



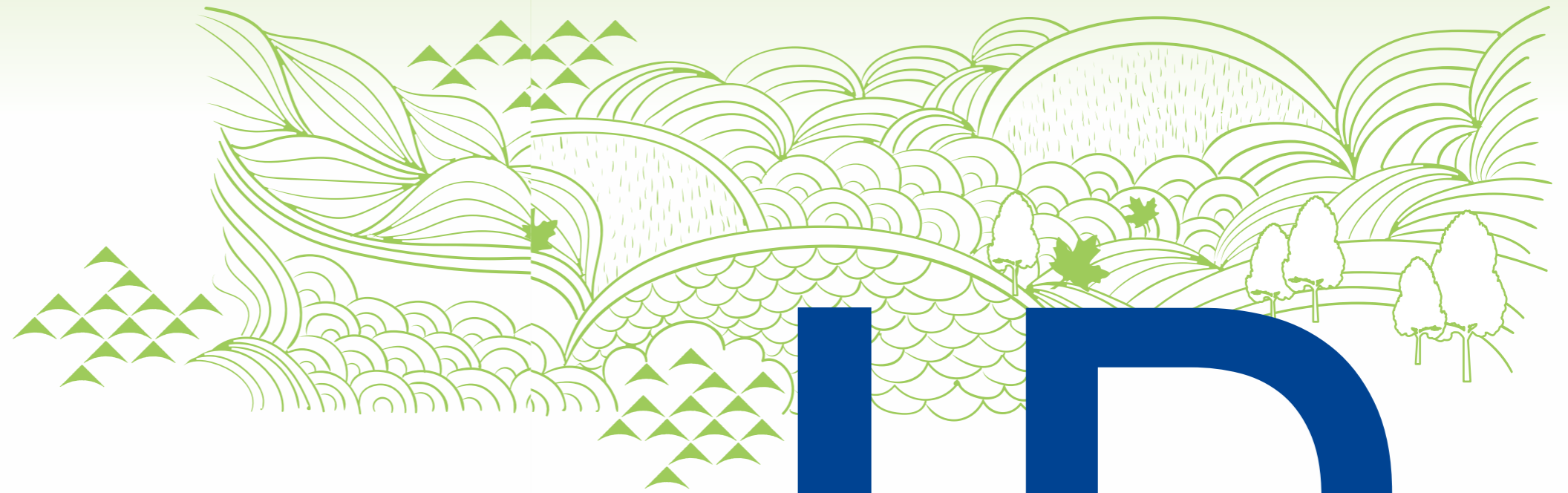
Integrated Report Website



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SUMS
Integrated
Report

2022 –English version–



IR

Shiga University of
Medical Science

滋賀医科大学 統合報告書 2022



To Make SUMS and the Local Community Sustainable and Attractive

— 48 years after the University's founding, we embarked on the 4th Medium-Term Goals and Plans —

President Shinji Uemoto

Shiga University of Medical Science (SUMS), which was founded in 1974, will celebrate its 50th anniversary in 2024, two years from now. 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 which is "supported by the local community, contributes to the community, and plays an active part in the world," we have aimed to contribute to the development of medical and nursing sciences and the promotion of 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.

Striving for a Virtuous Circle of Sustainable Organization and Attractive Environment

SUMS has achieved its current level thanks to the efforts of our alumni and alumnae and their association "Koikai," as well as the understanding and support of the local community and all people surrounding SUMS. However, in order to envision a bright future based on this development, it is vital for us, as an organization, to be sustainable. The sustainability creates an attractive environment in which students, faculty and staff can study and work with a sense of reassurance, and the success in providing such environment makes everyone more engaged, which generates a virtuous cycle of sustainable organization and attractive environment.

With this in mind, we have been working toward the key concept "To Make SUMS and the Local Community Sustainable and Attractive" since FY2021, with the aim of developing the university and making greater contributions to health care in Shiga. This key concept also serves as the basic idea of the 4th Medium-Term Goals and Plans, starting from FY2022.

The Most Important Task: Recruiting Medical Specialist Trainees and Graduate Students in Nursing

For organization sustainability, we target three areas: (1) human resource development; (2) finances; and (3) facilities and equipment. The first target is further linked to sustainability in community medicine, education, and research, but the most important task is promoting recruitment of medical specialist trainees* and graduate students in nursing. Recruiting a large number of medical specialist trainees will support the development of community medicine including the University Hospital, and eventually those trainees will become young, open-minded, and talented graduate students at SUMS, which will allow us to enhance research at this school. Due to the promotion of medical education from the students' perspective and the efforts of each medical department, recruitment activities for medical specialist trainees under the new specialist system that started in FY2018 is progressing favorably. This year, we have welcomed 64 medical specialist trainees, and are looking forward to a bright future.

In addition, the goal of nursing education is to develop nurses who will play leading roles in health care in Shiga. Therefore, graduate school education is becoming increasingly important. Fortunately, we accepted a sufficient number of students in the Graduate School of Medicine's Master's Program for Nursing this year.

Fostering and Supporting Young Researchers is Vital for the Future Development of SUMS

Furthermore, SUMS has reorganized its distinctive research centers to establish the Advanced Medical Research Organization. Within this organization, we have established the Medical Innovation Research Center, which consists of the Pioneering Research Division and the International Joint Research Division. We plan to welcome young researchers to this center to undertake novel research. Fostering and supporting young researchers, including graduate students, is vital for the future development of our university. The presence of graduate students and young researchers who are committed to research and active internationally would be great role models for students and young medical doctors and nurses. We hope that this commitment and promotion will attract young doctors and nurses to form a positive human resource cycle.

