiment reports and class assignments (laughs). Recently I have been visiting different laboratories to try to find one that suits me by observing them in person. I would like to join a laboratory that matches my future aim, which is to tackle environmental issues such as water and energy shortages. I think it is genuinely amazing that the Faculty of Engineering is 100 years old. Over the course of a century, engineers have been studying at Kobe and then going on to contribute to society. This continuation really appeals to me personally, and I hope to become one of those engineers.

Honored to be a student as the Faculty turns 100

HIROTA Kana (4th year, Department of Architecture, Faculty of Engineering)

Congratulations to Kobe University's Faculty of Engineering on its 100th anniversary. I am honored to be a current student during this momentous year. I have been interested in making and creating things since I was small. I decided to enter the Department of Architecture in the Faculty of Engineering because I particularly wanted to learn about architecture. In university classes, the design assignments left the biggest impression on me. Balancing assignments, part-time jobs and student club activities was tough, and sometimes I had to stay up all night. Doing a design assignment for the first time was very difficult, however I also found it enjoyable. I think the interesting aspect of design assignments is turning ideas that only exist inside your head into reality. Through classes, I developed an even deeper interest in the architecture of small scale buildings like houses. Consequently, I will start working at a company that renovates houses next year. I want to work hard at creating plans that suit each customer's individual needs. In conclusion, I hope that Kobe University's Faculty of Engineering will continue to develop.



Messages from graduates

You will definitely be able to use what you have learned

OHTAKA Eri (Nippon Koei Co., Ltd. (2021 Civil Engineering major, Graduate School of Engineering))

I would like to offer my heartfelt congratulations to Kobe University's Faculty of Engineering on its 100th anniversary. I entered the Faculty of Engineering in 2014 but the memories that really stand out are my days in the laboratory from 4th year onwards. There were times when my professor got cross because my seminar presentation was disappointing, or I worried all day because my research was not progressing, and I spent many long mornings in the laboratory. However, I was able to overcome these difficulties thanks to the professors who spoke frankly and gave me guidance, and my friends in the laboratory who all worked hard together. My work now involves conducting surveys, analysis and planning in order to develop railways in developing countries. My daily tasks require thinking and analytical skills as well as communication skills. I realized that these skills were cultivated through my research activities at university. Current students do not yet know what their future has in store but I think there will definitely be situations where they can utilize what they have learned at the Faculty of Engineering. I hope that they can have confidence in themselves now and tackle the studying and research tasks that are in front of them.



High quality work requires physics, math & thinking skills

NAGAO Atsushi (Yaskawa Electric Corporation (2018 Mechanical Engineering major, Graduate School of Engineering))

I left Kansai to work for a company in Fukuoka Prefecture that makes robots and have been working in the industrial technology section for 4 years. I think that many people who work for a manufacturer want to do product design. However, you have opportunities to do mechanical design even in the industrial technology section and on top of that it's fun because you have lots of creative freedom! As a designer I am still learning, but when I look back on my student days, I think that the three years I was assigned to a laboratory provided me with an excellent chance to hone my skills. In addition to being able to freely use test equipment and simulation software, my logic was objectively evaluated at weekly meetings and regular debriefing sessions. At the time I was in the yacht club and was always being scolded by an associate professor for spending too much time on club activities. However, I'm really glad now that I went on to graduate school and I'm very grateful for my professors. The quality of engineering graduates' work depends on their knowledge of physics and mathematics and their thinking skills. Regardless of whether your research topic is niche or plain, your thinking skills will gradually evolve if you focus on the issue at hand and work on steadily resolving it. Students, please make good use of the university environment and embrace it.



Reading into the present through research into mysteries



The manga and anime series *Demon Slayer: Kimetsu no Yaiba* has become a social phenomenon in Japan and English translations have also been widely distributed overseas. Researcher UE Akiko (Research Institute for Promoting Intercultural Studies; PROMIS) continues to publish a series of articles analyzing the main characters on the news and media website AERA dot, which have received an impressive number of hits (over 4 million). She specializes in researching myths, legends (e.g. German *sage*) and Germanic folklore and is particularly well-versed in tales, superstitions and legends concerning the strange and mysterious. We asked her about the significance of applying mythology research methods to the analysis of current pop culture and what can be discovered through this process.

Exploring the processes by which uncertain mysterious phenomena are inherited as fact

What is your main area of research?

