

PROFILE **M.**

2013 - 2014

NAGOYA UNIVERSITY
Graduate School of Medicine, and
School of Medicine

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Mission of the Nagoya University School of Medicine

- 1** To develop cutting-edge medical research that will contribute to an improvement in the health of mankind and to create new medical technology.
- 2** To develop an open system to utilize sources of talented people which can serve as the hub for medical research and medical care.
- 3** To enhance the quality of local medical services in cooperation with local institutions, both in medical research and medical care, and to improve medical care standards in Japan and the world.
- 4** To foster medical researchers and medical professionals who respect medical ethics, and take pride in contributing to the welfare of mankind.



Logo

A combination of three cranes, symbolizing love (humanity), harmony (partnership), and honesty (good faith) respectively.

This symbol represents the essence of healing and diligent medical study that physicians must embrace and hand down to the next generation.

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Graduate School of Medicine, and
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TAKAHASHI, Masahide

Dean of the School of Medicine and Graduate School of Medicine

Upon the publication of the 2013-2014 Profile of the Nagoya University School of Medicine and Graduate School of Medicine, I am honored to have this opportunity to say a few words of greeting.

The Nagoya University School of Medicine was originally founded in 1871 by the Nagoya feudal clan as a temporary hospital and temporary medical school. With a history and traditions stretching back 140 years, it is one of the oldest medical schools in Japan. In 1939 the University became the seventh Imperial University in Japan, with faculties of medicine and science and engineering. In 1949, after World War II, it was restarted as Nagoya University under a new education system.

In 1997 the Department of Health Sciences was established; the School of Medicine thus came to comprise two faculties, Medicine and Health Sciences. Then, in 2000, Nagoya University completed organizational strengthening of its graduate schools and, as a graduate university, it restructured the Graduate School of Medicine by reorganizing the basic and clinical medicines into four research fields: Integrated Molecular Medicine, Cell Information Medicine, Function Construction Medicine and Health & Community Medicine. In this school year, these four programs have been merged into one program named the Program in Integrated Medicine, in which three divisions, the Division of Basic Medicine, the Division of Clinical Medicine, and the Division of Clinical Pharmacology, have been established. For the Division of Clinical Pharmacology, we have just launched two new disciplines, Biostatistics and Toxicogenomics, to enhance drug discovery and clinical medicine research. Additionally, in the Division of Clinical Pharmacology, we are offering some new joint sub-divisions in order to strengthen the development of individuals with potential capability in drug discovery and those with the ability to accelerate clinical trials, because this is an area in which Japan lags behind other countries. These sub-divisions include one developed under an industry-academia collaboration in cooperation with pharmaceutical companies including Novartis Pharmaceuticals Japan and Astellas Pharma Inc., one jointly organized with Meijo University Graduate School of Pharmacy, and one with the Institute of Statistical Mathematics and the Pharmaceuticals and Medical Devices Agency.

Simultaneously with the reorganization of the Graduate School of Medicine as described above, we are improving the facilities that support the basis of our education and research, as a result of which the construction of the Graduate School of Medicine's research building No. 3 will be completed during this school year. This building will include an anatomy training room for students, a histological/pathological training room, a radioisotope center, and a common-use equipment center. The building will also provide space for various project-based studies, including those conducted by endowed chairs and by industry-academia collaborative sub-divisions. Biostatistics and Toxicogenomics, the new disciplines which will be established in the Division of Clinical Pharmacology as mentioned earlier, will also be housed in building No. 3, thus improving our education and study environment.

As one of the major missions of the Graduate School of Medicine this year, we intend to accelerate the internationalization of the institution at the research level. Following the symposium organized with the Medical University of Vienna in January 2013, we held another symposium at the University of Adelaide in Australia in May. These were attended by many research scientists from the Graduate School of Medicine, thus deepening our mutual relationships with the two universities. Since international joint studies will increasingly be required in the future, we intend to organize similar symposiums on a regular basis.

We aim to have a School of Medicine and Graduate School full of vitality, and intend to put all possible effort into achieving this. We appreciate your advice and guidance.



SAKAKIBARA, Hisataka

Head, School of Health Sciences

Director, Graduate School of Medicine (Health Sciences)

The Nagoya University School of Health Sciences was established in 1997 as one of the few schools of health sciences in Japan which consists of five departments: nursing, radiological technology, medical technology, physical therapy, and occupational therapy. The school has a history of more than 100 years, originating from a training school for nurses which was founded in Aichi Medical School in 1894. The institute was strengthened as an educational research organization centered on the graduate school in April 2012. Since then, as the Graduate School of Medicine comprised of the departments of nursing, radiological and medical laboratory sciences, and physical and occupational therapy, we have enhanced our educational research activities.

In today's medicine, the highly advanced medical technology is developed remarkably, and there are also increasing needs for comprehensive healthcare and welfare focusing on the quality of life (QOL) of patients and their families, such as palliative care and terminal care. Better education and research in healthcare is a social necessity in the declining birth rate and the ageing society. Nagoya University, in addition to training skilled human resources who will play a leading role in healthcare in the future, aims to expedite healthcare research and hence further progress in healthcare in the 21st century.

Nagoya University instituted the Training Course for Total Health Planners (THP) (designated as a Good Practice in 2007 by the Ministry of Education, Culture, Sports, Science and Technology (MECSST)), a unique initiative for human resource development with a view to expanding team medical care performed by interprofessional collaboration. In the 2012 school year, we further restructured the curriculum of the graduate school's common education into a cross-department system to improve the educational program offered at the school.

To develop specialists in today's highly advanced medical technologies, we established a certified nurse specialist (CNS) training course to develop oncology nurse specialists and pediatric nurse specialists and, in accordance with the Foundation Enhancement Plan for Training Oncology Professionals designed by the MECSST, we train oncology nurse specialists, radiology technologists who specialize in radiation therapy, and physicists in medicine. Additionally, in line with the MECSST's objective of establishing a stronger system for training nurses, we have been improving our human resource development as well as educational research in collaboration with Nagoya University Hospital.

