

SUMS
Integrated
Report

2023 –English version–



IR

**Shiga University of
Medical Science**

滋賀医科大学 統合報告書 2023

To Make SUMS and the Local Community Sustainable and Attractive

Contributing to local medicine for half a century,
and celebrating our 50th anniversary in 2024

President Shinji Uemoto

Shiga University of Medical Science (SUMS), founded in 1974, will celebrate its 50th anniversary in 2024. Under the concept of “One Prefecture, One Medical University,” SUMS was established in response to the passionate desire and support of the people of Shiga Prefecture. As the university “supported by the local community, contributing to the community, and playing an active part in the world,” we have aimed to develop medical and nursing sciences and promote human health. In addition to fostering outstanding medical professionals who provide holistic medical and nursing care in the prefecture, we have produced leaders in medicine and nursing science nationwide by promoting distinctive medical and nursing research and advanced medical care.

Being Sustainable and Attractive

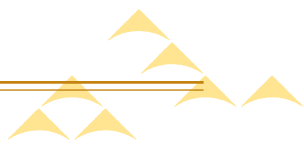
SUMS has reached its current milestone thanks to the dedicated efforts of our alumni and their association “Koikai,” together with the unwavering support of the local community and all those connected with SUMS. However, to envision a promising future built on this progress, organizational sustainability is imperative. This sustainability cultivates an appealing atmosphere, fostering a sense of reassurance for students, faculty, and staff in their studies and work. The success in providing such an environment enhances engagement, establishing a virtuous cycle of organizational sustainability and an appealing atmosphere.

We firmly believe that an attractive environment

embodies transparency, compliance, respect for diversity, and effective communication.

“ **A secure and enjoyable environment serves as a powerful motivator for all students, faculty, and staff.** ”





The targets of sustainability are (1) Human Resource Development (2) Finances, and (3) Facilities and Equipment

The most critical challenges lie in human resource development and recruitment

(1) Sustainability in human resource development extends to sustainability in local community healthcare, education, and research. The primary challenge is to promote recruitment of medical specialist trainees in medical fields and secure graduate students in nursing.

Recruiting many medical specialist trainees supports the development of healthcare in local communities, which can be followed with accepting outstanding graduate students to advance research with their young minds. Owing to fresh initiatives in medical education from the students' perspective and the endeavors of each medical department, the recruitment of medical specialist trainees under the New Training and Certifying System for Medical Specialists in Japan, initiated in the AY2018, has proceeded smoothly, with an average of 58 medical specialist trainees recruited annually.

“ **We promote the recruitment of medical specialist trainees and securing of graduate students in nursing, and support and encourage the advancement of research by young minds.** ”

Additionally, the goal of our nursing education is to cultivate leading nurses for the healthcare of Shiga Prefecture, making graduate education increasingly crucial. In recent years we have been successfully admitting more graduate students to the Master's Program in Nursing*.

At the same time, in light of the arrest incident involving medical students in the 2022, the university is committed to enhancing ethics education, compliance education for undergraduate students, and awareness and prevention of harassment, all of which were believed to be behind the incident. Concurrently, efforts to eradicate harassment and promote compliance among faculty and staff have been intensified.

*With the establishment of the Doctoral Program in Nursing (second semester) in the Graduate School of Medicine in April 2024, the existing Master's Program in Nursing will be renamed as the Doctoral Program in Nursing (first semester).

Young researchers are a significant asset for our University's development:

The Medical Innovation Research Center, established under the reorganization of the Advanced Medical Research Institute in the 2022, initially consisted of the Pioneering Research and International Joint Research Divisions. However, the Advanced Medical Research and Development Division was later established to promote the development of medical devices. The presence of young researchers and graduate students who actively engage in research and make contributions at the international level is a substantial asset for promoting the sustainability of human resource development and advancing the University's growth.

While finances are stable, we must to respond to changes in society:

(2) Financial sustainability necessitates effective management of the University Hospital and obtaining external funding. Management of the University Hospital has proceeded smoothly even during the period of the COVID-19 pandemic from 2020, and the acquisition of external funding, including government research grants, has also been successful. In 2022, six joint research departments were established, with an additional two set to begin in April 2023. However, ongoing global uncertainties pose a potential threat, particularly the continuous rise in prices, and the sustained high cost of utilities is a significant concern. While closely monitoring societal and economic changes and government responses, execution of the initial budget for FY2023 will prioritize austerity measures. However, despite these challenging circumstances, education and research remain the University's core activities, and we have commenced educational and research support programs as usual.

Similarly, for (3) sustainability of facilities and equipment, we will initiate measures starting from the essential minimum and expand them while monitoring the situation.

This year's report contains a lot of information about alumni, who are actively making significant contributions nationwide. Through this lens, we aim to spotlight SUMS' broader impact on society. We envision this report serving as an opportunity for our supporters to recognize and appreciate SUMS' s ongoing initiatives. Simultaneously, we encourage our students, faculty, and staff to reaffirm their pride in the University and find renewed motivation to stride confidently into the future.



Explore SUMS





Looking Back on History, Moving toward the Future

History & Milestones

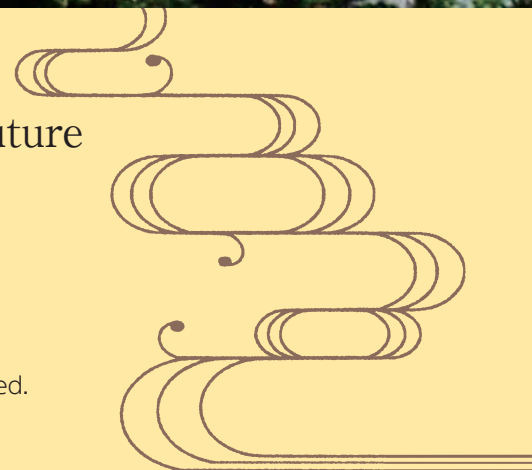
Photos from graduation memorabilia are included for alumni to reminisce.

