## KOBE UNIVERSITY

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## 2023



#### From the Past to the Future, From Kobe to the World

Located in a vibrant international port city Nestled between the mountains and the sea Kobe University draws upon over 120 years of history To cultivate globally-minded, talented individuals Bringing diverse people together from around the world To create innovative, multidisciplinary solutions That will shape the future of our planet



## MISSION

Kobe University, working in a spirit of integrity, freedom, and cooperation in keeping with its open and cosmopolitan culture and environs, aims to contribute to the global community through the creation of knowledge founded on universal values and the fostering of rich understanding and strong leadership skills.

## VISION

Towards a global hub for the multidisciplinary co-creation of research and education that cultivates profound knowledge and outstanding innovators.

Kobe University is developing into a global hub to meet the needs of a post-pandemic, knowledge-based digital society. To achieve this aim, we are cultivating invaluable human resources who can resolve current and future societal issues; bringing about innovation through the creation of new knowledge and values. We harness this intellectual and creative strength to pursue the truth through our fundamental research, as well as working together with local communities on applied research.

## MESSAGE FROM THE PRESIDENT



Kobe University President **FUJISAWA Masato** 

innovators'

Kobe University is currently focusing on a management growth strategy model in which knowledge, human resources, and funds are virtuously circulated between the university and society. An important part of this is the "Digital Bio & Life Science Research Park" initiative. Centered on the Social System Innovation Research Base, which aims to solve social problems and contribute to society, this initiative will strengthen mutual collaboration between the following bases that embody the university's strengths: the Bioproduction Research Base, Advanced Membrane Research Base, Medical Engineering Research Base, and the Health and Longevity Research Base. In addition, we are continuing to collaborate and co-create with society in order to cultivate and implement new knowledge.

issues

To maintain our global standing, we will cultivate new outstanding knowledge and people to establish Kobe University as a global center for multidisciplinary research and education, while making every effort to achieve sustainable growth and development. I hope that this brochure will give people overseas an insight into Kobe University's vision and activities, bringing about new connections to realize a better world for all.

#### Contributing to global society by cultivating new knowledge and people

Located in an international port city, Kobe University celebrated its 120th anniversary in 2022. Since our establishment, we have continued to provide education and conduct research in the spirit of integrity, freedom and cooperation, honoring our ideal of fostering 'harmony between theory and reality'. As a comprehensive research university with ten faculties and fifteen graduate schools. Kobe University's great strength lies in its open research environment, which is based on mutual cooperation between the humanities, social sciences, natural sciences and life sciences. The collaborations produced from this synergy promote multidisciplinary co-creative research. It is our main mission to contribute to society through the results of such world-leading, outstanding research. Therefore, our aims are to strengthen collaborations between industry, government and academia for the mutual development of Kobe University and society; becoming a 'global hub for the multidisciplinary co-creation of research and education that cultivates profound knowledge and outstanding

Humankind is currently facing a variety of global issues including problems related to the environment, poverty, human rights, peace, health and welfare. Universities must strive to cultivate comprehensive knowledge and strengthen their social implementation abilities in order to resolve these

## OUR GROWTH STRATEGY

### Enhancing mutual development between university and society

A virtuous cycle of knowledge, human resources and funds flowing between the university and society is vital for sustaining Kobe University's growth as a global hub for multidisciplinary co-creation. Conducting research that has high social and economic value not only raises stakeholders' trust in our institution but also increases research revenue. This revenue in turn will bolster Kobe University's outstanding education and research capabilities, contributing towards the education of talented future generations who will shape tomorrow's world.



## Digital Bio & Life Science Research Park Initiative

Kobe University's growth strategy model, the 'Digital Bio & Life Science Research Park Initiative', is a vital concept for achieving our ideal of mutual, synergistic growth between university and society. Consisting of 5 cutting-edge research bases, the initiative aims to find multidisciplinary solutions to global issues that cannot be solved by a single research field, creating overall synergies through collaborations among Japan's top-class research centers, and advancing the development of future flagships.



A cutting-edge platform centered on a fusion of bio×digital technologies. Building upon Kobe University's extensive achievements in advanced biotechnology and our strong collaborative relationships with related organizations, this new platform will drive the bioeconomy. It will promote industry-academia-government R&D collaborations to bring about innovation, implementing various Kobe University-developed technologies for bioproducing useful substances.



To solve the myriad issues facing society, it is necessary to bring innovation to the social system itself so that scientific and technological solutions to these issues will be accepted We can view society as having 3 layers: 1. Social systems, 2. Markets and organizations and 3. Technology, environment and resources. We will utilize the following 2 pillars; business platforms and public policy/welfare to bridge the gaps between these layers, to establish a world-class research base of social system innovation.