Management of the University Hospital and Acquisition of External Funds is Critical for Fiscal Sustainability

For the second target, finances, proper management of the University Hospital and acquisition of external funds is critical. Despite the COVID-19 pandemic, the management of the University Hospital is in good shape and the staff never faltered in providing quality medical care. In addition, the acquisition of external funds such as Grants-in-Aid for Scientific Research is also on track, and several joint research laboratories were established this year. Acquiring external funds not only stimulates research, but also contributes significantly to the overall finances of the University with overhead expenses. In addition to the financial sustainability, obtaining government grants through proactive application efforts will enable us to renovate aging facilities and update equipment, thereby improving the sustainability of facilities and equipment (the third target).

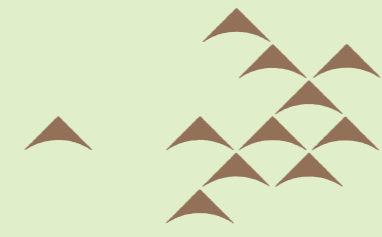
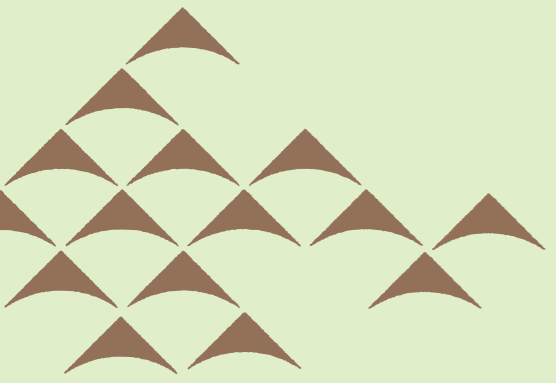
Organizational Transparency is Critical to an Attractive University

Organizational transparency is critical for an attractive University. Transparency works when the faculty and staff are mutually accountable to each other under the principle of open access to information. This successful implementation creates a good relationship of trust among the faculty and staff. We believe that such strong ties will lead to better compliance and harassment prevention.

This integrated report includes introductions of some SUMS alumnae and alumni who are active domestically and internationally. We hope that this report will help our stakeholders grasp our contributions from a broad perspective and reaffirm the pride that students, faculty, and staff have in SUMS, which will motivate them in the coming decades.



*Medical specialist trainees: medical doctors who have completed two years of initial clinical training after obtaining their national medical license, and are in their third year or higher as a medical doctor who seek for a board-certified fellowship.



Explore SUMS

A Half-Century of SUMS History



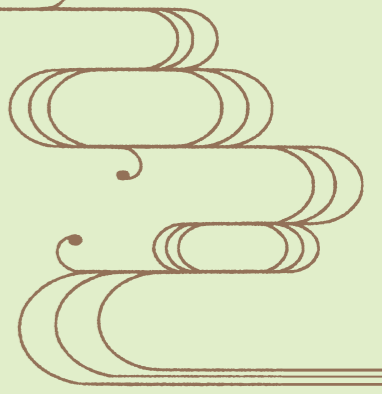
Looking Back on History, Moving toward the Future

History
Photos from graduation memorabilia are included for alumni to reminisce.

Value Creation Process
The process of SUMS leveraging its various capital resources to create values is explained.

Medium-Term Goals and Plans
The achievements of the Third Period are mainly introduced, and the goals and KPIs (Key Performance Indicators) for the Fourth Period outlined.