The Fourth Medium-Term Goals and Plan

The progress of the Fourth Medium-Term Goals and Plan is graphically displayed.

Quick Facts of SUMS

Key figures and information are provided for a better understanding of the features and strengths of SUMS.



History & Milestones



1974 ■2/16 Planning Office for Establishing SUMS set up in Kyoto University
 ■10/1 Shiga University of Medical Science established in Moriyama City

1975 ■4/10 First Entrance Ceremony held
 ■5/2 Opening Ceremony held
 ■6/23 Shakunage-kai (philanthropist organization for body donation) established

1976 ■8/16 University Campus moved to its current location in Seta, Otsu City

1977 ■9/17 Memorial Monument for Body Donors erected

1978 ■6/28 Collaborative Research Facilities established

1979 ■12/12 Anatomy Center established

1981 ■3/25 First Graduation Ceremony for the School of Medicine held
 ■4/14 Graduate School established
 ■5/9 First Entrance Ceremony for the Graduate School held

1985 ■3/23 First Doctorate degrees in Medical Science awarded

1989 ■6/28 Molecular Neurobiology Research Center established

1990 ■6/8 Health Administration Center established

1994 ■4/1 School of Nursing established
 ■4/25 First Entrance Ceremony for the School of Nursing held

1997 ■4/1 Multimedia Center established

1998 ■3/25 First Graduation Ceremony for the School of Nursing held
 ■4/1 Master's Program in Nursing established
 ■4/24 Entrance Ceremony for the Nursing Course at the Graduate School of Medicine held

1999 ■4/1 Molecular Neuroscience Research Center established

2000 ■3/27 First Master's degree in Nursing awarded by the Graduate School of Medicine

2002 ■4/1 Research Center for Animal Life Science established
 ■5/22 Biomedical MR Science Center, Lifestyle-Related Diseases Prevention Center established
 ■11/6 Center of Educational Research on Medicine and Welfare established

2004 ■4/1 Education and Research Center for Promotion of the Medical Professions established
 With the enactment of the National University Corporation Law, national universities were incorporated, which also made SUMS a national university corporation.
 ■6/3 Skills Laboratory established

2005 ■4/1 Central Research Laboratory established
 Midwifery Program established

2006 ■6/29 Biomedical Innovation Center established

2007 ■2/1 SUMS Child Care Center established

2008 ■9/25 Research Collaboration and Promotion Center established

2009 ■4/1 Research Promotion Organization for Intractable Neurological Disease established

2011 ■7/1 Office for Gender Equality established

2013 ■4/1 Center for Epidemiologic Research in Asia established

2014 ■4/1 Community Healthcare Education and Research Center established
 ■9/4 Skills Lab Building completed

2015 ■11/26 Research Ethics Office established

1st Medium-Term Goals and Plan 2004-2009

1974

1978 ■4/1 University Hospital established with 15 departments
 ■10/1 The University Hospital opened with 320 beds

1980 ■1/9 180 beds added, for a total of 440 beds
 ■5/21 160 beds added, for a total of 600 beds

1990 ■6/8 Division of Emergency and Critical Care Medicine established

1993 ■4/1 Intensive Care Unit (ICU) established

1995 ■4/1 Hospital classroom (belongs to Seta Higashi Elementary School) opened

1996 ■4/1 Blood Service Center established

1997 ■4/1 Clinical Section of General Medicine established

1999 ■4/1 Clinical Trials Management Office established

2001 ■4/1 Section of Medical Informatics and Biomedical Engineering established

2002 ■4/1 Section of Endoscopy established
 Clinical Departments reorganized: Internal Medicine I, II and III into Cardiovascular Medicine, Respiratory Medicine, Gastroenterology, Hematology, Endocrinology and Metabolism, Nephrology, and Neurology; Surgery I and II into Gastrointestinal Surgery, Breast/General Surgery, Cardiovascular Surgery, and Respiratory Surgery
 ■4/17 Medical Safety Section, Clinical Resident Training Center, and Community Medical Collaboration Section established

SUMS will celebrate its 50th anniversary in 2024



2016 ■4/1 Molecular Neuroscience Research Center reorganized

2017 ■4/1 Management Office of Medical Research established
■5/1 Research Administration Office reorganized

2018 ■4/1 Information Technology and Management Center established
Department of Research and Development for Innovative Medical Devices and Systems established
■6/14 Education Promotion Office established

2019 ■4/1 IR Office established
Admissions Center established
Center for Advanced Medicine against Cancer established
Comprehensive Strategy Council established
■7/1 Education Center for Medicine and Nursing established

2020 ■4/1 International Center established

2021 ■4/1 NCD Epidemiology Research Center established

2022 ■4/1 Advanced Medical Research Organization established
Medical Innovation Research Center established
Molecular Engineering Institute, Functional Materials Laboratory established
Molecular Engineering Institute, Molecular Design of New Materials Laboratory established
Department of Regenerative Medicine Development established
Department of Biocommunication Development established
■10/1 Department of Therapeutics for Protein Misfolding Diseases established
Molecular Engineering Institute, Sustainable Materials Development Laboratory established

2023 ■4/1 Department of Pharmacotherapeutics established
Department of Sports and Musculoskeletal Medicine established
Department of Advanced Medical Research and Development established

2024 ■4/1 Doctoral course established in the Graduate School of Nursing
■10/1 50th Anniversary