Japan's first and only advanced research center specializing in membrane engineering will promote multidisciplinary R&D on innovative membrane technologies, contributing to the establishment and application of fundamental membrane science. It aims to become an internationally-renowned center for membrane engineering research; solving global environmental and energy issues and speeding up the adoption of carbon neutral technologies.





This research base will seamlessly integrate the results of interdisciplinary research in medical engineering to develop globally competitive advanced medical devices, covering all stages of development from needs identification, solution conceptualization and validation, to commercialization strategies. The base will also foster human resources who can contribute toward these developments.

Based on the University's wide-ranging outlook and accumulated expertise on health and aging, this base seeks to enhance the well-being of society as a whole through cooperative efforts that harness the distinctive strengths of industry, government, academia and citizens. With its "well-being cross-disciplinary co-creation model", it aims to become a world-class center for promoting well-being that will lead the transition towards a more sustainable society.



## HISTORY

#### A Comprehensive National University with Over 120 Years of Tradition

Kobe University has a long history spanning over 120 years. Its roots can be traced back to the Kobe Higher Commercial School that was established in 1902. It became known as Kobe University in 1949 when seven institutions were combined into one university with 6 faculties. Nowadays, Kobe University has 10 faculties and 15 graduate schools covering a diverse range of academic fields.



## Kobe Higher Commercial School for the founding of Kobe University.

1949

1964

1966

1967

1992

1994

1995

2003

2010

2016

2022

1902

Kobe University

Kobe University was established encompassing seven former government-run institutions of higher education. Initially, the university started with the six faculties below.

1949	Faculty of Literature and Science	1954	Fa
	Faculty of Education	1992	Fac
	Faculty of Law		
	Faculty of Economics		
	School of Business Administration		
	Faculty of Engineering		

School of Medicine
Faculty of Agriculture
University Hospital
Faculty of Intercultural Stud
Faculty of Health Sciences i
Graduate School of Internat
Faculty of Maritime Science
Graduate School of System
Graduate School of Science
120th Anniversary

Faculty	Faculty of Faculty of Faculty of

Graduate

School

f Letters f Global Human Sciences Law

Faculty of Economics School of Business Adm Faculty of Science

Graduate School of Humanities Graduate School of Intercultural Studies Graduate School of Human Development and Environment Graduate School of Law Graduate School of Economics Graduate School of Business Administration Graduate School of Science Graduate School of Medicine

Established as the second government-run higher commercial school in Japan. This was the starting point

This is the origin of Kobe University's Faculty of Law, Faculty of Economics, and School of Business Administration.

aculty of Letters, Faculty of Science	
aculty of Human Development	
	2017 Faculty of Global Human Sciences
ies	
n the School of M	ledicine
ional Cooperation	n Studies
S 2021 Faculty	y of Oceanology
Informatics	
Technology and	Innovation
School of Medicin inistration Faculty of Enginee Faculty of Agricult	ring
Graduate School of Health Sci Graduate School of Engineerin Graduate School of System In	ng

- Graduate School of Agricultural Science
- Graduate School of Maritime Sciences
- Graduate School of International Cooperation Studies
- Graduate School of Science, Technology and Innovation

# RESEARCH

#### Innovating for the future

As a growing hub of world-class knowledge and expertise, Kobe University provides an outstanding research environment that facilitates multidisciplinary collaboration across all fields, from humanities and social sciences to natural sciences and biomedical sciences.

We strive to address the challenges facing the world today, including natural disasters, climate change, water shortages, environmental issues and diseases. Though our varied initiatives and focused research collaborations, we are creating and implementing new technologies and values that will contribute towards a more sustainable and advanced future for humanity.



Stress due to adverse and demanding conditions, as well as aging, have devastating impacts on mental and physical functions. We aim to elucidate the biological basis underlying stress-induced mental and physical alterations, the aging of brain functions, and resilience to stress and aging. This will enable us to develop innovative therapeutic drugs for mental and physical illnesses such as depression.



Graduate School of Medicine Prof. FURUYASHIKI Tomoyuki





In 2022, together with my colleagues, I co-founded the Kobe Institute for Atmospheric Studies (KOIAS), which aims to establish and to develop Atmospheric Studies as a new interdisciplinary field. Our research projects span a broad cross-cultural spectrum, exploring various atmospheric phenomena, which include two concepts that I am interested in: Geist (in German) and ki (in Japanese).









Graduate School of Business Administration Prof. ZENNYO Yusuke

My research interests include platform businesses employed by major

high-tech companies such as Google, Apple, Meta, Amazon, Microsoft, Uber,

and Airbnb. I am engaged in platform research from a wide range of perspectives,

including marketing strategies for profit maximization and competition policies to





Epigenetic regulation refers to changes in gene expression that are not determined by the DNA sequence. We are investigating the relationship between epigenetics and gene expression, particularly how epigenetics are related to agricultural traits such as heterosis, vernalization, and stress response (including defensive and salt stress responses in cruciferous vegetables).