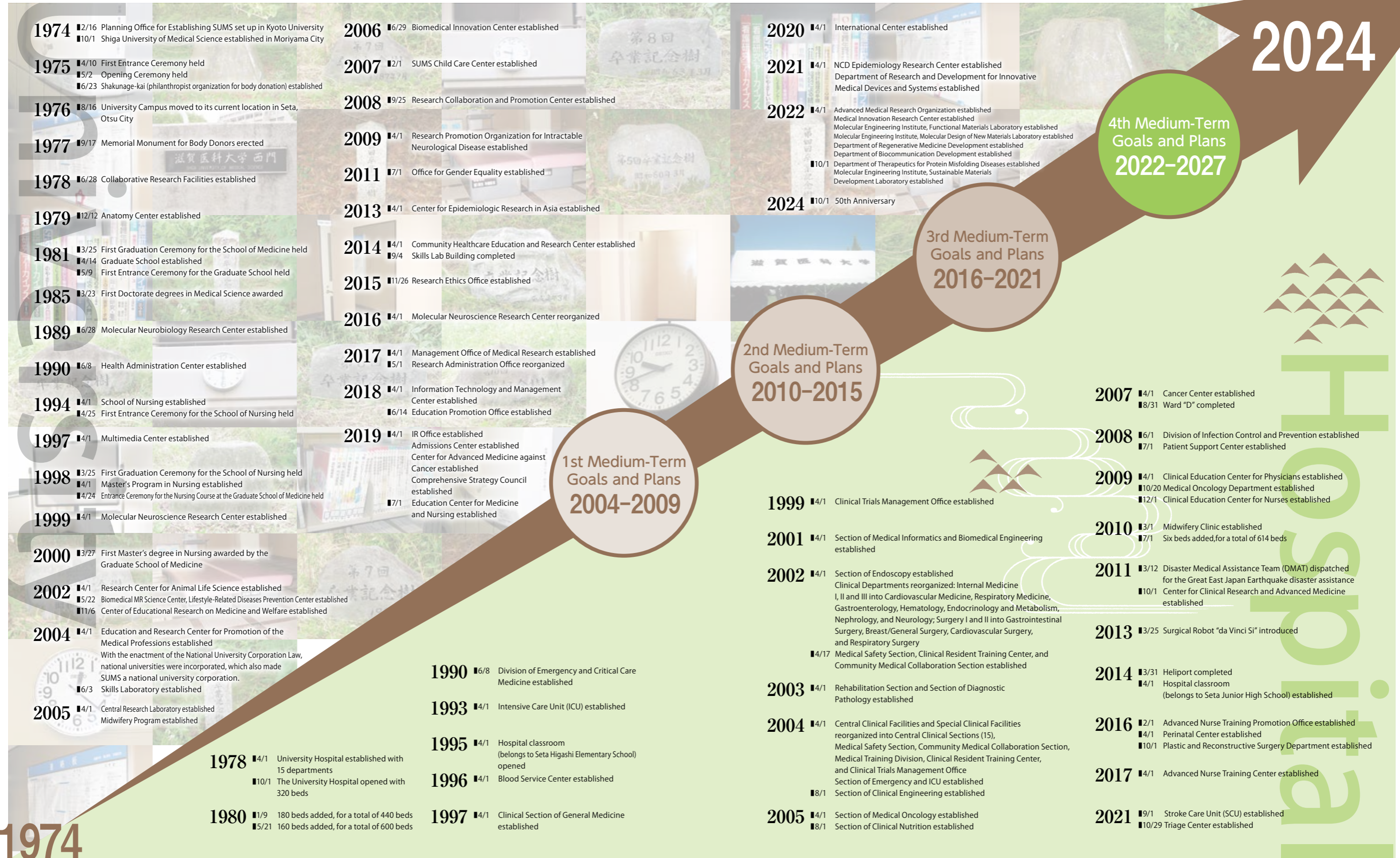
Quick Facts of SUMS
Key figures and information are provided for a better understanding of the features and strengths of SUMS.



History & Milestones

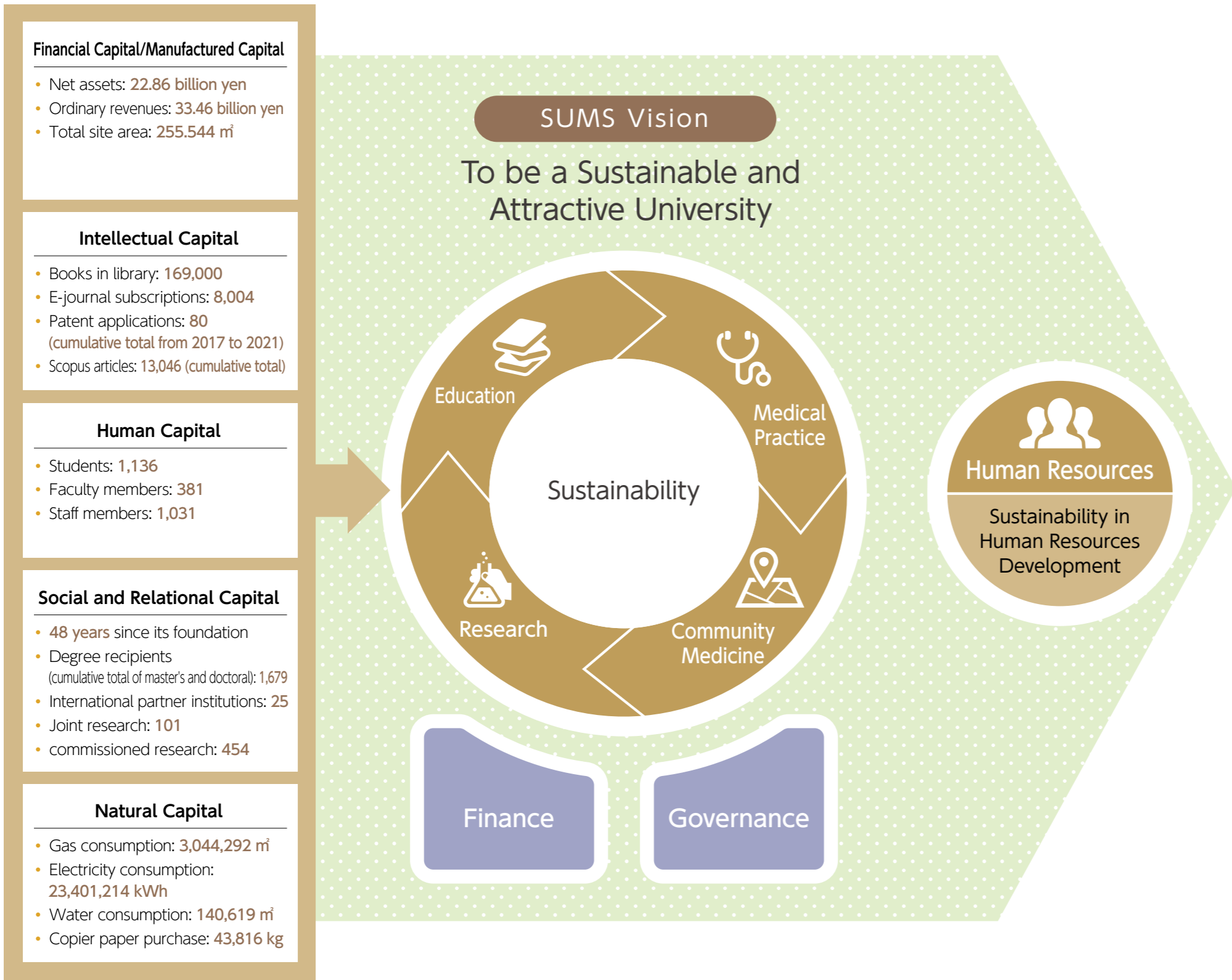


SUMS will celebrate its 50th anniversary in 2024



SUMS's Value Creation Process

supported by the local community, contributing to the community and playing an active part in the world