2024

4th Medium-Term Goals and Plan 2022-2027

3rd Medium-Term Goals and Plan 2016-2021

2nd Medium-Term Goals and Plan 2010-2015

2003 ■4/1 Rehabilitation Section and Section of Diagnostic Pathology established

2004 ■4/1 Central Clinical Facilities and Special Clinical Facilities reorganized into Central Clinical Sections, Medical Safety Section, Community Medical Collaboration Section, Medical Training Division, Clinical Resident Training Center, and Clinical Trials Management Office
Section of Emergency and ICU established
■8/1 Section of Clinical Engineering established

2005 ■4/1 Section of Medical Oncology established
■8/1 Section of Clinical Nutrition established

2007 ■4/1 Cancer Center established
■8/31 Ward "D" completed

2008 ■6/1 Division of Infection Control and Prevention established
■7/1 Patient Support Center established

2009 ■4/1 Clinical Education Center for Physicians established
■10/20 Medical Oncology Department established
■12/1 Clinical Education Center for Nurses established

2010 ■3/1 Midwifery Clinic established
■7/1 Six beds added, for a total of 614 beds

2011 ■3/12 Disaster Medical Assistance Team (DMAT) dispatched for the Great East Japan Earthquake disaster assistance
■10/1 Center for Clinical Research and Advanced Medicine established

2013 ■3/25 Surgical Robot "da Vinci Si" introduced

2014 ■3/31 Heliport completed
■4/1 Hospital classroom (belongs to Seta Junior High School) established

2016 ■2/1 Advanced Nurse Training Promotion Office established
■4/1 Perinatal Center established
■10/1 Plastic and Reconstructive Surgery Department established

2017 ■4/1 Advanced Nurse Training Center established

2021 ■9/1 Stroke Care Unit (SCU) established
■10/29 Triage Center established

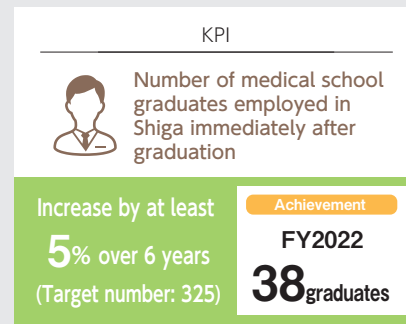
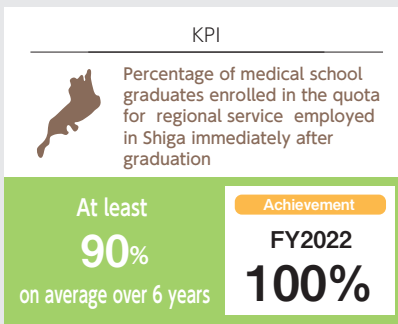
The Fourth Medium-Term Goals and Plan -with Key Performance Indicators (KPI)-

To Be a Sustainable and Attractive University

With the start of the Fourth Medium-Term Goals and Plan, it has become mandatory to set performance indicators to show the level of achievement for each medium-term plan. SUMS has set 57 performance indicators for outputs and outcomes. These indicators will be shown alongside the FY2022 results.

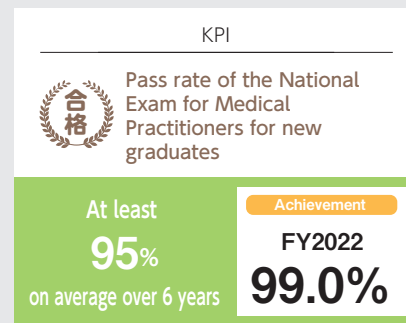
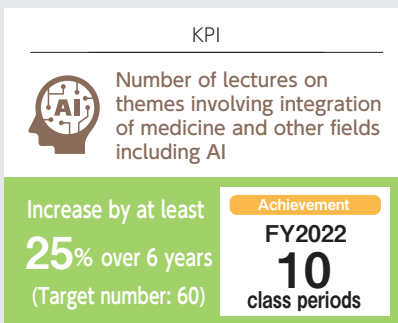
Sustainability in Community Healthcare

- Fostering outstanding physicians who will settle in Shiga Prefecture
- Training nurses who will become future leaders (Visiting nurses, Graduates of Advanced Nurse Training, Nurses specializing in infectious diseases, etc.)



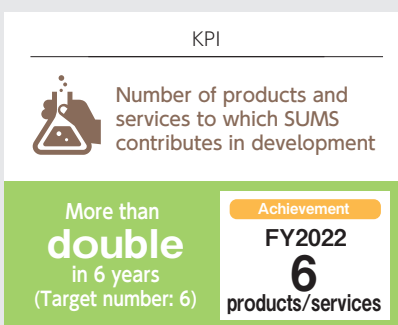
Sustainability in Education

- Cultivating human resources capable of AI development and ICT utilization
- Establishing an education system for the future (STEAM education, online education, simulation education, etc.)



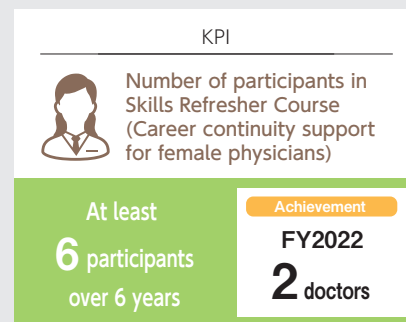
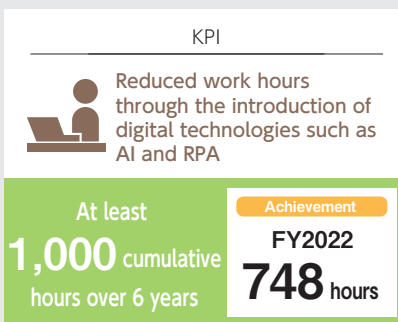
Sustainability in Research