In addition, for the internationalization of education, we launched an international exchange program with the Department of Health Sciences/Nursing of Yonsei University in Korea in 2010, in which academic research meetings are held alternately at each university every year. In 2011, a program was commenced among Yonsei University, Shanghai Jiao Tong University, National University of Singapore, and ourselves to accept each other's undergraduates for clinical nursing training.

Regarding research, following the establishment of the Brain & Mind Research Center in 2011, we will accelerate studies utilizing magnetic resonance imaging (MRI) and magnetoencephalography (MEG). In the 2012 school year, we started to participate in the Innovative Research Center for Preventive Medical Engineering—a center for collaboration among medical engineering, industry, and academia—to broaden the range of our research projects.

The alumni from our institute are now active in various medical and educational organizations and are potential future leaders. We will continue to develop our educational research in the health sciences and thus contribute to the progress of modern healthcare.

Tsurumai Campus: Medical Science Research Building 1 and 2



Nagoya University Hospital



Daiko Campus: Main Building of School of Health Sciences



Special Topics

Aiming to Build a World-leading Center for Outstanding Research and Education

As an international research university, the Nagoya University Graduate School of Medicine and School of Medicine are actively carrying out international initiatives to develop human resources as a social responsibility. We are also working to improve studies in integrated research fields and large-scale projects, strengthening the research system and environment ranging from basic through clinical, and returning the results of research to society. Our aim is to conduct world-class academic research.

Of these initiatives, the latest activities are introduced here.

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“Nagoya University Student Association of Medical Research (LOVE LAB)”

KURODA, Keisuke, Extraordinary Assistant Professor
 Nagoya University Student Association of Medical Research
 Project for Development of Researchers in Basic Medicine

The Lack of Research Physicians: Another Aspect of the Shortage of Physicians

In recent years, the nationwide shortage of physicians and the resulting collapse of healthcare services in local areas have caused growing concern. Although the shortage of clinicians including surgeons, pediatricians, obstetricians, and anesthesiologists has been widely reported in the media, there has been little attention on the falling number of physicians engaged in research, especially in basic medicine. Unfortunately there is now a serious shortage of young physicians seeking to become researchers in basic medicine. In the long term, this will cause a decline in the level of medical research in Japan, and hence lower levels of healthcare, increased healthcare expenses, and dwindling international competitiveness of the drug discovery and medical devices industries.

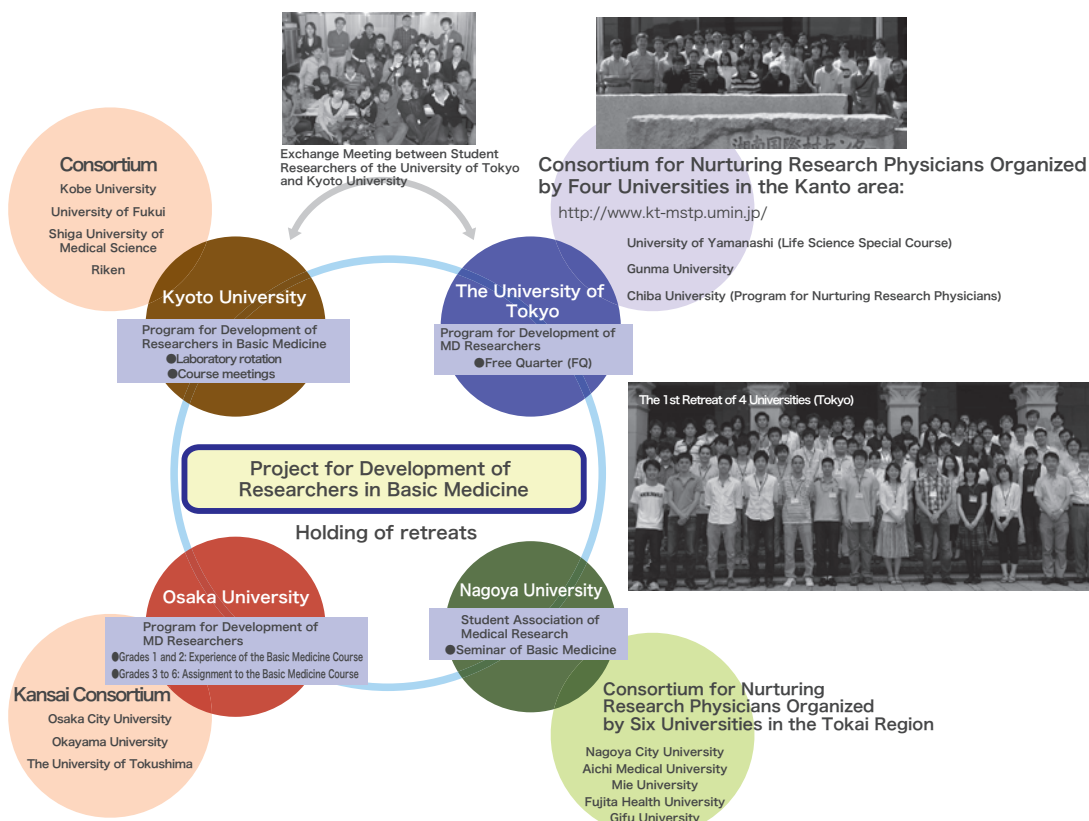
Leveraging the winning of the 2012 Nobel Prize in Physiology or Medicine by Professor Shinya Yamanaka of Kyoto University, we need to put much greater effort into encouraging researchers to boost the number of research scientists who may follow Professor Yamanaka’s achievements in basic medicine.

Initiatives at Nagoya University

In the 2011 school year, under the auspices of MEC-SST, Nagoya University launched a project jointly with the University of Tokyo, Kyoto University, and Osaka University to train researchers in basic medicine. The project aims to produce a several researchers in basic medicine every year, through a system for sending students overseas and for providing scholarships for going on to graduate school. We also set up a consortium for nurturing research physicians to collaborate with other schools of medicine in the Tokai region. In the 2012 school year, the Nagoya University Student Association of Medical Research was launched to assist the project, in which a teacher in charge is assigned to guide and assist the students’ research activities. In the same year, the consortium for nurturing research physicians organized by six universities in the Tokai region held its first retreat. The Student Association of Medical Research will continue its activities in the 2013 school year.