My specialization is 19th century Germanic folklore and I am conducting research that encompasses folklore studies and literature. In particular, the main focus of my research is the three major works by the Brothers Grimm; which are *Grimms Märchen* (Grimms' Fairytales), *Deutsche Sagen* (German Legends) and *Deutsche Mythologie* (Teutonic Mythology), the latter of which was compiled by the older brother Jacob.

Within this, I would say that even within the Brothers Grimm my specialization is anthologies of legends. In legends, real place names appear and some of the characters are real people, so there is a strong overlap with historical fact. However, in many cases only fragments remain, so they are not fully developed stories. It is precisely for that reason that they are important materials for researchers because they are considered unadulterated.

Why did you decide to research German folklore?

When I was a student, I became interested in a story from *Uji Shui Monogatari* (a 13th century collection of Japanese tales) about the discovery of a corpse that hasn't decayed. While searching for this particular story, I stumbled across an anthology of German legends. From this point onwards, the relationship between the supernatural and the corporeal became one of my research topics. For example, there are supernatural beings that have a body, such as demons, and those who don't, such as ghosts.

If something has a body then it makes sense that there would be accounts about sightings. It should be impossible to really see ghosts and other creatures that don't have a body. So I am intrigued as to why so many people witnessed similar things and why these narratives have much in common. I term mysterious phenomena in these stories '怪異' ('*kaii*' 'supernatural'), and those who cause these supernatural happenings '怪異体' ('*kaiitai*' 'supernatural beings'). Gods and Buddha are also included in this definition, so I may get told off (laughs)!

You are also conducting interview surveys on folklore?

I am carrying out interviews but my main focus is conducting research on narrative conventions by analysing the story within the writing. Within writings that are a record of what the author heard from the storyteller, I analyze the characteristics of the flow of the narrative. From this it is possible to pick out where the storyteller's misunderstandings or dreams, or even their own visions and ideas are mixed into the narrative. It is possible to analyze whether or not these aspects were intentionally added.

Whether what is written down is true or not is very important for me. In my research, I ask 'What elements can we use to verify things that are unconfirmed, such as the supernatural?' and 'What sort of elements should be included for the text to be inherited as fact?' Therefore, I would say that my research is predominantly research into literary texts, as opposed to interview surveys.

How exactly do you analyze texts?

All elements that appear in a story or written passage, for example 'night', 'hill road', 'funeral' and 'light' etc. are called motifs. When the combination of motifs or how the motifs are linked together is unnatural, it can be inferred that the text has inconsistencies such as dreams or fabrication that were added in. From this, it is possible to ascertain whether the level of facticity is high or low. Despite finding combinations of motifs that I haven't encountered before, I get excited when I come across a text that can be judged to have a high level of facticity.

The *Demon Slayer* character analysis series has been accessed over 4 million times

What made you decide to start writing about *Demon Slayer: Kimetsu no Yaiba*?

A while ago, I started up a Kobe University research group on folklore and legends with two other people in the Research Center for Promoting Intercultural Studies. Our group is called *Shinshinshin* for short* (*this is a pun on the kanji character 神 which is the first character in both 神戸 (Kobe), myth (神話)) and mythology research group (神話学研究会). We conduct collaborative research into the connections between pop culture and mythology.

I was already interested in *Demon Slayer* but when it became really popular, many negative articles appeared in magazines and on the internet about the series. For example, misguided criticisms linking the way that the young main characters are not afraid to throw away their lives and fight to the romanticization of the kamikaze attacks during World War 2. Upon re-examining the story, I came to the conclusion that this series does not have such a political meaning nor does it glorify war, so it is my own incentive to communicate my opinion to readers.

So, you became a writer for AERA dot.?

I had asked a number of media companies if I could write about *Demon Slayer* for them. The editor at AERA dot understands my desire to turn the focus back on the manga itself and allows me to write freely. By this, I don't mean that I suddenly started writing a critique of the political interpretations of *Demon Slayer*; rather I began with character analyses. Then after a number of my articles had been published, I presented my interpretation that *Demon Slayer* does not glorify war.

How was the series of articles received?

The predicted number of page views for such internet media articles is generally 1 million. However, the very first article exceeded 1 million views and subsequent articles in the series also received this level of response. As I developed this irregular serial, more and more people learned that I was writing about *Demon Slayer* and my articles continued to receive an unusually high level of views.

When the second series of the anime was first broadcast, I started to receive between 2 million to 4 million hits. Each article has a comments section where many readers leave comments and I read them all.