- Deepening distinctive research
- Developing young human resources who will become future leaders
- Increasing external funds through promotion of industry-academia collaborative research



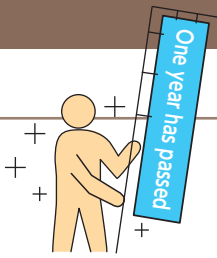
Sustainability in Running the Operation

- Improving work efficiency, including the use of digital technologies
- Expanding Gender Equality Promotion Plan to the local community
- Building a functionally enhanced ward of the University Hospital




2022 ▶ 2027

Sustainable & Attractive



2022 ▶ 2023 ▶ 2024 ▶ 2025 ▶ 2026 ▶ 2027

KPI

 Number of medical specialist trainees at the University Hospital (SUMS alumni)

At least **35** trainees on average over 6 years

Achievement
FY2022
43 trainees


KPI

 Number of visiting nurses in Shiga

At least **2.8** nurses on average over 6 years

Achievement
FY2022
6 nurses


KPI

 Number of nurses with advanced training assigned to the University Hospital

At least **50** nurses by FY2027

Achievement
FY2022
34 nurses


KPI

 Pass rate of the National Nursing Exam for new graduates

At least **98%** on average over 6 years

Achievement
FY2022
98.3%


KPI

 Pass rate of the National Public Health Nursing Exam for new graduates

At least **98%** on average over 6 years

Achievement
FY2022
100%


KPI

 Pass rate of the National Midwifery Exam for new graduates

At least **98%** on average over 6 years

Achievement
FY2022
100%


KPI

 Intellectual property-related income

More than **double** in 6 years (Target: ¥15 million)

Achievement
FY2022 about
¥7.7 million


KPI

 Income from external funds through collaborative research and open laboratories

Increase by at least **5%** over 6 years (Target: ¥600 million)

Achievement
FY2022 about
¥300 million

KPI


 Number of double-degree program or equivalent programs

At least **1** in 6 years

We plan to establish an international dual or joint doctoral program.

A joint degree is a single academic degree jointly conferred on students who have completed a single joint educational program established by universities that jointly set up the said program.


KPI

 Number of patients transported by ambulance and helicopter

Increase by at least **25%** by FY2027 (Target: 3,750)

Achievement
FY2022
3,535 patients

KPI

 Number of gastrointestinal endoscopic examinations and treatments

Increase by at least **25%** by FY2027 (Target: 9,000)

Achievement
FY2022
6,823 tests/treatments



The functionally enhanced ward of the University Hospital will be completed around January 2026.

Image for the new building

Quick Facts of SUMS



Founded

in **1974**

The 50th anniversary will be celebrated in 2024

50th Anniversary Website

From the Lake Country to the World

Half a century of services to health care and beyond

As we celebrate our 49th anniversary this year and embark on special projects for the forthcoming 50th anniversary, we take a moment to reflect on the University's illustrious history and express our deep gratitude to all contributors. In addition to this report, we invite you to explore our special commemorative website.

Faculty and Staff

(May 2023)

1,418

(Percentage of females)

All Faculty and Staff members **62.0%** Faculty members **26.2%**

In the field of medical education, the percentage of female faculty members is 24.9%, as per the MEXT School Basic Survey 2022. We are proud that our university exceeds this national average. Among the four national medical universities, we have the highest percentage of female faculty members, a testament to our concerted efforts to foster an inclusive environment where both men and women actively participate.

Number of Students

(May 2023)

♂ Male
♀ Female

Undergraduate

926

School of Medicine	School of Nursing
686	240
♂ 58.7% 41.3% ♀	♂ 4.2% 95.8% ♀
403 283	10 230

Transferred Students 11.8%
Regional level for 1-year students 11.6%

Graduate

206

Doctoral Program	Master's Program
158	48
♂ 62.7% 37.3% ♀	♂ 20.8% 79.2% ♀
99 59	10 38

International Students 16.0%
Adult Graduate Students 68.9%

Total 1,132

Male-to-Female Ratio approx. **7 : 8**

522

♂

610

♀

Student-to-Faculty Ratio

(May 2023)

Faculty Undergraduate students

1 : 2.4

National University Average ST Ratio 1:9.4

SUMS has more faculty members than the national average for the number of students, which allows us to provide generous support in teaching and research. (General Survey of Schools by MEXT, 2022)

National Examination Pass Rate

(FY2022)

<p>Doctors</p> <h1>95.6%</h1> <p>(National average 91.6%)</p>	<p>Nurses</p> <h1>98.3%</h1> <p>(National average 90.8%)</p>
<p>Public health nurses</p> <h1>100%</h1> <p>(National average 93.7%)</p>	<p>Midwives</p> <h1>100%</h1> <p>(National average 95.6%)</p>

In 2022, our National Examination pass rates surpassed the national average, a testament to the dedicated efforts of our education director and team, the compassionate support provided to students, and the hard work of the students themselves. Our commitment to guiding students toward successful graduation as medical professionals remains unwavering.

Career Paths of Alumni in Shiga

(FY2022)

School of Medicine

36.5%

School of Nursing

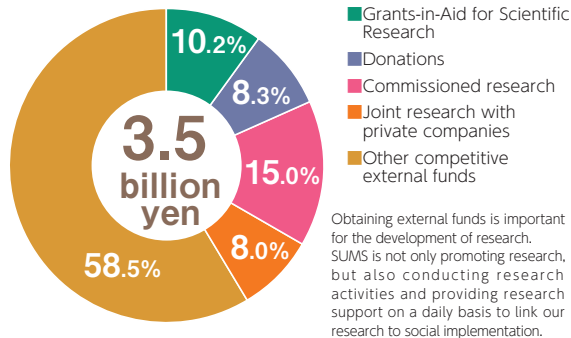
48.3%

While the percentage of medical graduates employed within the prefecture in 2022 was lower than in previous years, we aspire to encourage graduates to remain in Shiga. To support this, we are reaching out to those who left Shiga after graduation to inform them that there are opportunities to return and contribute with their accumulated experience to realize our University's philosophy of "contributing to the community" in later years.