Sources
 •University Fact Book 2022 (Japan Business Federation)
 •Financial statements for FY2021
 •Environmental Report 2022 (Natural Capital)
 •2022 Profile: Shiga University of Medical Science

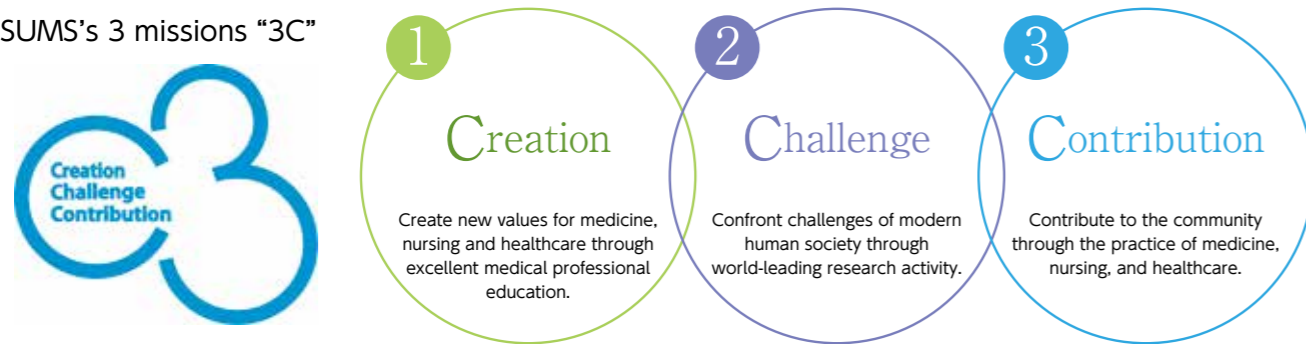
Progress of the Third Medium-Term Goals and Plans



Six-Year Progress of the Third Medium-Term Goals and Plans

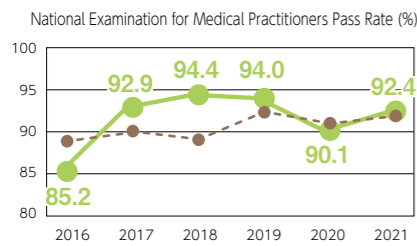
2016 ▶ 2021

SUMS's 3 missions "3C"



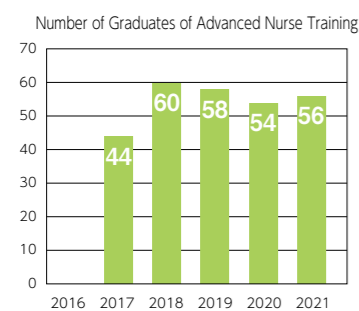
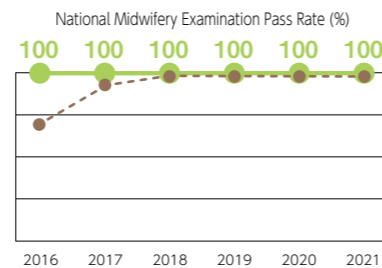
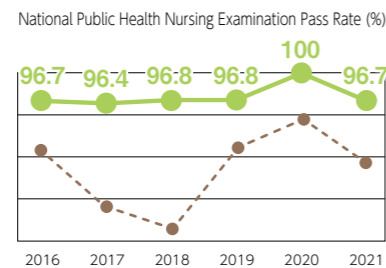
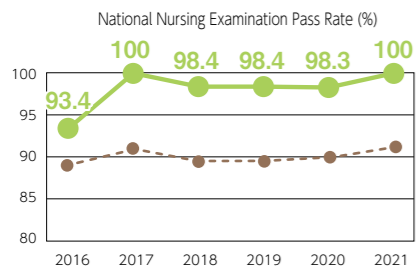
Fostering Medical Professionals

Creation



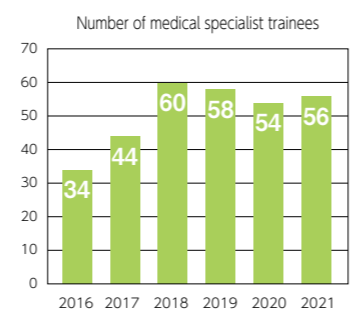
Efforts to improve the pass rate for the National Examination for Medical Practitioners

- The faculty members in charge interview all the students to check their progress toward taking the national exam for medical practitioners by reviewing the results of mock exams, and conduct additional interviews if necessary. Guidance and support are provided to each student according to their needs.
- An e-learning system for the national exam for medical practitioners was developed so that students can search for past questions by keywords such as subjects or diseases.



In FY2016, SUMS became the first national university to provide Advanced Nurse Training for specified medical acts, and many have completed the training over the past six years.

Since FY2021, the courses have been expanded to offer a total of 21 categories and 38 acts.



What are specified medical acts for nurses?

Each specific act refers to medical assistance performed by nurses with a high level of expertise and skills as well as practical comprehension and judgment. Nurses who have completed advanced training can assess patients' conditions so that they can receive care in a timely manner. These skilled nurses also help reduce the workload of medical doctors.