Researcher Ue has edited an anthology of creation myths called 'See the beginning from world myths'. Alongside illustrations by ABE Kaita, 20 experts introduce myths about the world's beginning.

Searching myths for people's ideals and ideas of salvation

Are popular culture, myths and legends normally researched side by side like this?

The original definition of 'mythology' (神話) is 'tales of the gods'. The mythology genre of literature also includes legends about heroes. In myths and legends there is a common theme of saving something or someone, be it a country, a land, a specific group, or children. Therefore, there are many researchers who consider that works of fiction that contain a hero character can also be considered a kind of myth. However, there is a divide between researchers who approach mythology as being closely related to history, and those researchers who do not.

I think the fact that the field of mythology is so extensive and broad-ranging is a feature of recent research in this area. For example, conducting mythology research from the perspective of social studies or intellectual history, or looking at mythology through anime, manga or film studies. It is very refreshing when research on mythology advances through various mediums and fields and the conclusions come together.

How does your research on Demon Slayer link back into your specialization in researching mythology and the supernatural?

A clear motif is the requirements to defeat a demon in *Demon Slayer*. For example, demons can only be defeated with a Nichirin Blade, which absorbs sunlight and the characters use a wisteria-based poison to weaken them. This aspect of using resources from the natural world and drawing upon strength found in nature is present in ancient myths and legends. In addition, many of the main characters are children who don't have any parents and this mirrors one of the common traits of heroes in legends.

What understanding can you gain from the commonalities between stories written by modern authors and ancient myths?

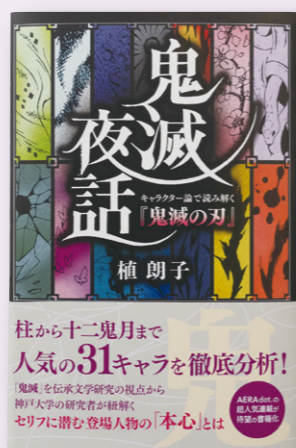
I think we can get closer to answering questions such as 'What did people of that time find aspirational?' and 'What did they want to be saved from?' Of course, the themes vary depending on the work but it is possible to find commonalities between them that are related to the period. I think that what people want from mythology is some kind of ideal or rescue: 'I want to be like that.' or 'I want to be saved like that'.

Interviewee Profile

UE AKIKO
(Researcher, Institute for Promoting Intercultural Studies ; PROMIS)

Born in Shingu City in Wakayama Prefecture, she obtained her bachelors in Japanese language and Japanese culture from the Faculty of Literature at Osaka City University, going on to obtain her master's at the same university's Graduate School of Literature. Subsequently she completed her PhD. at Kobe University's Graduate School of Intercultural Studies. In 2016, she was awarded the Sumisei Woman Researcher Encouragement Prize, which aims to support female researchers with child rearing. Her areas of specialization include Germanic folklore, legends (e.g. German sage), mythology and botanical folklore. She has an irregular serialized column on Japanese popular culture, which is published on the website of the Japanese-language magazine 'AERA' (AERA dot.)

'Kimetsu no Yawa'
Analyzing Demon Slayer through essays on its characters



Research Ue's *Demon Slayer: Kimetsu no Yaiba* character analysis essays, which have been published on AERA dot. since December 2020, are now available in book format. Trending on social media when it was published, this book contains improved versions of articles from the popular serial that have been highly evaluated by fans of *Demon Slayer*, as well as some new character analyses. It reveals hidden aspects behind the characters' dialogues and behaviour. (Published by Fusosha, 1500yen (plus tax))

You have been analyzing works by modern authors to discover what people's wants and ideals are today. Could you tell us about your upcoming research activities?

Now, I am researching myths about plants. This is also related to the body. Based on research conducted by a history of medicine research center in Germany, I am looking at old superstitious beliefs about consuming certain plants to cure certain illnesses, and the actual medicinal plants that were used. In my research, I am focussing on plants that actually have a medicinal effect as well as those that have myth-like stories about them. In comparing fairytales with scientific documents, I am maintaining scientific accuracy so as not to mislead regarding the medicinal effects of these plants.

In relation to pop culture, an academic symposium on the creation of myth-like stories in the manga/anime series *JoJo's Bizarre Adventure* and *Demon Slayer: Kimetsu no Yaiba* was recently hosted by PROMIS on February 27, 2022. I was happy that the event was attended by members of the public, including fans of both series.