See website of IR office.



External Funds Received (FY2022)



Obtaining external funds is important for the development of research. SUMS is not only promoting research, but also conducting research activities and providing research support on a daily basis to link our research to social implementation.

The grant for "Improving facilities for industry-academia cooperation and joint research through collaboration of regional core and distinctive research universities" was adopted.

Adoption Rate of Grants-in-Aid for Scientific Research (KAKENHI) (FY2022)

29.8% **28.6%** National average

We support young researchers



SUMS has a high adoption rate for "Grant-in-Aid for Early-Career Scientists (36.1%)" and "Grant-in-Aid for Research Activity Start-ups (40.0%)". We encourage young researchers to apply for the grants in the spirit of "No Application, No Adoption".

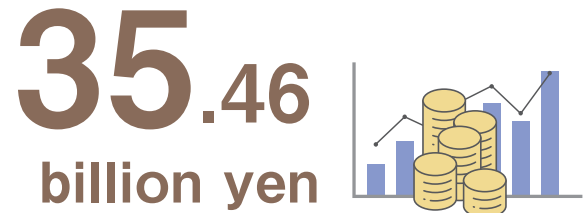
Patent Licensing Rate

University Fact Book 2023 (Japan Business Federation)



Although the number of patents held by SUMS is small compared to that of comprehensive universities, the licensing rate is high, and we are returning the results of our research to society.

Ordinary Revenues (FY2022)



University Rankings

Times Higher Education

THE World University Rankings: Japan 2023



In the field of "Educational Resources" **Ranked 8th/271 universities**

In our educational and research environment, each student can receive warm and substantial support

Educational Resources represents how well-rounded education is, based on data such as funds per student and faculty ratios. Our overall ranking has also improved from the previous year, moving up from 96th to 89th place.

THE Impact Ranking 2023



SDG3 "Good Health and Well-being"

Global ranking: **16th/1,218 institutions**

Domestic ranking: **2nd /70 universities**

Recognized for its remarkable efforts to promote health and well-being in local communities to achieve the SDGs

This ranking evaluates university social contributions and research activities using the SDG framework.



Research Organization that Crosses Disciplinary Boundaries

Aiming for further development

Fourth Medium-Term Plan

Contribute to promoting local industries and solving of health and medical problems

BBDU
(BioMedical Business Development Unit)

In order to link research findings to social implementation, we will strengthen collaboration among industry, academia, government and finance, partnering with local companies, to contribute to regional development through creating medical innovations.



Collaboration of industry, academia, government and finance • Social implementation of research findings

Prof. Isobe

Forwarding social implementation and practical application

Central Research Laboratory

The Laboratory was established in 2005 by integrating the former Central Research Laboratory and the Radioisotope Research Center. Under the direction of Professor Yasushi Ito, with seven staff members including full-time staff, we manage and support the use of various types of shared equipment. The Laboratory also conducts intensive lectures, on-campus seminars, user workshops, and user meetings as needed to support the University's education and research.



Managing and supporting the use of shared equipment

From left: Prof. Ito (Head), Assoc. Prof. Asahina

Promoting the development of young professionals who will become future leaders

Deepening distinctive research that has power through international dissemination

Medical Innovation Research Center

The Center addresses medical innovation by promoting challenging and integrative research unbound by existing frameworks, with diverse human resources unlimited by age, gender, or nationality.



This division was established in April 2023, and aims to develop cutting-edge medical devices by identifying unmet clinical needs and implementing core technologies created through medical-engineering collaborative research under industry-academia cooperation. We welcomed Assoc. Prof. Atsushi Yamada, who was involved in the development and commercialization of an advanced movable catheter for ERCP.



Advanced Medical Research and Development Division

Assoc. Prof. Yamada

We aim to promote international collaborative research on dementia and lifestyle-related diseases, which are on the rise in Asia, by inviting outstanding foreign researchers. Prof. Wan Zurinah Wan Ngah of the National University of Malaysia (UKM) was appointed as a special contract professor to establish a double or joint degree program with our partner university, UKM.



International Joint Research Division

Prof. Wan Zurinah Wan Ngah



In 2022, the Advanced Medical Research Organization was established to integrate our research centers so that they cross the boundaries of each center, expecting that by applying the cynomolgus monkey disease model, the distinctive fruit of our University's research, to all research projects. We will promote unprecedented leading academic research in this field.

*Our animal experiments are conducted under careful consideration for animal bioethics with an animal experiment accreditation system.

Advanced Medical Research Organization

Research Center for Animal Life Science

The Center has artificial breeding technology for cynomolgus monkeys, a rarity in the world, and as a satellite facility of the World Premier International Research Center Initiative (WPI), it produces disease model monkeys using advanced genetic modification technology.

It is also capable of conducting high-level infection experiments and developing vaccines and therapeutics. We actively support primate research by promoting joint research with domestic and international research institutions.



Medical studies using monkeys

From left: Prof. Ema, Asst. Prof. Okamura

Molecular Neuroscience Research Center

We aim to be a pioneer in paving the way for original ideas by advancing the analysis of the molecular pathogenesis of intractable neurological diseases such as Alzheimer's disease, amyotrophic lateral sclerosis, and frontotemporal lobar degeneration. We have introduced state-of-the-art methodologies in genetic engineering, molecular and cellular biological approaches, and morphological approaches, and have established a research system that integrates basic and clinical research, from the creation of animal models, biomarker development, and drug discovery to clinical trials.