Graduate School of Agricultural Science Associate Prof. FUJIMOTO Ryo



A variety of organisms live on Earth, interacting with each other. Their ecology enables us to better understand the world around us. Focusing on plant-animal-microorganism interactions, we study the causes and consequences of sexual differences within ecological communities consisting of many species.











The Orthopaedic department focuses on basic research, especially on regenerative medicine to repair bone and cartilage using vascular stem cells or adipose-derived stem cells. We have also been conducting clinical research targeting sports medicine and joint regeneration, using new technology such as robotic surgery and novel instruments.



Graduate School of Medicine Prof. KURODA Ryosuke



I am making next-generation hazard maps using supercomputers and digital transformation engineering. By having supercomputers calculate numerous hazard scenarios, we can obtain a better understanding of the probability of damage to urban structures. However, it is challenging to build a digital twin of city because of their complexity. The key technologies required to achieve this are data processing and integration.



Research Center for Urban Safety and Security Prof. OISHI Satoru



We have been developing nanomaterials with novel optical functions and related nanodevices, and exploring their applications in electronics, photonics, photochemistry and biophotonics. We conduct experimental studies on the developed nanomaterials using cutting-edge lab facilities including optical micro-spectroscopy, electrical measurements and electron microscopy.



Graduate School of Engineering Associate Prof. SUGIMOTO Hiroshi





I conduct research on the meteorological aspects of offshore wind development. have been recently involved in national projects such as creating an offshore wind resource map of the Japanese coast (NeoWins) and establishing offshore wind observation methods that use remote sensing technologies (e.g., Scanning LiDAR, Floating LiDAR).



Graduate School of Maritime Sciences Prof. OHSAWA Teruo



Solar-driven photocatalysis for the production of renewable energy, especially hydrogen gas, or high-value-added chemicals is one of the most promising ways to achieve sustainable development and a circular economy. I have been applying this technology to tackle global energy and waste issues.



Molecular Photoscience Research Center Prof. TACHIKAWA Takashi

# EDUCATION

#### Diverse programs to suit the varied needs of international students

Kobe University offers a wide variety of programs, including degree programs provided in English, short-term language programs, and Japanese cultural studies programs.

In addition to Japanese language education, we also provide comprehensive support to enable international students to get the most out of their studies and research, including advice on student life and studying, job placement support, and community exchange activities.













The graduate schools listed below offer programs conducted entirely in English, enabling students to acquire a full Masters or PhD qualification in Japan without the need for advanced Japanese language abilities.

- Law (Master)
- Business Administration (Master/PhD)
- Economics (Master)International Cooperation Studies (Master/ PhD)
- Science (Master)
- Agricultural Science (Master/ PhD)
- Medicine (PhD)
- Health Science (Master/PhD)





Kobe University offers Japanese language and Japanese studies courses for international students to suit various levels of language ability and study aims. Students can choose classes that meet their needs, from the three types of classes listed below.

• Integrated Japanese Language Classes (Elementary~Superior)

• Japanese Language and Japanese Studies Classes (Advanced)

• Intensive Japanese Language Course (Elementary~Intermediate)



Short-term Japanese Language & Culture Programs



Kobe University also offers short-term programs on Japanese language and culture for students studying Japanese overseas, including those studying in non-partner universities. These programs consist of Japanese classes and Area Studies classes designed to explore Kobe and neighboring areas.

# INTERNATIONAL

#### **Global Partnerships**

Kobe University has a long history and rich traditions borne from its location in the scenic cosmopolitan port city of Kobe. Kobe has served as a gateway to Japan since the opening of its port to the world in 1868, providing fertile ground for global networks to flourish. Consequently, Kobe University has produced many graduates who have respect for diverse values, a deep understanding of different cultures and outstanding communication skills. At present, Kobe University has active academic partnerships covering research and education with 370 institutions in 64 countries and regions across the globe. To further strengthen these valuable cooperative relationships, we have established 8 overseas offices centred on our 3 main strategic bases in Brussels (the capital of the European Union, Belgium), Beijing (China), and Seattle (USA) respectively.

Through international collaboration, Kobe University strives

to create new academic values and contribute towards the comprehensive and sustainable development of society. In addition to providing high quality education to our international students, we also offer career support through our overseas alumni and graduate networks; cultivating practical, global-minded individuals who can contribute to the international community.







#### KU-Alumni

In the build-up to Kobe University's 120th anniversary in 2022, we established 'KU-Alumni', an all-campus organization connecting all the people who make up the Kobe University 'Family': including graduates, current students, university faculty and staff (including former employees), as well as members of students' families. From now on, all of Kobe University's research, education, international exchanges and social contribution activities will be supported under the inclusive 'One Kobe Family' umbrella. By maintaining and strengthening our support for each alumni association, and promoting mutual exchange and study between our members in Japan and abroad, we aim to build a global community that transcends generations and borders.