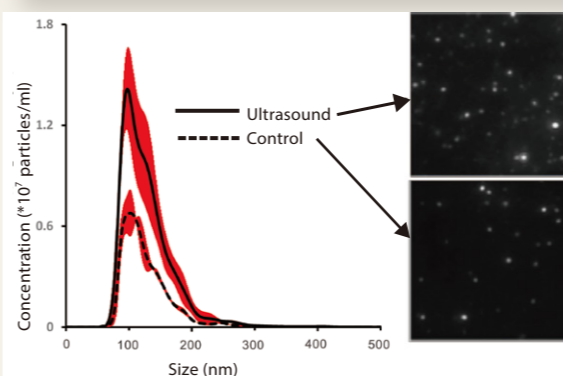
Improving physical therapy through skeletal muscle research

Outstanding Young Researcher Award Winner: Assistant Professor MAESHIGE Noriaki

2006-2010: Rehabilitation specialist at Doi Hospital (Hyogo Prefecture): Clinical research on ultrasound for bedsores/in vitro research on ultrasound therapy targeting fibroblasts.
2011-2013: Researcher in the Division of Metabolism and Disease, Department of Biophysics, Kobe University Graduate School of Health Sciences. In Professor USAMI Makoto's lab, he researched strategies to suppress exaggerated immune response and liver function impairment caused by fatty acids.
2014 onwards: Assistant professor of rehabilitation, Kobe University Graduate School of Health Sciences. Working with Professor FUJINO Hidemi's lab to research the effectiveness of physical and nutrition-based therapies for skeletal muscle.
2018: Visiting researcher at the Department of Genetics and Complex Disorders (now the Department of Molecular Metabolism), Harvard School of Public Health. In Dr. Tiffany Horng and Dr. Zhi-min Yuan's laboratories, he conducted research into skeletal muscle-mediated macrophage polarization and metabolic regulation.



Every year, Kobe University presents the Outstanding Young Researcher Awards to recognize the achievements of up-and-coming researchers and to motivate them in the hope that they will play a significant role as research leaders in the future. Five recipients were presented with these awards in 2021, with Assistant Professor MAESHIGE Noriaki receiving the President's Award. We asked him to give an overview of his work.



Promoting the secretion of muscle-derived exosomes using high-intensity ultrasound

As a rehabilitation specialist (physiotherapist/occupational therapist), I have been striving to develop a method of rectifying or supplementing the body's immune system using skeletal muscle. Skeletal muscle is not only responsible for producing movement; it also functions as a secretory organ that influences various biological processes throughout the body. However, it is not clear how we can apply this knowledge to the management and prevention of diseases that affect skeletal muscle.

In recent years, research has focused on the applications of extracellular vesicles, in particular exosomes, which are secreted by various types of cell. Treatment applications are being developed for mesenchymal stem cell-derived exosomes with anti-inflammatory properties. Interestingly, the muscle-derived exosomes secreted by cultured myotubes suppress the excessive inflammatory reactions caused by macrophages. These exosomes can also be used to curb the proliferation of prostate cancer cells. I made these two discoveries when I was an exchange researcher at the Harvard School of Public Health (through the long-term overseas dispatch system for young researcher education). Targeted manipulation of skeletal muscle activity by the therapist or patient through methods such as physical therapy or exercise can be extremely beneficial. It can make it easier for skeletal muscle to function as a secretory organ, and furthermore, it can reduce the need for skeletal muscle

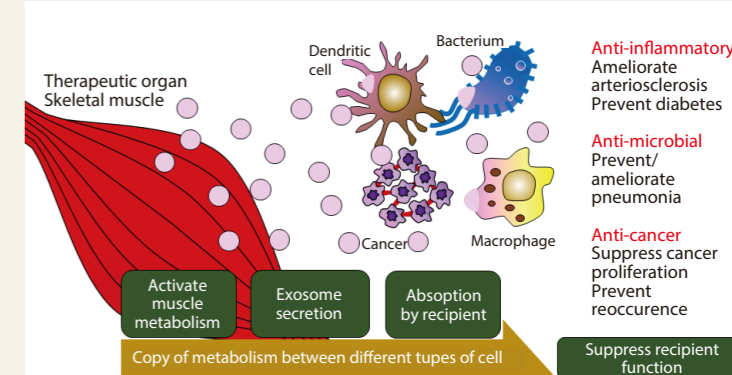
transplants from either lab-grown cultures or other people. Now I am conducting miRNA sequence analyses and metabolic analyses of exosomes and the interior of recipient cells to understand their mechanisms. I have also started to develop biomarkers that indicate muscle health.