What is a medical specialist trainee?

In the New Training and Certifying System of Medical Specialists that began in FY2018, the term refers to residents who have completed two years of initial training and are in hospital's specialty training program to acquire a board-certification as a specialist.

Promoting of Core Research Areas -From the 3rd Medium Term Goals and Plans-

Challenge

<p>Medical research using cynomolgus monkeys</p> <p>Goal Create 5 types of genetically modified model cynomolgus monkeys.</p> <p>Achieved Created 9 types</p>	<p>Research on neurological intractable diseases</p> <p>Goal File 12 patent applications for neurological research focusing on dementia</p> <p>Achieved Filed 14 patent applications</p>	<p>Cancer research</p> <p>Goal Conduct at least 3 joint researches/projects that contribute to the development of cancer treatment.</p> <p>Achieved Conducted 13 researches/projects</p>	<p>Noncommunicable Diseases Research</p> <p>Goal Conduct 10 joint researches on noncommunicable diseases centering on epidemiology.</p> <p>Achieved Conducted 60 researches</p>
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Succeeded in generating a COVID-19 model monkey

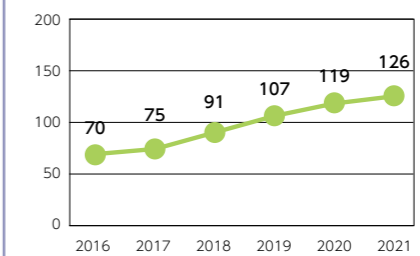


In FY2020, we received a donation of coronaviruses from the National Institute of Infectious Diseases (NIID) for the development of vaccines and therapeutics, conducted research on the development of a COVID-19 model monkey that exhibits pathology similar to that of human disease, and succeeded in

producing a model.

In addition, we have conducted research on the development of a therapeutic agent for COVID-19 and produced an antibody with a high neutralizing capacity that can be applied.

Number of patents held (cumulative value)

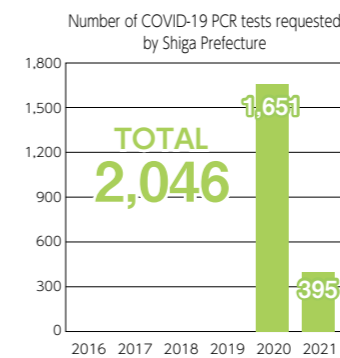
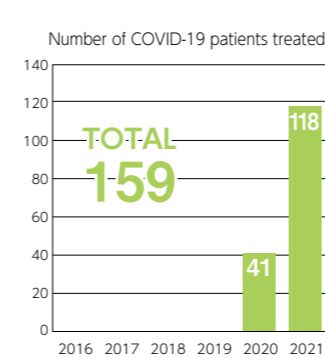


The ratio of the number of patents under license to the total number of patents held was the **highest (44.2%)** among all universities in Japan*.

*From the University Fact Book 2021 (Japan Business Federation)

Contributing to Society through Medical Care

Contribution



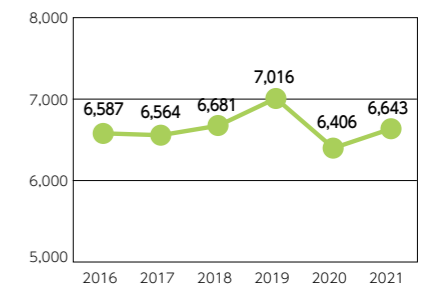
As the last resort of community medical care

In close collaboration with the COVID-19 Disaster Control Center of Shiga Prefecture, we responded to transfer requests from other facilities to treat patients, mainly those with severe symptoms, which accounted for more than 90% of the total number of treated patients at our hospital. To accommodate these severely ill patients, a ward (with 25 beds) dedicated to COVID-19 infections was established. We accepted one critically ill patient from Osaka Prefecture, where the medical care shortage had become serious.

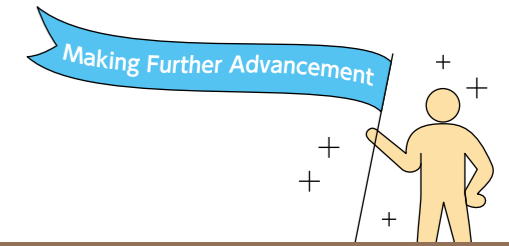


Number of surgeries (performed in operating rooms)

Although the number of surgeries decreased in FY2020 due to the COVID-19 pandemic, we did our best to maintain our practice to provide appropriate surgical treatment to patients who needed surgery under such circumstance.



The Fourth Term Has Begun



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

2022 ▶ 2027

To Be a Sustainable and Attractive University

Sustainable & Attractive

With the start of the Fourth Medium-Term Goals and Plans, 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.