Cultivating a Research Mind

Although medical care depends on advanced technologies, good medical care in the actual setting requires more than just detailed knowledge gained from famous textbooks or treatment guidelines. We need to doubt self-evident ‘truths’, understand back-



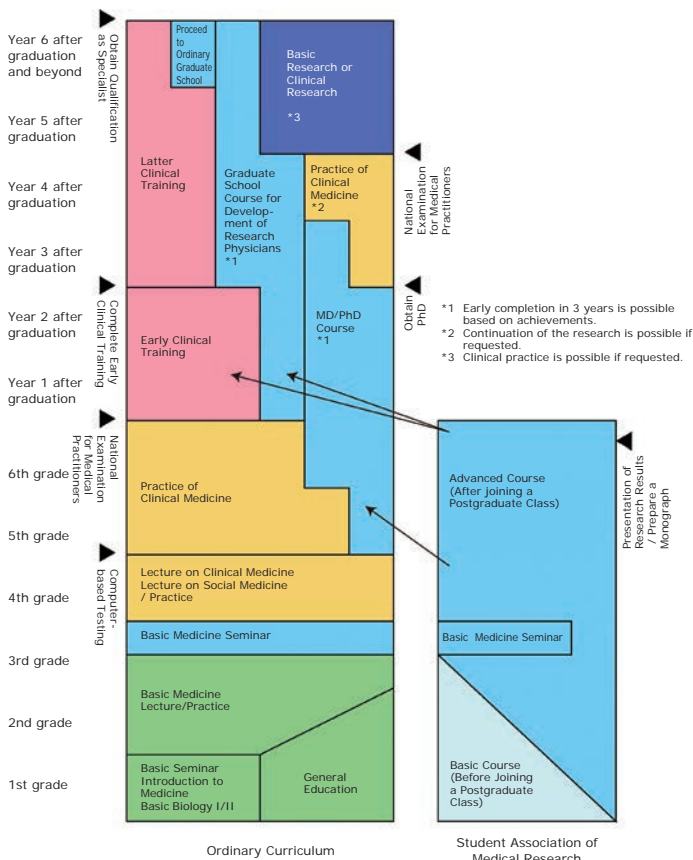
grounds, and develop the ability to analyze experiences properly. In other words, we need to cultivate a 'research mind', which means a passion for exploring the unknown. The key to nurturing research physicians is to have as many students as possible discover the joy and importance of doing research, with the whole School of Medicine sharing the same research spirit. We hope that students seeking a career in research as well as the clinical field will experience research activities through this project and develop a research mind.

Activities of Nagoya University Student Association of Medical Research

In the 2012 school year, Nagoya University launched the Nagoya University Student Association of Medical Research (LOVE LAB) to develop young researchers. The Association is for undergraduates and, as the name 'Student Association' indicates, participation is optional and at the students' discretion, just like other student group activities. The Student Association offers the following two courses.

Basic Course

This course is for undergraduates who are interested in research. The professors of the School of Medicine talk about their research careers and the con-



tents of their studies, to help students realize the joy of conducting research and develop a research mind. In addition, seminars are held to teach how to read scientific papers, how to design research plans, how to perform experiments and so forth. For students wishing to conduct particular types of research, arrangements are made for them to tour research laboratories.

Advanced Course

This course is for undergraduates who are already conducting research aiming to become research physicians. Monthly meetings to report on the progress of their research are held and financial support is provided to help them attend domestic and overseas academic conferences and to visit research laboratories. Group retreats, including research presentations, are held to enhance exchanges with other universities. For those who request it, arrangements are made for joining the MD/PhD course or proceeding to the graduate school as early as possible after graduation.



Conclusion

When working hard through trial-and-error in the world of research, there is a moment when a splendid idea comes up. If this idea leads to a new discovery, the joy is unparalleled. This is the true pleasure of research. We sincerely hope that as many undergraduates as possible will try doing research and experience the fun.

Project for Development of Researchers in Basic Medicine
Nagoya University Student Association of Medical Research Home Page

► <http://med.nagoya-u.ac/nsam/index.html>

“Translational Research Support Center/Core Hospital for Clinical Research/Chubu Regional Consortium for Advanced Medicine”

MIZUNO, Masaaki, Clinical Professor
 Center for Advanced Medicine and Clinical Research
 Nagoya University Hospital

The Center for Advanced Medicine and Clinical Research of Nagoya University Hospital supports the entire process from searching for ideas through to medical treatment covered by health insurance, based on its vision, “contributing to society through medical treatment, education, and research”, and its basic principle, “developing new medical services for the next generation”.

In 2012, Nagoya University Hospital was chosen for the Translational Research Network Program of the Ministry of Education, Culture, Sports, Science and Technology (MECSST) and the Project for Establishing Core Hospitals for Clinical Research of the Ministry of Health, Labour, and Welfare (MHLW). Thus, the functions as the Translational Research Support Center and the core hospital for clinical research were added, and both the quantity and quality of advanced medical development conducted in the hospital were improved. We have now separated the functions in the center as follows. The advanced medicine support section primarily serves as the Translational Research

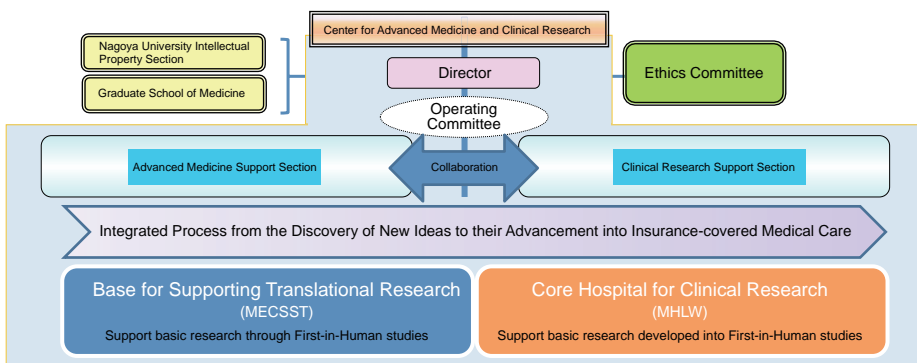
Support Center and is in charge of the process between basic research and ‘First-in-Human’ studies. Meanwhile, the clinical research support section primarily serves as the core hospital for clinical research, and conducts clinical research and trials after the First-in-Human studies. In the future, the effort will be joined with the initiative of the Chubu Regional Consortium for Advanced Medicine, and new medical care in the Nagoya/Chubu region will be developed for the world benefit.