Dementia and neurodegenerative diseases

From left: Prof. Nishimura, Prof. Urushitani (Head), Prof. Ishigaki

NCD Epidemiology Research Center

As one of Japan's leading epidemiological research centers, we conduct research to determine the causes of lifestyle-related diseases and dementia, and to establish preventive methods through a variety of epidemiological studies on non-communicable diseases (NCDs). We are advancing projects such as MHLW'S NIPPONDATA, the Shiga Epidemiology Study of Subclinical Atherosclerosis (SESSA), and the International Study of Macro-/Micronutrients and Blood Pressure (INTERMAP), making significant contributions to national policymaking and the progress of medical science worldwide.



Lifestyle-related diseases and epidemiological studies

From left: Assoc. Prof. Kadota, Prof. Miura (Head), Assoc. Prof. Harada

Center for Advanced Medicine against Cancer

The Center is engaged in research to elucidate the mechanisms of cancer development and progression through cutting-edge molecular analysis. We use various animal models and human biological samples in the development of innovative cancer diagnosis and treatment methods.

We also promote the fusion of basic and clinical medicine, stimulate the development of seed and bridge research originating from academia, and train medical professionals to lead advanced cancer treatment research and its practice at the University Hospital.



Advanced cancer research

From left: Prof. Daigo (Head), Assoc. Prof. Teramoto

Accelerating priority research

To accelerate priority research, we provide an environment where young researchers can work independently and freely to conduct pioneering research using next-generation research methods such as AI technology.

Assoc. Prof. Hashimoto
Appointed as a tenure-track faculty member



We will further develop our existing research using Alzheimer's disease models to elucidate the pathogenic mechanisms and discover new drugs. We will also proactively adopt new research technologies to make them more effective, and by sharing our knowledge and ideas, we expect to grow substantially.

Pioneering Research Division



What is the tenure-track system?

The tenure-track system provides a career path for professors working on fixed-term special contracts. This system enables young researchers to carry out research and educational activities in an independent environment and, after a review, obtain a tenured position.



Support System for Young Researchers Spreading their Wings

Motivations for the future

01

My Journey to Becoming a Robotic Surgeon

From an early age, I was an unusual child who loved making plastic model robots such as Mobile Suit Gundam and practicing kendo, which I started at the age of 7 when I visited a dojo at a police station. In my high school and college days, I was a member of kendo clubs and enjoyed student life with classmates, seniors, and juniors. At SUMS, I joined the First Department of Surgery with a strong belief that surgery was my only choice. There, I learned the basics of surgery from Prof. Toru Tani. In my third year as an intern, I joined the Department of Surgery at Keiyukai Sapporo Hospital to study esophago-gastric surgery, and from this experience, decided to specialize in upper gastrointestinal surgery. I then studied drug delivery at the Graduate School of Medicine at the University of Tokyo, and then trained in laparoscopic surgery at Toranomon Hospital. After six years in Tokyo, I returned to SUMS in 2013.

Until now, I have mainly been involved in gastric surgery. Since 2017, I have introduced robotic gastrectomy to become a surgeon who can operate a robot, which has been my dream since childhood. In robotic surgery, a surgeon uses both hands and feet to operate a da Vinci Surgical Robot®, which is many times larger than a human, from a console located a short distance away. The surgeon can

perform delicate surgery while viewing magnified, high-definition 3D endoscopic images. To date, I have safely performed more than 120 robotic gastrectomies. As the development of surgical robots continues to be remarkable and all kinds of devices and machines are being developed, I will continue to pursue new and minimally invasive surgical approaches.



Sachiko Kaida

Associate Professor
Gastrointestinal Surgery,
Shiga University of
Medical Science

(Completed PhD in 2011)



02

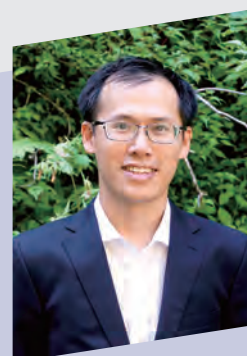
Now Spreading my Wings from Under the Warmth of SUMS!

From 2016 to March 2023, I was a graduate student and special contract assistant professor at SUMS. In April 2023, I started working at Kindai University's Faculty of Medicine as an assistant professor, studying viral infections of the central nervous system.

I have been in Japan for more than six and a half years, during which time I have grown as an expert in the warm environment of SUMS. Thanks to the monkeys at the Research Center for Animal Life Science, I was able to learn about pneumonia caused by highly pathogenic influenza viruses and novel coronaviruses, and to find a research topic on NAD metabolism defects caused by viral infection. Now, I have fulfilled my childhood dream of studying abroad, and my current dream is to understand NAD metabolism and develop treatments for infectious diseases associated with it.

At SUMS, I began to study the expression and role

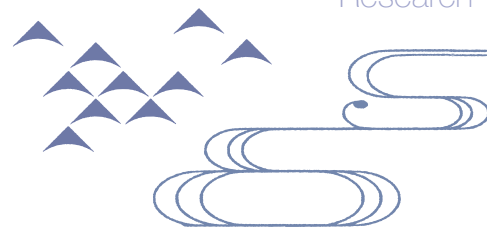
of CD38, an NAD-degrading enzyme, using tissues and endothelial cell lines from monkeys infected with a novel coronavirus. The more I study it, the more I understand the complexity of the "NAD world," while at the same time realizing how little I know. Looking back, I am grateful for the generous guidance and support of everyone around me that has allowed me to study this far. I will continue my research, appreciating the warmth of SUMS and making it the source of my power to move forward.