<p>Sustainability in Community Healthcare</p> <ul style="list-style-type: none"> 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.) 	<p>KPI</p>  <p>Percentage of medical school graduates enrolled in the quota for regional service employed in Shiga immediately after graduation</p> <p>At least 90% on average over 6 years</p>	<p>KPI</p>  <p>Number of medical school graduates employed in Shiga immediately after graduation</p> <p>Increase by at least 5% over 6 years</p>	<p>KPI</p>  <p>Number of medical specialist trainees at the University Hospital (SUMS alumni)</p> <p>At least 35 trainees on average over 6 years</p>	<p>KPI</p>  <p>Number of visiting nurses in Shiga</p> <p>At least 2.8 nurses on average over 6 years</p>	<p>KPI</p>  <p>Number of nurses with advanced training assigned to the University Hospital</p> <p>At least 50 nurses by FY2027</p>
<p>Sustainability in Education</p> <ul style="list-style-type: none"> Cultivating human resources capable of AI development and ICT utilization Establishing an education system for the future (STEAM education, online education, simulation education, etc.) 	<p>KPI</p>  <p>Number of lectures on themes involving integration of medicine and other fields including AI</p> <p>Increase by at least 25% over 6 years</p>	<p>KPI</p>  <p>Pass rate of the National Exam for Medical Practitioners for new graduates</p> <p>At least 95% on average over 6 years</p>	<p>KPI</p>  <p>Pass rate of the National Nursing Exam for new graduates</p> <p>At least 98% on average over 6 years</p>	<p>KPI</p>  <p>Pass rate of the National Public Health Nursing Exam for new graduates</p> <p>At least 98% on average over 6 years</p>	<p>KPI</p>  <p>Pass rate of the National Midwifery Exam for new graduates</p> <p>At least 98% on average over 6 years</p>
<p>Sustainability in Research</p> <ul style="list-style-type: none"> Deepening distinctive research Developing young human resources who will become future leaders Increasing external funds through promotion of industry-academia collaborative research 	<p>KPI</p>  <p>Number of products and services to which SUMS contributes in development</p> <p>More than double in 6 years</p>	<p>KPI</p>  <p>Number of papers published in English per young researcher</p> <p>Increase by at least 10% over 6 years</p>	<p>KPI</p>  <p>Intellectual property-related income</p> <p>More than double in 6 years</p>	<p>KPI</p>  <p>Income from external funds through collaborative research and open laboratories</p> <p>Increase by at least 5% over 6 years</p>	<p>KPI</p>  <p>Number of double-degree program or equivalent programs</p> <p>At least 1 in 6 years</p>
<p>Sustainability in Running the Operation</p> <ul style="list-style-type: none"> 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 	<p>KPI</p>  <p>Reduced work hours through the introduction of digital technologies such as AI and RPA</p> <p>At least 1,000 cumulative hours over 6 years</p>	<p>KPI</p>  <p>Number of participants in Skills Refresher Course (Career continuity support for female physicians)</p> <p>At least 6 participants over 6 years</p>	<p>KPI</p>  <p>Number of patients transported by ambulance and helicopter</p> <p>Increase by at least 25% by FY2027</p>	<p>KPI</p>  <p>Number of gastrointestinal endoscopic examinations and treatments</p> <p>Increase by at least 25% by FY2027</p>	<p>The functionally enhanced ward of the University Hospital will be completed around January 2026.</p>  <p>Image for the new building</p>

*We have a plan to establish a double-degree or joint-degree program for doctoral course to nurture young researchers who will actively work worldwide.

Quick Facts of SUMS



Founded

in **1974**

The 50th anniversary will be celebrated in 2024

From the Lake Country to the World

Half a century of services to health care and beyond

50th Anniversary Website

滋賀医科大学

Faculty and Staff

(May 2022)

— Percentage of females —

All Faculty and Staff members **62.0%**

Faculty members **26.8%**

The Japan Association of National Universities developed the "Action Plan for the Promotion of Gender Equality at National Universities" and a follow-up survey has been conducted annually. The target for the female faculty ratio by 2025 is set at 31%. However, the survey shows the average ratio at universities were 24.4% in 2020 and 25.0% in 2021. Although SUMS is above the average, we must continue to create an environment where both men and women can work equally.

National Examination Pass Rate

(FY2021)

	SUMS	National average
Doctors	92.4%	91.7%
Nurses	100.0%	91.3%
Public health nurses	96.7%	89.3%
Midwives	100.0%	99.4%

The pass rate for the National Examination for Medical Practitioners in FY2020 was slightly lower than the national average. The director in charge of education has taken measures to help students to prepare for the national examinations, and through the efforts, we exceeded the national average in FY2021. We will continue striving to help students launch their careers from SUMS as medical professionals.

External Funds Received

(FY2021)

3.3 billion yen

- Grants-in-Aid for Scientific Research: 11.4%
- Donations: 12.4%
- Commissioned research: 18.3%
- Joint research with private companies: 2.1%
- Other competitive external funds: 55.7%

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.

In August 2022, a project was adopted by AMED* for the formation of a world-class research and development center for vaccine development.

Title of the Project: Support organization for vaccine evaluation using primate models

Grant (for direct costs): 372 million yen (total for 5 years)

*AMED: Japan Agency for Medical Research and Development

Number of Students

(May 2022)

Level	Male	Female	Total
Undergraduate	413	269	682
Graduate	10	230	240
Doctoral Program	111	59	170
Master's Program	9	35	44
Total	543	593	1,136

Male-to-Female Ratio approx. 11 : 12

International Students: 15.0%
Adult Graduate Students: 72.4%

Student-to-Faculty Ratio

(May 2022)

1 : 2.4

National University Average ST Ratio 1:9.4 (researched by IR office)

SUMS has more faculty than the national average for the number of students, which allows us to provide generous support in teaching and research. We also endeavor to give better guidance to each student.

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

(FY2021)

30.0% National average 27.9%

We support young researchers engaged in medicine and nursing by encouraging them to obtain research funds. In particular, SUMS has a high adoption rate for the "Grant-in-Aid for Early-Career Scientists (38.1%)", which is above the national average, and the "Grant-in-Aid for Research Activity Start-ups (35.7%)."