At the same time, I am focusing on advancing physical therapy, which is part of rehabilitation processes, with particular emphasis on ultrasound. Ultrasound promotes cavitation in the tissue that it illuminates, which can induce various cellular reactions. I previously published research on the use of moderate-intensity (0.5W/cm2) ultrasound for the treatment of bedsores and this has subsequently contributed to recommended treatment guidelines both in Japan and abroad. Furthermore, using a probe with a highly uniform acoustic output that was developed by a Japanese manufacturer of physical therapy machines, it was possible to conduct a high-intensity ultrasound that didn't cause cell damage. I published a paper on the varied effects that could be achieved using this ultrasound.

One of these applications is to detect the stimulated release of exosomes from muscle. This was shown to be effective in studies using cultured myotubes and the skeletal muscle of mice, so the current goal is to try to develop ultrasound capable of comprehensive irradiation so that it can be used on human skeletal muscle. We are at the stage where we have finished making a prototype machine.

Skeletal muscle is an organ that makes a wide range of contributions to people's daily activities and health. Therefore, the overall aim is to develop highly versatile and effective rehabilitation technology at Kobe University and broadcast this development to the world.

Development of treatment and disease prevention techniques by controlling the production of skeletal muscle exosomes inside the body.





Tackling challenges with help from 164 people



Vice Captain KURIYAMA Takaki
(3rd year Faculty of Economics)

Captain MORI Keita
(4th year Faculty of Economics)

In 2021, the Soccer club became the first organization at Kobe University to run a student-led crowdfunding campaign, successfully raising 2,487,000yen. This was 3.5 times more than their original goal. We interviewed Team Captain MORI Keita, Vice-captain KURIYAMA Takaki and Manager SUMIDA Yuki.

Why did you decide to join Kobe University Soccer Club?

Mori: I joined because Kobe University Soccer Club is like a hybrid of a private university club and a national university club. It has a highly experienced coach, however this is not normally the case with national universities. The club combines the kind of strengths that private universities have with the strengths of national universities, where each member of the club contributes towards its activities in various ways. (In addition to players, the club also has both male and female support staff and managers). Therefore I joined the club because I thought it would be the best place to thoroughly learn soccer skills.

Kuriyama: I received acceptance offers from other universities, however I have always played soccer and was wondering whether I would be able to continue to do so at university. I also chose Kobe University because I wanted to expand my horizons.

Sumida: I have been the club manager for 4 years because I like management. We manage every aspect of running the club ourselves, so ever since I was a first year student I have been doing a job which has responsibilities. The students in the club were responsible for all of the crowdfunding campaign arrangements. We really value the donations we received and will do our best to put them to good use.

What are the Soccer Club's motto and three values?

Mori: The team motto for this season is 'Learn Soccer, Learn From Soccer' and our 3 values are: 'Selfless achievement', 'Do your best' and 'Never give up'. We are different from leading private schools because there is no athletics-based admission system at Kobe University; all the members decided to join the club on their own volition. We run the club independently so we have to grow as people, not just improve our soccer skills. These are the kind of values we have.



Interviewer SHIBUYA Yui
of the Student PR Team
(2nd year Graduate School of
Human Development and
Environment)

What is the Soccer Club's strength?

Mori: Our skills as an organization. Of course we put 100% into our practises and matches but even on the operations side, every member is aware of their contributions and I feel that this is Kobe University Soccer Club's strength.

What made you decide to try crowdfunding?

Mori: We decided to try crowdfunding because our long-term vision is to be promoted to division 1 of the Kansai Students' Soccer League and we didn't want our practice opportunities to be reduced due to the coronavirus. Normally, we use the soccer ground on Tsurukabuto 1st campus, however usage of university grounds was restricted based on Hyogo Prefecture's measures against the coronavirus, which meant we had to use off-campus grounds more frequently. We appealed for donations to compensate for the cost of renting off-campus grounds for the second semester league practice.

Kuriyama: League matches are played on artificial grass, however the Kobe University Soccer club has to share the campus's artificial pitch with another club, therefore there is a limit on how often we can use it. On a natural pitch, pass accuracy decreases and we cannot practice some types of trapping. Therefore it's better for us to frequently rent an off-campus artificial pitch so that we can practice in similar conditions to the actual matches.