■ Translational Research Network Program (MECSST)

In this program, the university hospital serves as a network hub in the Chubu area for developing advanced medicine through the following three projects.

1) Establish a center for translational research

With a project manager as a leader, the Design Buildup Team comprised of a clinical epidemiologist, biostatistician, patent attorney, data manager, monitoring/audit manager, clinical research coordinator and so forth carries out strategic development of advanced medicine, in close contact with health authorities.



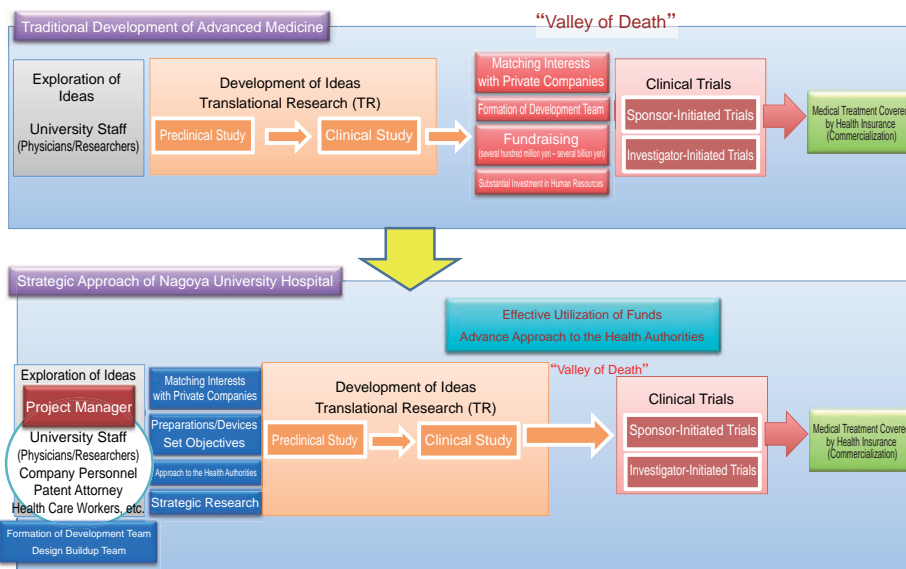
Structure of the Center for Advanced Medicine and Clinical Research

2) Reinforcing the center’s ability to develop ideas

To encourage the development of ideas, a system for collecting and administering new information is established within the university hospital to integrate such information throughout the Chubu area and control the progress of the initiative.

3) Establishment of a permanent center for translational research

We will establish a system to provide the university and other institutes with the services of the Site Management Organization (SMO). To ensure the independence of the organization, revenues from the hospital will be continuously reinvested into translational research to ensure a balanced budget regarding our services.



Design Buildup Team and Strategic Development of Advanced Medicine

■Clinical Research Core Hospital Program (MHLW)

In this project, a clinical research enhancement system in compliance with international standards is implemented by the hospital as a whole through the following four initiatives. This will accelerate practical application and commercialization of research objectives, enabling Japan to take international leadership in the development of advanced medicine.

1) Sustainable search and development of new ideas

We will build a system for carrying out the sustainable search and development of promising new ideas.

2) Education of clinical researchers

We aim to train physicians who can develop ideas and those who have management skills, as well as other personnel with a broad range of skills, to link academic 'intelligence' to 'socioeconomic value', and thus encourage interoccupational collaboration.

3) International standardization as the center for clinical research development (ICH-GCP)

Upon implementing the project for advanced medicine in compliance with the ICH-GCP standards, we aim to achieve 100% compliance with the ICH-GCP within 5 years in clinical studies that are conducted in the university hospital. In addition, we are improving the follow-up of serious adverse events and the support system for patients and their families.

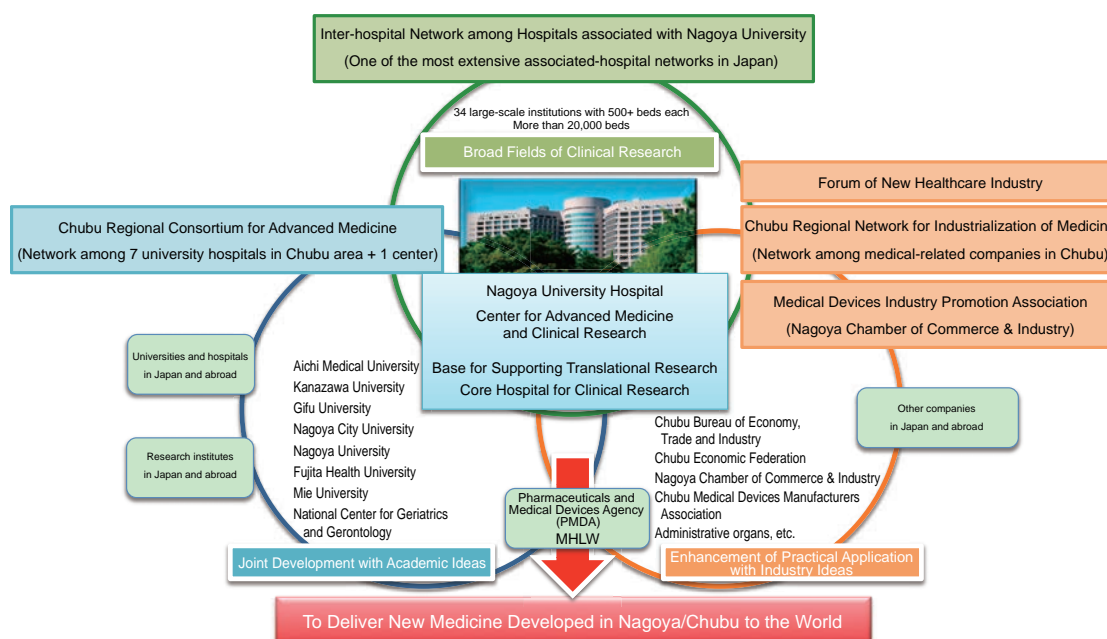
4) Practical application and commercialization of prospective ideas

Utilizing the network among the Nagoya-University-associated hospitals, which is one of the most ex-

tensive inter-hospital networks in Japan, and with the broad clinical research field offered by the Chubu Regional Consortium for Advanced Medicine, we have created a database for patient enrollment and are strengthening strategic clinical research focusing on clinical trials. We also utilize information and communication technology (ICT) and have built electronic infrastructure that enables us to deal with the Food and Drug Administration (FDA) in the United States and other such organizations.