Patent Licensing Rate

University Fact Book 2022 (Japan Business Federation)

Ranked **3rd** (out of all universities in Japan)

47.0%

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.

Career Paths of Alumni in Shiga

(FY2021)

Considering the percentage of students from Shiga at the time of admission (18.8% for the School of Medicine and 39.7% for the School of Nursing), it is clear that even those not from Shiga remain in the prefecture after graduating. We believe this is connected to our university's goal of "contributing to the community."

40.0% School of Medicine

56.5% School of Nursing

Percentage of enrollment of students from Shiga

Year of admission	School of Medicine (%)	School of Nursing (%)
2014	18.8	39.7
2015	18.8	39.7
2016	18.8	39.7
2017	18.8	39.7
2018	18.8	39.7
2019	18.8	39.7
2020	18.8	39.7
2021	18.8	39.7
2022	18.8	39.7

Legend: ■ From Shiga Prefecture ■ From other prefectures

Ordinary Revenues

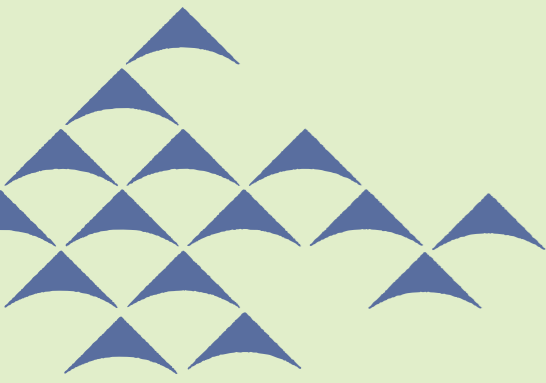
(FY2021)

33.46 billion yen

Times Higher Education THE World University Rankings: Japan 2022

In the field of "Educational Resources" Ranked **10th**

Educational Resources represents how well-rounded education is, based on data such as funds per student and faculty ratios.



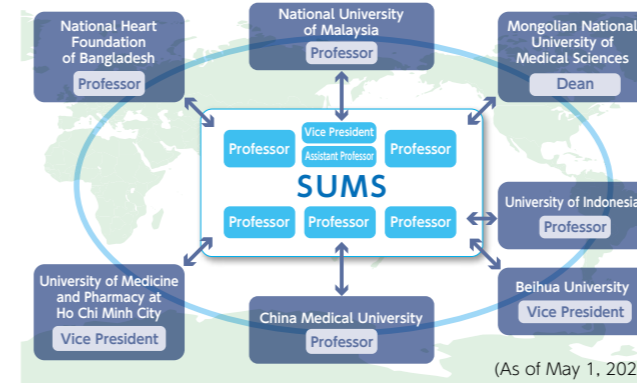
Missions: International Exchanges

To Contribute
to the International Society
from Shiga



International Exchanges between Shiga and Overseas

Partner Institutions and Supporting Faculty

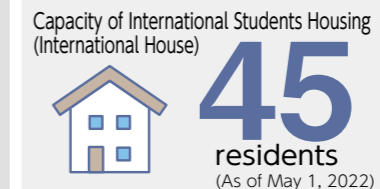
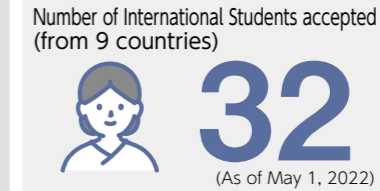
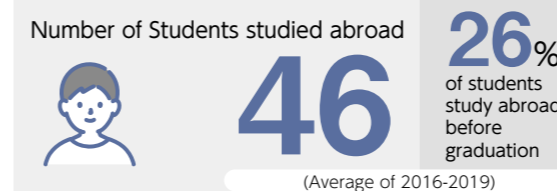


In order to facilitate international cooperation, we have supporting faculty members at some of the partner institutions to assist in the selection of exchange students, to follow up with alumni, to promote joint research, and to provide other support as a point of contact.

Number of Partner Institutions (from 13 countries)

25

International Exchange of Students and Faculty



In order to cultivate internationally competent medical professionals, we promote international exchange programs for both students and faculty, while actively accepting excellent students from overseas, mainly from Asian countries. We have also established the International Joint Research Division at the Medical Innovation Research Center (MIRC) to strengthen international cooperation.

Serving the International Community from MIRC

To Contribute to the Future 未来への貢献

The Medical Innovation Research Centre (MIRC) established in 2022 aims to contribute to medical innovation through research results, nurture future research leaders and enhance SUMS presence in the international arena through research collaboration and joint degree programmes. For example, SUMS' s collaboration with Universiti Kebangsaan Malaysia (UKM) from 2011 will be strengthened with the proposed SUMS-UKM double degree or joint PhD degree program in Ageing Science. The collaboration will advance the field of neurodegeneration and age-related diseases; a growing problem worldwide, helping to delay the onset of age-related non-communicable diseases and expand the 'Healthy Life Expectancy' (HALE) of individuals which is a priority of the World Health Organization.

MIRC is poised to spearhead the international relationships of SUMS further to a different level and welcomes researchers both locally and internationally to move forward together to improve the quality of life during ageing through state of the art, pushing the boundaries research.

- 研究成果の実装化
- 将来の研究リーダーの育成
- 認知症や生活習慣病に関する国際共同研究の推進
- 健康寿命の拡大に貢献
- 海外協定校とダブルディグリー
またはジョイントディグリープログラムの構築



Wan Zurinah Wan Ngah(ワンズリナワンナグ)
Special Contract Professor

International Center

Support system and current initiatives

SUMS-TAS: SUMS Total Advanced Support for Foreign Students

The International Center works together with the Student Division and the IR Office to provide consistent support for international students from pre-admission to post-graduation, tailored to each student's individual circumstances.