Sumida: The soccer club management first discussed crowdfunding over 2 years ago. We submitted a petition to the university to allow student clubs to conduct their own crowdfunding campaigns and a system to enable clubs to do this was set up in spring 2021. This motion was started by the soccer club, so of course we wanted to be the first to do a crowdfunding campaign. We were absolutely determined to succeed and set a precedent, and the University staff members kindly helped us out with this. I am really grateful that we were able to achieve our goal.

You have already reached your third goal of 2 million yen. How do you feel about that now?

Mori: To be honest, I was surprised because we received donations much more quickly than expected. Many of our donors are young club alumni and people from our parents' generation, so I really feel like there is a lot of support from those close to the club. It was sobering to find out that all these people wanted to donate to us.

What are your future goals and aspirations?

Mori: Last season, we stayed in division 2, so we are putting together a team with the aim of getting into division 1 in 2022 and beyond. On the management side as well, this brought home to all members the extent of the support that our club is capable of receiving. Therefore I'd like us to actively make plans with former members and local people, increase the opportunities for people to learn more about our club, and make the club even bigger.

Kuriyama: As for me, I joined the club when I was a freshman with the aim of getting to division 1 and have been working hard to achieve this. Kobe University Soccer club has made it into division 1 before, and we have the tactics and motivation to raise our standing. I'd like us to develop a solid foundation for next year.



“COVID-19 has affected my studies in ways that I could never have imagined”

International students at Kobe University talk about their experience of the pandemic



Kristyna Metlickova
(Czech Republic)
Department of Linguistics,
Faculty of Letters

Why did you decide to come to Japan/Kobe University?

Kristyna: I graduated Japanese studies from Charles University in Prague. I then realized that I wanted to continue with Japanese linguistics and focus specifically on Japanese phonetics and phonology. It is still an understudied field in the Czech Republic, so I decided to apply for the MEXT scholarship to study it in Japan. I found a professor here at Kobe University whose interests matched mine and who was willing to take me under his guidance.

Pedro: I first decided that I wanted to come to Japan when I was about 14 years old. At that time, I was fascinated by economics and how the world revolves around it. I came across a book which explained how Japan was able to overcome the aftermath of WWII to achieve explosive economic growth in the postwar period. Thanks to this book, I became interested in Japan and eventually decided that I wanted to study here. I chose Kobe University because I thought I could study exactly what I wanted to learn here and encounter new ways of thinking.

How has the pandemic affected your studies?

Kristyna: Normally, we would be meeting at weekly lessons but this was not possible due to the strengthened pandemic restrictions. I was spending most of my time studying at home. I felt comfortable with all my online lectures. All my lecturers were trying their best to provide quality lessons. They supported and encouraged us as much as they could.

Pedro: Coronavirus has affected my studies in ways that I could never have imagined. When coronavirus started, I was still in Brazil preparing to come to Japan. The pandemic delayed my coming to Japan so I had to study

online while living in Brazil. I was taking classes at another Japanese university and my classes were conducted on Japan time. This meant that I had to attend classes at 2 or 3am in Brazil. After the classes I would sleep briefly and then get up to go to work in the morning. After coming to Japan, I also had to take classes online instead of in person due to the coronavirus restrictions. I had to do a lot of self-study because I find it harder to focus during online classes.

How has the coronavirus affected your life in Japan?

Kristyna: This is not my first time in Japan, but it has been quite a while since I last came here. I would have probably adapted more quickly to the new environment if it had not been for the pandemic. I often found myself struggling to find a healthy daily routine that would help to stimulate my productivity. I missed having direct contact with people a lot and could not help but feel a bit disconnected from other students. It took me a great deal of time to figure out how I should tackle these new needs – how to manage my time, remain calm and keep track of my goals.

Pedro: It has restricted what I can do in Japan. Due to the coronavirus, I tried not to go out or travel, however as a consequence I found it hard to make many friends. But thinking about it in a positive way, I was able to start many things that I have always wanted to do, for example going to the gym and writing books.

What are your classes like now?

Kristyna: I can still request an online consultation with my supervisor if needed. However, I hope that classes during the new semester will be held in person as usual.

Pedro: Most of my classes are online, with some exceptions. During in person classes, we have to sit some distance away from each other to prevent infection. But overall, it has been fun taking classes.