■Chubu Regional Consortium for Advanced Medicine

The Chubu Regional Consortium for Advanced Medicine consists of eight institutes: the seven universities of Aichi Medical University, Kanazawa University, Gifu University, Nagoya City University, Nagoya University, Fujita Health University, and Mie University, and the National Center for Geriatrics and Gerontology. It was established with the objective of building collaboration system among universities in the Chubu area for the rapid development of new medical technologies and devices which meet society's need, and their delivery to patients as fast as possible, to contribute to the health and peace of people in Japan and worldwide. To achieve this objective, the organization is focusing on the following initiatives: 1) planning, adjustment, implementation, and evaluation of multi-center clinical studies, 2) hosting of joint ethical review board meetings, 3) nurturing of human resources for developing advanced medicines, and 4) support for matching interests with private companies for industry-academia collaboration and administration of intellectual property.



New System for Development of Advanced Medicine by Industry-Academia-Government Collaboration

“Profile of Nagoya University Clinical Simulation Center (NU-CSC)”

UEMURA, Kazumasa
Professor, Medical Education, Graduate School of Medicine
Director, Nagoya University Clinical Simulation Center

Nowadays, effective clinical education often involves practicing medical procedures using manikins instead of patients or equipment (simulators) which imitates parts of the living body (a central vein in the neck, bronchi, cubital veins and so forth). Various models simulating real medical settings are also widely used in programs to teach team medical treatment (full-scale simulation training). The pedagogic effectiveness of this approach is recognized irrespective of job category. Previously, the norm was on-the-job training, i.e. learning-by-doing, in which students proceed in order of lectures, observation, and then practice. However, this approach is no longer accepted in contemporary society.

Opening of Nagoya University Clinical Simulation Center (NU-CSC)

Nagoya University launched the Skills & IT Laboratory (“Skill Lab”) in 2006. In addition to simulators of emergencies and resuscitation which are used in lectures on Basic Life Support (BLS) and Advanced Cardiovascular Life Support (ACLS), the laboratory is equipped with ophthalmoscopes, otoscopes, and other instruments for training in performing sutures, intravenous injection, rectal examination, breast palpation and so forth. These are used by a total of 20,000 students, medical interns, newly-employed nurses, and young physicians, nearly 2,000 trainings annually. However, the institute had almost no simulators or training machines for surgical treatment, which had long been awaited because simulation training using such equipment prior to actual clinical practice is crucially important.

Accordingly, a large sum was budgeted in the 2012 budget request, enabling us to obtain many state-of-the-art simulators and training machines mainly for surgical treatment, which led to the launch of the Clinical Simulation Center (NU-CSC) which encompassed and developed the functions of the Skill Lab. Some of the most advanced simulators are outlined below.

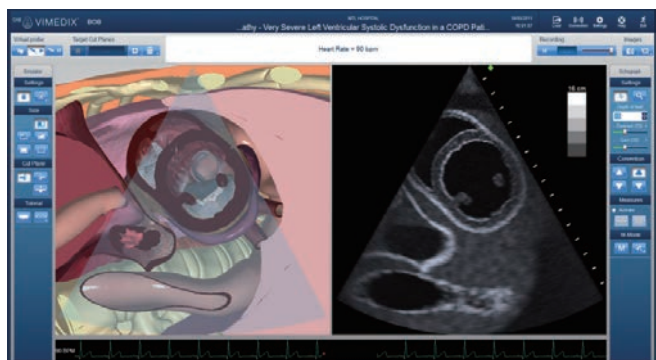
- **Endoscopic Surgical Simulator**

The simulator for laparoscopic surgical training provides simulated vision and tactile sensation of actual laparoscopic procedures by the most advanced technology. Apprentices can learn surgical procedures and how to handle complications and so forth as if it were real.



- **Ultrasound and Endoscopic Simulator**

The transesophageal/trans thoracic echocardiographic simulator provides effective support for the training of diagnostic image reading skills including knowledge on anatomy and pathology which are necessary for cardiac ultrasound imaging and hand-eye coordination by probe-handling.



- **Simulator for Intravascular Surgery**

The Endo Vascular Evaluator (EVE), a simulator for high-precision intravascular surgery, was developed by a venture company, FAIN-biomedical Japan, which was founded by Nagoya University.

This device reproduces blood vessels in the whole body including brain arteries, coronary arteries, hepatic arteries, and renal arteries based on data obtained by actual computed tomography (CT).

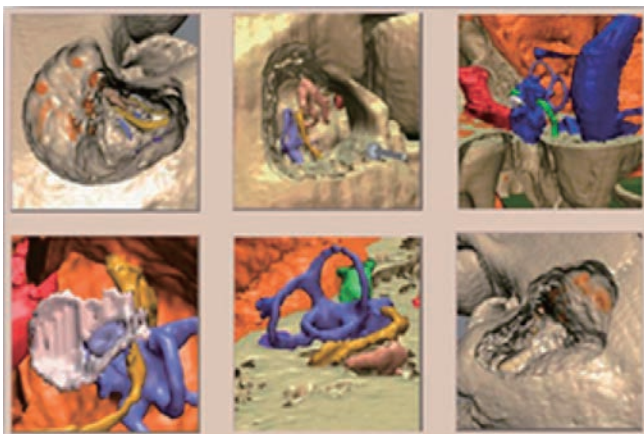
In addition to the basic operation of catheters, it can realistically replicate various procedures including aneurysm embolization, vasodilation, stent placement, recanalization of thrombus, and



angiography.