International Center Website



SUMS Grant (Scholarship for International Students)

In collaboration with our partner institutions, we recruit outstanding students from overseas and provide them with the opportunity to pursue advanced education and research in our doctoral program.

Japanese Government (MEXT) Scholarship (Preferred Allocation)

For the MEXT Scholarship with University Recommendation, SUMS has a quota of 4 students and we have been accepting 4 international students annually since 2021.

Japanese Language Class

Five standard courses and two special courses (pre-starter and Japanese Language Proficiency Test (JLPT) preparation) are available for all international students to choose from, depending on their language level and goals. We also assist students seeking employment in Japan by helping them study for the JLPT.

Learning Japanese Brings Positive Results 日本語の学びをきっかけに

Learning Japanese is important because there are situations where English doesn't work. The Japanese language classes enables you to learn not only the language but also the culture, and to interact with other international students. As your Japanese improves, you will be more positive about your academic work as well, and it may even lead you to find a job in Japan. Enjoy learning Japanese!

日本語を学ぶことは大切だと思います。日本では、英語が通じず、コミュニケーションがうまく行かないことがあるからです。昨年、国際交流センターに日本語クラスができ、私の状況は変わりました。先生は英語と日本語の両方で教えてくれるのでわかりやすく、日本文化も学べ、他の留学生とも交流できるので、私はクラスを楽しんでいます。

日本語が上達すると、日本と私の国で仕事を見つけるのに有利だと思います。他の言語と文化を学ぶことは、より良い学業成績と前向きな姿勢を得ることができます。

みなさん、日本語を楽しく学びましょう!



Aslina Pahrudin Arrozi
(アスリナ・パルディン・アロズィー)

Medical Innovation Research Center 創発的研究センター
Completed Ph.D. in Sept. 2022 and appointed as Special Contract Assistant Professor in Oct. 2022
2022年9月 修了 / 2022年10月より特任助教

From Shiga to the World: International alumni working abroad

Aiming for Sustainable Social Change

サステナブルな社会変革をめざして

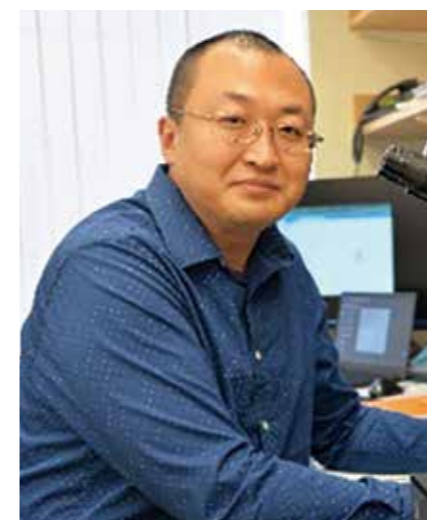
I lead a program of research which addresses health disparities faced by socially vulnerable population groups, including ethnic-minority/immigrant communities in Canada, with a focus on equity, diversity, and inclusion. Striving for social innovation for sustainable change to address these health inequalities requires meaningful engagement with all levels of stakeholders. Thus, I have embraced Community Based Participatory Research, Human Centered Design, and Integrated Knowledge Translation approaches into my program of research. Knowledge mobilization and meaningful community engagement is at the cores. I have been a highly published researcher and contribute to community capacity building through equitable and empowered involvement of community members in the research process.

私は現在、カナダにおける少数民族や移民といった社会的弱者の集団が直面する健康格差の問題に取り組んでいます。この課題を解決するためには、研究の成果を一般に普及させ、コミュニティへ効果的に参画することが必要です。私の研究では、住民たちが分け隔てなく自ら課題解決に関与し、そのことを通じてコミュニティの力が強まるよう促しています。



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2014年9月修了

Thanks to the Research Environment of SUMS

今の私を創ってくれた滋賀医大の研究環境に感謝

I currently work as an Assistant Professor of Neurology and principal investigator at Harvard Medical School. My lab is a biological question-oriented lab focused on translational research of Alzheimer's disease and related dementias (ADRD), including cerebral amyloid angiopathy and down syndrome dementia. We applied multidisciplinary approaches including, genetic analysis, brain imaging (MRI and PET scan), CSF/plasma biomarkers, transcriptome/proteome of patient-derived iPSC-neurons, and brain in situ neuropathological methods, to deep phenotype large cohorts of patients. We aim to understand the pathogenesis of ADRD at a whole new different level. Meanwhile, we also conduct technical innovations to precisely measure neurodegeneration-related protein biomarkers in as little as 10 ul of human plasma. Through close collaborations with many academic and industrial partners, we believe that we will develop an accurate diagnosis and disease-modifying therapies for ADRD in near future.

As an alumnus of SUMS, I benefited from the research-friendly environment of SUMS and similarly developed my research program. I believe that SUMS has a lot of potential and capability to educate next-generation leaders of medical care and science.

私のラボは、アルツハイマー型認知症に関する生物学的な橋渡し研究を行っています。産学にわたる緊密な協力者を得て、認知症に関する正確な診断や病態修飾療法を、近い将来に開発できるものと確信しています。滋賀医科大学在学中は素晴らしい研究環境のもとで研究プログラムを進展させることができ、現在の研究に繋がられたことに感謝しています。