Nguyen, Thanh Cong

Assistant Professor
Faculty of Medicine,
Kindai University

(Completed PhD in 2021)



03

As an Entrepreneur of a Venture Established at SUMS

In my second year of medical school, my grandmother was hospitalized after a stroke. Even after she was discharged from the hospital, not only she but also her family members were afraid it would happen again. Three years later in my fifth year, when knowing a Pitch Contest would be held on campus, I formed a team of three students and developed an "early stroke-detection app." After winning several business competitions, I applied for a patent together with the Department of Neurosurgery to promote development and was selected for the Japan Science and Technology Agency's "Program for Start-up Incubation from Core Research." After graduation, while completing my initial clinical training, I conducted a one-and-a-half year collaborative research project with Panasonic Corporation, which resulted in filing three patent applications. After that, I was not sure whether to continue the project on my own or not, but in the end I founded Medpreneur Inc. in the summer of 2022 as a venture company originating from SUMS after thinking back to what took me to my starting point: solving the problem of "early detection and early

treatment of stroke."

In 2023, Medpreneur was selected for a joint research grant from Kansai Mirai Bank, and we are continuing development in collaboration with SUMS's University Hospital.

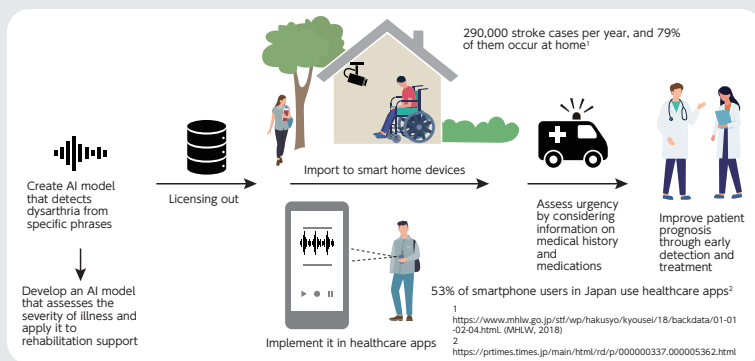
When I applied for this medical school, I wanted to become a medical technical official at the Ministry of Health, Labor and Welfare, so I never imagined I would become an entrepreneur.

However, my life changed drastically when I visited Silicon Valley during an overseas training program on the iKODE program, SUMS's entrepreneurship development program adopted by MEXT's EDGE program, in my third year. I would like to move forward step by step to my dream of one day playing an active role on the stage of Silicon Valley.



Shogo Takahata

Assistant Professor
Medical Innovation
Research Center, Shiga
University of Medical Science
(Graduated in 2020)



President's Discretionary Research Funds

The University's Supporting System



To support young scientists, SUMS provides grants for their research based on original ideas at the discretion of the President.

Kakenhi (Grants-in-Aid for Scientific Research) application support grants

If young researchers are not selected for Kakenhi, in order to succeed in the next year, SUMS provides grants for the study theme.

Grants for exploratory research by young researchers

SUMS provides research funds for creative exploratory research by young researchers through internal recruitment and selection.

Grants for specially promoted projects

After internal recruitment, SUMS selects and funds creative and strategic projects that integrate epidemiology, basic medicine, and clinical medicine.

Have both a Supple Mind and Critical Spirit

:When I tackled the Mystery of Hepatitis B

President Shinji Uemoto



At graduation and degree commencement ceremonies, I deliver a message to our graduates and alumni: "Have a supple mind and a critical spirit at the same time." What I mean by this is, that it is important to have a supple mind to absorb new things, but be aware that what you absorb may not always be correct. In essence, this means to understand the facts as they are. I would like to share my experience that led me to this belief.

More than twenty years ago, the medical community reported a relatively large number of medical accidents related to hepatitis B. Under these circumstances, I had an experience where a child for whom I performed a liver transplant contracted hepatitis B two years after the operation and died. Preoperative testing had confirmed that both patient and donor were negative for hepatitis B antigens, and I reconfirmed the blood transfusions used and the surgeons, all of which were antigen negative. There was concern that this could be classified as a medical accident. However, there had been a similar case at another institution a few years earlier, so I decided to investigate all the liver transplant cases I had been involved with. I am still very glad I made this decision.

Surprisingly, in 16 out of 171 cases, patients tested positive for hepatitis B antigens after surgery (so-called carriers), and in all 16 cases, the donors were hepatitis B antibody (HBc-antibody) positive. Furthermore, when PCR testing was performed on surgically removed liver tissue from donors, hepatitis B virus DNA was detected in all cases. Until then, the conventional medical wisdom

had been that "the virus is completely cleared and antibody-positive after hepatitis B" (Fig. 1). Yet the fact turned out to be "antibody-positive after hepatitis B, but the virus persistently infects the liver," thereby overturning the common wisdom of the time. This fact was not easily accepted by the academic community, but later won acceptance when gastroenterologists reported the facts that hepatitis B also develops during cancer treatment and immunosuppressive treatment of HBc antibody-positive patients.

Today, the guidelines for preventing hepatitis B development during cancer treatment and immunosuppressive treatment (Fig. 2) recognize anti-HBc positive individuals as high-risk, and by implementing preventive measures, cases of hepatitis B development have almost disappeared in medical practice.

When experience and experimental results differ from conventional wisdom, it is important to steadily accumulate facts and take a sincere attitude in pursuit of the truth.