- **Sensory Organs Simulator**

The virtual ear/nose/throat (ENT) surgical simulator is for surgical training mainly for the middle ear. It re-creates a 3D model of the cranium on the screen from high-resolution data, enabling the trainees to get a sense of touch very similar to actual surgery by using a force-feedback function. Since the simulator can be loaded with individual CT data of patients, users are able to rehearse for each patient prior to surgery.



The NU-CSC was established by encompassing the Skill Lab, and two teachers and two employees were assigned specifically to the institute. As technologies and skills become more advanced, more detailed preparations are required to ensure safe medical treatment. The range and quality of the equipment and instruments installed in the center are of the highest level in Japan.

Future Direction of NU-CSC Activities

- **Collaboration with regional medical education institutes and medical institutions**

NU-CSC is improving the educational program for students at the School of Medicine and the School of Health Sciences (five departments including nursing) of Nagoya University, as well as medical residents and young physicians of the Nagoya University Hospital. We will also continue to implement, in collaboration with regional universities, medical institutions and so forth, various initiatives to contribute to the postgraduate and lifelong training for healthcare personnel who are employed in regional healthcare services, as well as to the education of medical residents and development of specialist physicians.

- **Enhancement of education for interprofessional collaboration**

Education using simulators is extremely effective to learn interprofessional collaboration. Although the importance of such collaboration has long been recognized, it is only recently that a practical education program was developed. The NU-CSC will develop various programs based on accumulated experience for the future.

- **Potential development of medical devices**

The sophisticated simulators recently installed are based on extremely detailed data on the human body and clinical data. The data obtained from using these simulators may thus lead to the development of medical devices in the future. Since the collection of experimental data in actual clinical practice is not easy due to ethical reasons, such data may open up new channels for linking industry and academia.

“Unification into a Single Program Encompassing Integrated Medicine and Pharmaceuticals”

KADOMATSU, Kenji
 Professor, Molecular Biology
 Graduate School of Medicine

Profile of the Unification into One Program

To understand the increasing diversification and sophistication of medicine and to nurture true leaders in the world of medicine and medical research, it is essential to promote both specialized education in a particular research field and integrated education across various research fields. Although separate efforts were made in the four research fields to integrate basic medicine and clinical medicine, the integration was slow due to systemic issues.

Meanwhile, looking back on the recent trends in the pharmaceutical R&D, advances have been made in pathological diagnostics at the molecular level in various fields including cancer, nerves, cardiovascular system, and metabolism. As a result, molecular-target therapy based on pathology is rapidly becoming the main form of the pharmaceutical R&D. Nowadays, no pharmaceutical R&D is possible without medical knowledge and insight. Accordingly, the integration of medicine and pharmaceuticals is becoming increasingly important. The Nagoya University Graduate School of Medicine

already has, besides basic medicine and clinical medicine, an initiative for the pharmaceutical R&D. However, although it is yielding excellent results in individual studies, there was no system to expedite the initiative as the Graduate School of Medicine as a whole.

We thus identified the need to add a new division, Clinical Pharmacology, to Basic Medicine and Clinical Medicine and to restructure them into a unified program that organically merges the three fields. Thus, the former four fields were unified into a single program to enhance the interdisciplinary flexibility of students. We also launched multiple curriculums according to the specialities of the human resources to be developed, to achieve an integrated education (Fig. 1 and Fig. 2).

Supporting Organizations

For the Program in Integrated Medicine, we established a unique network including government organizations, companies, and Meijo University in addition to Nagoya University Hospital, Research

Fig. 1 Program in Integrated Medicine, Graduate School of Medicine, Nagoya University

The former four programs were reinforced and restructured in the 2013 school year to create the unified Program in Integrated Medicine.

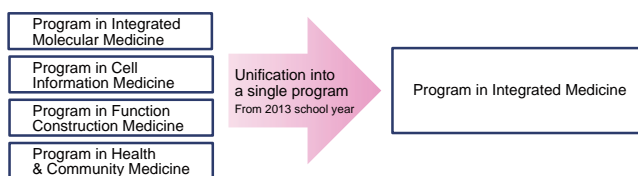
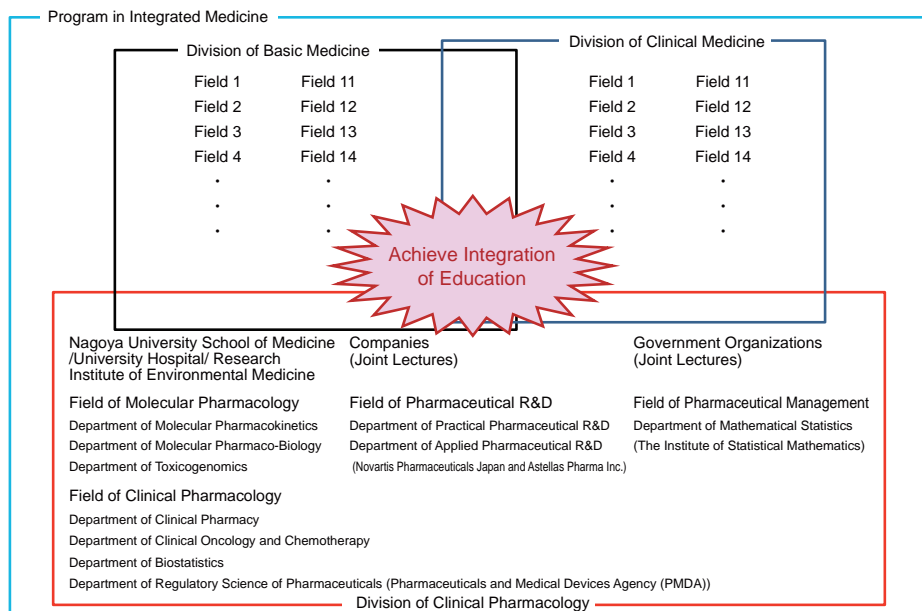