Overseas Offices 8				
KU-Alumni Overseas Branches ••••••• 6				
Kobe University International Alumni Associations ••• 15				
International Students 1353				
(249 Undergraduates, 1104 Graduates)				
Partner Institutions 370				

# AT A GLANCE



Faculty and Staff

Teaching staff **1,658** Administrative Staff (including technical staff and nurses) **2,487** International faculty and staff **92** Student-to-Faculty Ratio **9.6 : 1** As of May 1, 2022

Faculties 10 Graduate Schools 15 Research Centers 14

Campus 4 main campuses and other locations 1,190,334 m<sup>2</sup>



Academic Calendar

**2** Semesters, **4** Quarters Spring (Apr.-Sep.), Fall (Oct.-Mar.) Research

Joint Research & **5,691** Commissioned Research

Papers stored on 9,619<sub>(2016-2020)</sub>

International Co-authored Papers on Web of Science **3,159 (33%)** (2016-2020)

Papers in the Top 10% on Web of Science **941** (2016-2020)

## Finance

Libraries

Total Asset **208 billion JPY** Total Expenditure **81 billion JPY** Total Revenue **84 billion JPY** External Fund **18 billion JPY** 

#### International

Partner Institutions **370** Overseas Offices **8** 





#### Rankings

QS World University Rankings 2023

► 13th in Japan 363th in the World

THE Japan University Rankings 2022

#### ► 14th

THE Impact Rankings 2022

Srd in Japan 101-200th in the World

# ABOUT KOBE

"Perched on a hillside sloping down to the sea, Kobe is one of Japan's most attractive and cosmopolitan cities." - Lonely Planet







Chinatown



**Night View** 



Japanese sake



Japan Rail

#### **Ikuta Shrine**

**Rokko Mountain** 





Kobe beef



Arima Onsen hot spring



all over the world.

energy industries.

#### A cultured international port city combining convenience with stunning nature

Kobe is the capital of Hyogo Prefecture, located in the western part of Japan's main island of Honshu. Sandwiched between the Rokko mountain range to the north and the Inland Sea to the south, the city is blessed with a mild climate averaging 17.1°C (62.8F) with four seasonal changes. It has a population of over 1.5 million including over 51,000 foreign residents from

Accessible by land, air and sea, Kobe is a hub for other domestic and international destinations: Kyoto, Himeji, Osaka and Nara are all within easy reach, and Tokyo is a short bullet train or plane ride away.

Kobe University's four campuses and accommodation are all easily accessed from the city center of Sannomiya by bus and train.

#### **Culture and Attractions**

Ever since Japan was opened to the world, Kobe has been a cosmopolitan port city where people, goods, and information from around the globe are in constant motion. The area is now home to a rich blend of Japanese tradition and international influences. In the city center you can find Ikuta Shrine, founded in the third century AD, with historical foreign residences and Japan's oldest mosque just a short walk away. On the other side of the mountain range lies Arima Onsen, one of Japan's oldest hot spring resorts. Kobe's history of cultural exchange has contributed to its diverse arts scene: it is the birthplace of Japanese jazz, and in 2008 Kobe joined UNESCO's Creative Cities Network as a City of Design. The city's cuisine also shows culinary influence from around the world. As well as the renowned Kobe beef and traditional Japanese sake breweries, Kobe is also well-known for its bustling Chinatown near the Port of Kobe, numerous bakeries and European-inspired sweets.

Located between the mountains and the sea, Kobe is an ideal location to explore Japan's natural surroundings. Hiking trails and cable cars from the city provide transport to the peaks of the Rokko Mountains, the best place to experience Kobe's famous night views. A few kilometers west from the Port of Kobe the beaches of Suma and Maiko are popular for watersports.

#### Industry and innovation

Traditionally home to heavy industries such as shipbuilding, iron and steel, Kobe and the surrounding area suffered heavy damage from the Great Hanshin-Awaji Earthquake in 1995. In the following years, Kobe's citizens rebuilt the city into a hub for business and industry with support from people throughout Japan and the world. Nowadays, Kobe provides an attractive environment for the development of key forward-thinking innovations with strategic focus on the IT, airspace, medical and new

At the Kobe Biomedical Innovation Cluster on Port Island, around 380 research institutes, corporations and universities are working together to develop state-of-the-art medical technology and research into integrated medical-related industries. The Cluster is home to the new supercomputer Fugaku, which was named the fastest in the world in 2020. From 2021, access to Fugaku has been granted to different industries and research institutes across a range of fields. Kobe University researchers also enjoy the privilege of access to this cutting-edge supercomputer.

Kobe has a high concentration of foreign-affiliated companies and international organizations: branches of the World Health Organization and the Japan International Cooperation Agency are both based in the center.



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