What are some good things about your life or studies during the pandemic?

Kristyna: Considering the global pandemic, I was very lucky that I was able to travel to Japan so I could take classes on Japan time. Until then I was attending classes mostly during the night (Central European Time), which was quite stressful. I was taking some very interesting lectures and seminars and attended phonological conferences hosted by renowned professors. None of this would have been possible without this scholarship.

Pedro: The only good thing that comes to mind is the fact that I don't need to go out in order to take classes therefore I can wake up later.

Any bad points?

Pedro: Most of the bad points are related to the fact that I cannot meet many people or hang out with friends. Sometimes it feels quite lonely.

Unfortunately, many new international students haven't been able to enter Japan due to the border restrictions. Do you have a message or any words of encouragement for these students?

Kristyna: I myself have many friends who could not enter Japan with me in autumn last year. I hope the situation will get better very soon so that anyone who is interested in studying in Japan can enter the country.

Pedro: Due to the pandemic, I had to wait around 6 months to come to Japan. I felt very anxious during this time, especially about my future. I couldn't help but worry that I might not be able to come to Japan at all and this feeling was unbearable.

So, I understand how these students are feeling right now. The only thing that I can say is that eventually it will work out. You will need to struggle now, but the compensation in the future will be much greater.

What do you want to do when the restrictions lift or after the pandemic?

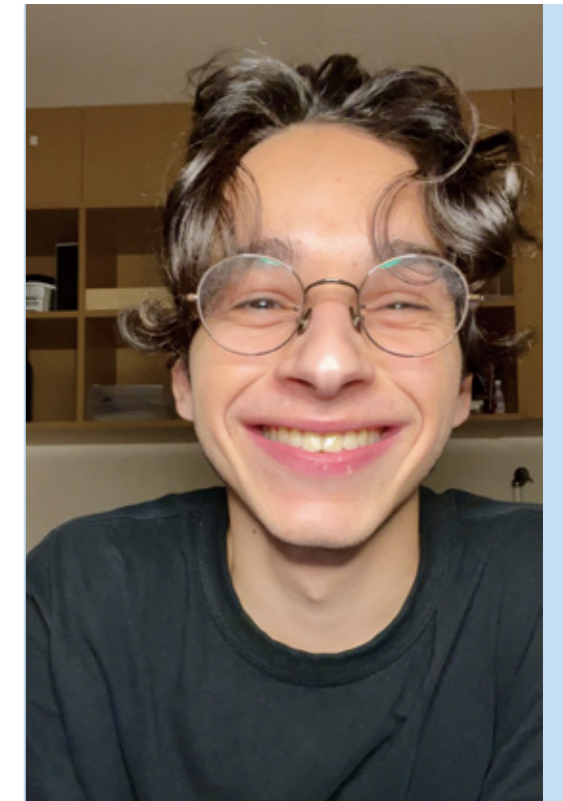
Kristyna: I like travelling, experiencing local cuisine and culture. If I had some spare time, I would definitely go to visit some interesting places or events in Kansai.

Pedro: I want to go out with some friends, meet new people and just enjoy life.

What do you want to do after you graduate?

Kristyna: My goal is to achieve a high level of proficiency in Japanese phonetics and phonology so I can apply the knowledge in practice and help to broaden the general knowledge of the field in the Czech Republic. There is a total of three universities in my country where it is possible to major Japanese philology. Czech teachers of Japanese language are mostly graduates from these universities. It is thus very important that these students are familiar not only with the grammatical and lexical systems of Japanese language, but also its system of sounds and suprasegmental features on a level that they could pass on to next generation of Japanese language students. I would like to help my colleagues find aspects of the field that interest them, so that even more Czech university students would continue to study Japanese prosody in the future. I hope that it will ultimately become an integral part of Japanese studies in the Czech Republic.

Pedro: After graduating I want to create a NGO to help people that cannot afford education. There are 2 main reasons for this. When I was living in Brazil I struggled a lot due to financial difficulties. There were times when I couldn't buy a book for my studies, or that I couldn't afford to go to the library because I didn't have enough money for the bus. I know how difficult it is when you cannot study properly due to financial difficulties, therefore I want to help others in this situation. The second reason is that public education in some countries is not ideal. With my NGO, I hope to provide good education for free to those who really need it the most. I hope I can achieve my dream and help many people around the world.