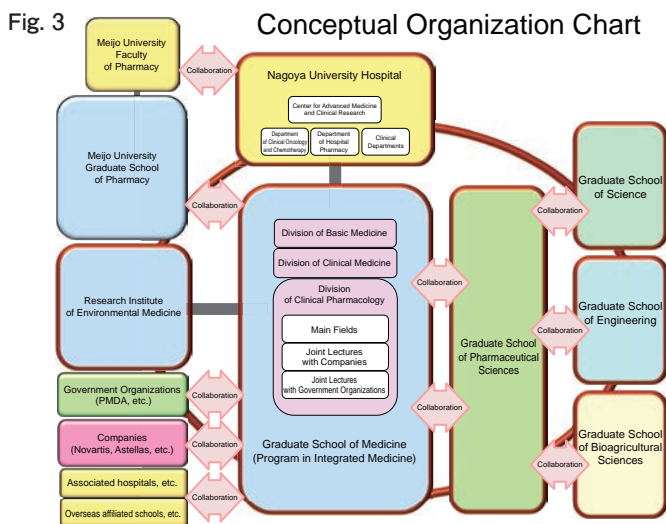
Fig. 2 Structure of Nagoya University Graduate School of Medicine



Institute of Environmental Medicine, associated hospitals, and overseas affiliated schools. Furthermore, the Program in Integrated Medicine is working closely with the Graduate School of Pharmaceutical Sciences established in Nagoya University in 2012, which is supported by the Graduate School of Science, Graduate School of Engineering, and Graduate School of Bioagricultural Sciences, forming an extensive network covering the entire university. Through these networks, we will accelerate drug discovery and improve the study of medicine (Fig. 3).

Approach and Features of the Curriculum Design

In the first and second years after admission, the students study common basic subjects to learn basic research methods and acquire knowledge. In addition, they take special subjects to receive special education in specific fields, and integrated education. In addition to the common (basic) subjects and the special subjects, unique programs are also available for the students (Fig. 4).

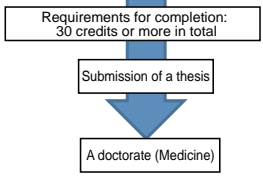


1. Common (Basic) Subjects: Common subjects to acquire a broad basic knowledge as part of the education provided by the graduate school. These subjects include Special Lectures on Medical Science and the Practice of Basic Medical Science (Basic Training).
2. Main Subjects: Core subjects for the students to carry out research in their special field and to become creative researchers/medical trainers. These subjects include Special Seminars and Special Experimental Research.
3. Minor Subjects: Subjects which are relevant to the main subjects and useful for acquiring a comprehensive understanding of developments in broad areas of medicine and healthcare. These subjects include Minor Special Seminars.
4. Unique Programs: These programs support the unique development of human resources of the graduate school through a series of lectures or practicals based on academic frameworks.

Fig. 4

Education Curriculum for the Program in Integrated Medicine

Common (Basic) Subjects	Special Subjects	
	Main Subjects	Minor Subjects
Special Lectures on Medical Science (2 credits)	Special Seminars (10 credits)	Minor Special Seminars (10 credits)
Practice of Basic Medical Science (Basic Training) (2 credits)	Special Experimental Research (6credits)	
Total 4 credits	Total 16 credits	Optional Total 10 credits



- Details**
1. **Common (Basic) Subjects:** Common subjects to acquire a broad basic knowledge as part of the education provided by the graduate school
 2. **Main Subjects:** Core subjects for the students to carry out research in their special field and to become creative researchers/medical trainers
 3. **Minor Subjects:** Subjects which are relevant to the main subjects and useful for acquiring a comprehensive understanding of developments in broad areas of medicine and healthcare
 4. **Unique Programs**
 - Program of Neuroscience: Lectures on neuroscience
 - Program of Cancer Science: Lectures on cancer science
 - Program for Developing Cancer Professionals: Lectures on chemotherapy and radiation therapy for cancer
 - Industry-Government-Academia Joint Program: Lectures based on the collaboration with government organizations, pharmaceutical companies and so forth
 - Program of Clinical Pharmacology: Lectures based on collaboration with Meijo University Graduate School of Pharmacy
 - On-the-Job Training Program: Practical field training at Nagoya University Hospital, Center for Advanced Medicine and Clinical Research, and other hospitals
 - Program of Translational Research: Lectures to grasp the situation of Bench-to-Bedside and to design strategies
 - Program of Medical English: Lectures to acquire English skills required for medical and pharmaceutical research

“International Symposiums”

KASUYA, Hideki, Associate Professor in charge of special education for foreign students, Graduate School of Medicine
Director, Office of International Affairs

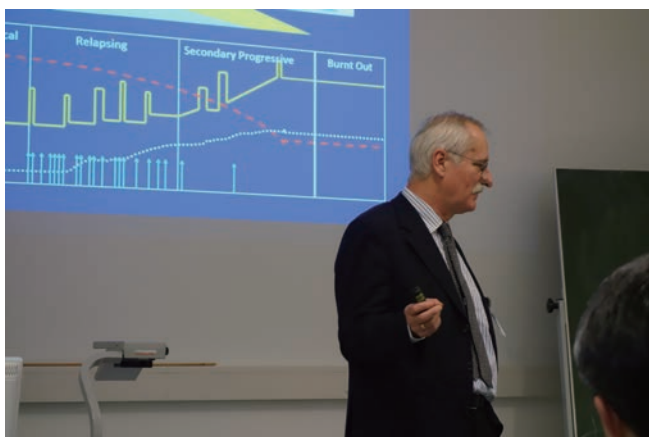
As a research-focused university, the Nagoya University Graduate School of Medicine is striving not only to produce excellent human resources and install advanced equipment but also to create an international research environment for conducting world-leading research. The international symposiums organized with our affiliates, which are among the world’s leading medical schools, are part of the process of building an international research environment.