Figure 1: Adult HBV infection clinical course

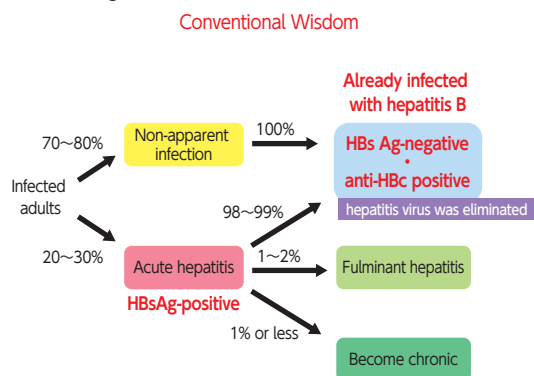
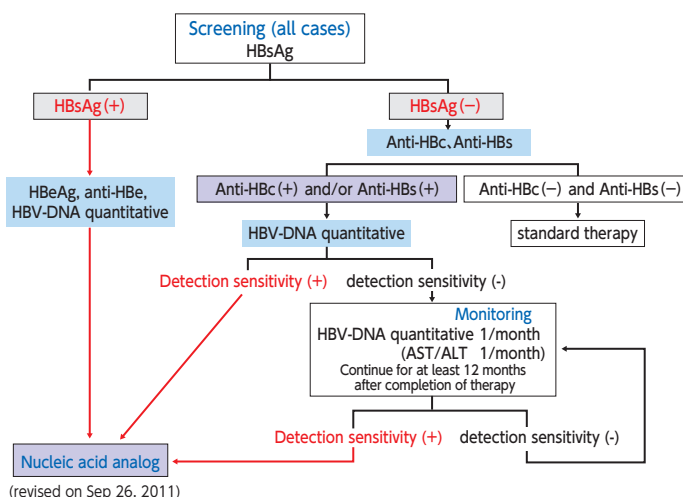


Figure 2: Guidelines for preventing hepatitis B caused by immunosuppression and chemotherapy (Revised ver.)



International Exchange Data

Number of Partner Institutions

26

As of May 1st, 2023

Capacity of International House

45

As of May 1st, 2023

Number of Foreign Students

33 from 8 countries

As of May 1st, 2023

Number of Students Overseas Dispatch

46

Average of 2016-2019

Number of Faculty Overseas Dispatch

250

Average of 2016-2019

* The numbers of students and faculty dispatched overseas are based on the results prior to the outbreak of the novel coronavirus.

Location of SUMS



ACCREDITED
2018.9-2025.8

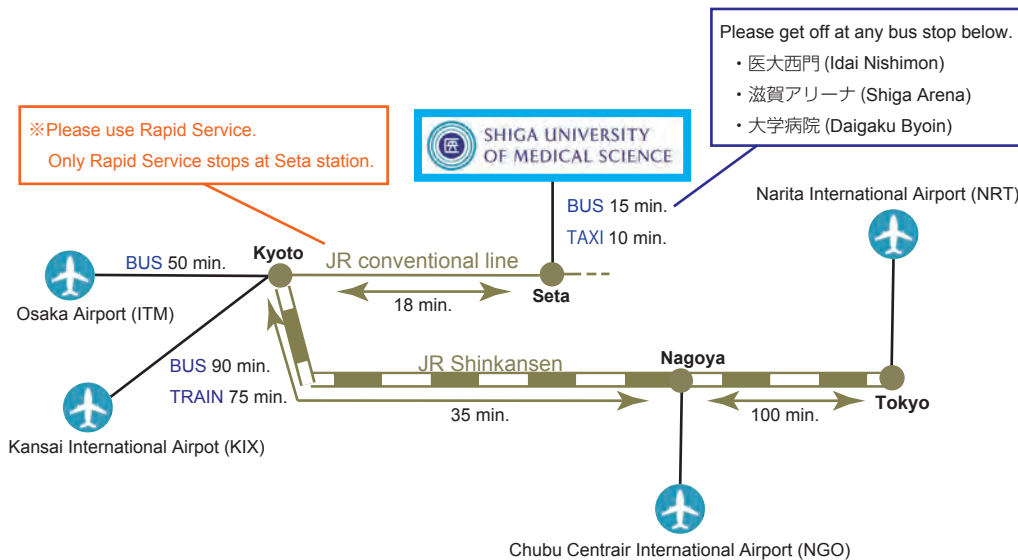
The School of Medicine underwent an evaluation by the Japan Accreditation Council for Medical Education (JACME) in 2017 to obtain accreditation in medical education, and was certified as satisfying global standards.



UNIVERSITY
ACCREDITED
March 2023

The University passed the "Institutional Certified Evaluation and Accreditation of Universities" in 2022 stipulated in Article 109, Paragraph 2 of the School Education Act, and was certified as satisfying the university evaluation criteria.

Access to our campus



※From Osaka/Kyoto, please use "the JR Biwako Line for Kusatsu, Yasu, Maibara and Nagahama" at Kyoto Station.
(Do Not use "the JR Kosei Line for Omi-maiko, Omi-imazu and Tsuruga.")



Accreditation for Hospital Functions
by the Japan Council for Quality Health Care

The University Hospital received the initial certificate of accreditation for its hospital functions from the Japan Council for Quality Health Care in February 2004, and it has been renewed every five years.

International Center
- Shiga University of Medical Science

1st floor of General Education and Research Building
Shiga University of Medical Science
520-2192 Seta Tsukinowa-cho, Otsu, Shiga, JAPAN

Email: hqkouryu@belle.shiga-med.ac.jp
Hours: Monday to Friday, 8:30am to 12:00pm/13:00pm to 17:00pm
(Excluding national holidays and year-end/New Year holidays)



Integrated Report Website



Please give us your feedback



国立大学法人

滋賀医科大学

SHIGA UNIVERSITY OF MEDICAL SCIENCE