Pedro Henrique Brandao Vieira
(Brazil)
Department of Global Cultures,
Faculty of Global Human Sciences



INTERNATIONAL COLLABORATION

Americas

Kobe University Liaison Office in Seattle holds inaugural symposium

The 1st KULOS Symposium for Development of the Academic Relationship between UW and KU: Past, Present and Future" was held on online on Thursday, March 3 and Friday, March 4, 2022 (PST). This was the first event held by KULOS (Kobe University Liaison Office in Seattle), which was established in April 2020 as our first liaison office located on the US mainland.



The symposium consisted of two sessions: "Research in Economics" and "Research and Educational Activities in JST-sponsored ROOT Program". On both days, the sessions were followed by lively panel discussions. There were extensive exchanges of opinions on how the University of Washington and Kobe University can strengthen their partnership, as well as talk of holding regular meetings in the future to facilitate exchange of young researchers.

The event's closing remarks were given by SHIRAI Yasuhito (Director of the Office of Americas, Kobe University). He thanked all the participants and organizers, and hoped that similar collaborative events can be held with many different universities worldwide.

The inaugural Seattle symposium gave participants a meaningful opportunity to share their thoughts and ideas and will contribute towards further developing the relationship between the University of Washington and Kobe University.

Europe

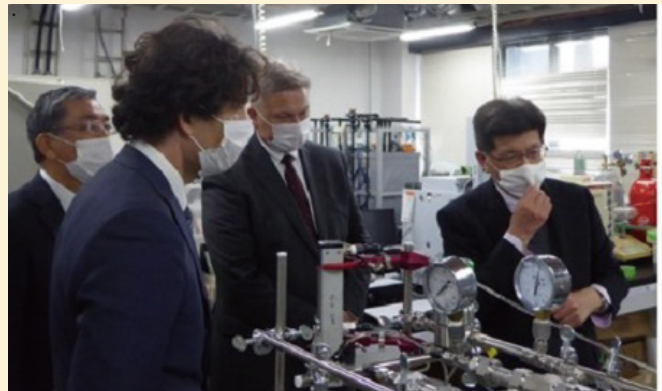
Horizon Europe round-table meeting held with the EU delegation to Japan

On March 16, Kobe University hosted a round-table meeting with the delegation of the EU Delegation to Japan and NCP Japan. This event was held to promote EU-Japan joint research through Horizon Europe, which is the European Union's key funding program for research and innovation.

The meeting featured presentations on the Horizon Europe framework and the benefits of Japanese researchers' participation, given by Science and Technology Advisor Dr. Tom Kuczynski (Delegation of the European Union to Japan) and Mr. YAMADA Naomichi (NCP for Horizon Europe in Japan). Their presentations prompted a lively exchange between the speakers and Kobe University researchers on international joint research between Japan and Europe.

The delegation also received an overview of Kobe University and its European exchange activities from Executive Vice Presidents KAWABATA Toshinori and NAKAMURA Tamotsu. Afterwards, the delegation was given a tour of the Research Center for Membrane and Film Technology

and the HoLM (Holographic Live Imaging & Manipulation) project, which are both actively carrying out joint research with European research institutions. This event was valuable opportunity to showcase Kobe University's cutting-edge research and promote future collaborations.



Asia

Visit from the Consulate General of the Republic of Korea in Kobe

On January 21, President Fujisawa welcomed a visit from the Consul-General of the Republic of Korea in Kobe, Mr. Yang Kee Ho.

The new Consul-General was welcomed by President Fujisawa, who then spoke about his numerous visits to South Korea and his experiences of exchange with Korean universities. This led to a discussion on both countries' border measures against COVID-19 and the conduction of

classes during the pandemic. Next, both parties introduced various examples of cooperation between Japan and South Korea, including academic exchanges with Kobe University's Korean partner universities and collaborations between overseas diplomatic missions and universities. In 2019, Kobe University and the Consulate-General of the Republic of Korea in Kobe co-hosted the "Japan-Korea Future Oriented and Cooperation Seeking Symposium" on the theme of "Aging". Originally postponed due to the pandemic, the series' 2nd symposium will be held in the 2022 fiscal year. This event aims to promote discussions and idea-sharing regarding the common social issues faced by Japan and South Korea.

This visit reaffirmed the smooth cooperative relationship between the two countries. We hope to work with the Consulate General to further expand our academic exchange and regional collaborations with Korean universities and research institutes.



Please let us know your thoughts on this issue of Kaze via the following [Questionnaire](#).