Aiming to identify ideas for joint research and to improve education in the doctoral course, these international symposiums held between the schools of medicine are open not only to researchers but also to graduate students and facilitate cross-border international exchanges. The first international symposium was held at the Center for Brain Research, Medical University of Vienna in January 2013. The purpose was to understand the contents of the research—especially that on neurological disorders and cancer—ongoing at the Medical University of Vienna and the Nagoya University Graduate School of Medicine; 14 participants from both institutes gave presentations of their studies to help each other understand the research in progress, and to develop it into joint-research opportunities. The symposium was attended by some 100 participants comprised mainly of researchers and graduate students from the Medical University of Vienna. The presentations were also video-recorded to enable those who could not attend on the day to review the contents later. Visits to the research laboratories in related fields were also arranged the day after the symposium to discuss the future directions of studies.



The Medical School of Vienna

Up to a few years before the symposium, the Medical University of Vienna had been part of the University of Vienna as the Medical Faculty of the University of Vienna. The parent body, the University of Vienna, has an impressive history, with nine Nobel Prize winners (five in biology). The association between the Nagoya University School of Medicine and the Medical University of Vienna dates back to the period of the parent body, the University of Vienna, when Professor Albrecht von Roretz of the University of Vienna assumed a post at Aichi Prefectural Public Medical School, the predecessor of the Nagoya University School of Medicine, in 1876 and taught surgery. Following the signing of an agreement between the schools of medicine of the two universities in July 2005, we have greatly enhanced our exchanges. This symposium also initiated links at the research level, and thus our relationship with the Medical University of Vienna has



Pictures of the presentations being made at the first international symposium

developed from an inter-student association to an inter-research association.

We held the second international symposium with the University of Adelaide School of Medicine in May 2013, in which 19 participants gave presentations on the latest research on cancer and neurological disorders. The University of Adelaide has a history as old as the Nagoya University School of Medicine of 150 years and they are now building the South Australian Health and Medical Research Institute (SAHMRI) covering an area of 6,000 square meters. When completed, the University of Adelaide will become a center of medical research in Australia. As with the Medical University of Vienna, the Nagoya University Graduate School of Medicine was able to establish a relationship with the University of Adelaide thanks to inter-student exchanges and was able to turn it into an inter-research exchange by holding the international symposium.

The purpose of international symposiums is to establish collaborative relationship in studies with affiliated schools of medicine based on an understanding of each other's research strengths. If the purpose is achieved, it will enable us to show the world that the Nagoya University Graduate School of Medicine has an international research base.

We have also been requested by an affiliated school in Germany, the Albert Ludwigs-University Freiburg, School of Medicine to organize an international symposium. We are considering holding such symposiums here on the Tsurumai Campus in the future. We intend to publicize these efforts on our website to stimulate interest in important cross-border endeavors and, at the same time, to motivate students toward research activities, and thus help develop outstanding human resources who can engage in medical research. We are committed to continuing these efforts to grow as a research-intensive university.



(SAHMRI)

SAHMRI, SOUTH AUSTRALIA

Woods Bagot's Adelaide, Melbourne and New York studios are working with the South Australian Government to establish a research institute in Adelaide.

South Australian Health and Medical Research Institute (SAHMRI) will ensure South Australia's strong position in health and medical research well into the future.



[Watch video: interview with Thomas Masullo](#)

The AUD 200 million flagship research facility will house the SAHMRI headquarters and is being built alongside the New Royal Adelaide Hospital (NRAH). The SAHMRI site encompasses 5,893m² in total area.

“Office of International Affairs”

KASUYA, Hideki, Associate Professor in charge of special education for foreign students, Graduate School of Medicine
Director, Office of International Affairs

As it has become so easy to gain information via the internet, there is an increasing demand for the internationalization of education in universities and research/medical fields. The position in the world ranking of universities is also becoming more important, and so university education and medicine must gain international acceptance, not just in Japan. As this tendency is likely to accelerate, the Nagoya University School of Medicine and Graduate School of Medicine restructured the former Office of International Affairs and launched a new system, the Office of International Affairs, in May 2013. Supervised by the Director, the Office of International Affairs comprises two teachers including a G30 foreign teacher and related administrative offices. It handles international affairs for the School of Medicine including the School of Health Sciences, Graduate School of Medicine, Nagoya University Hospital, and other related facilities. Most of the universities abroad with which we have academic/student exchange agreements have university hospitals and research facilities attached to the schools of medicine. Therefore, the Office of International Affairs must achieve well-balanced internationalization with a broad scope that covers not only the School of Medicine and Graduate School of Medicine but also the University Hospital and research facilities. At present we are affiliated with China-Japan Friendship Hospital and Seoul National University Hospital and also actively exchange information with Asan Hospital and Sirindhorn Hospital mainly between the departments of nursing and administrative departments.

We also have an agreement with Hue University College of Medicine and Pharmacy and undertake technical collaboration on endoscopes mainly be-



A scene of signing an agreement with National Taiwan University College of Medicine

tween the departments of gastrointestinal medicine. We expect that online meetings will play a vital role in the exchange of medical information and the collaboration on medical technology with ASEAN countries. Additionally, since the MHLW is now actively encouraging foreign physicians to gain training in Japanese hospitals and to obtain a Japanese medical license, we must create the structure for the advanced clinical training system and national examination for foreign medical practitioners. The School of Health Sciences has an agreement on academic/student exchange with Yonsei University, Shanghai Jiao Tong University, and National University of Singapore, by which they have enjoyed vital academic/information/student exchanges, making visits to each other's facilities. For the School of Medicine and Graduate School of Medicine, we have affiliation agreements with 16 schools—mainly the leading schools in the U.S./Europe—by which 16 students, i.e. nearly 20% of all 6th grade students, underwent the 3-month clinical training in schools of medicine abroad in the 2013 school year. This clinical training is an outstanding feature of Nagoya University as it is recognized as part of the normal clinical training; no other school of medicine in Japan offers clinical practice for 3 months for approximately 20% of its 6th grade students. This overseas study program includes preliminary training in English and many students are keen to enter Nagoya University because of this overseas study program.

Regarding education in universities abroad, with the accelerating globalization of society and economy and the increasing international flexibility in university education, they too are actively introduc-



A scene of signing an agreement with Seoul National University

ing programs for foreign students in the U.S./Europe, such as ERASMUS (The European Community Action Scheme for the Mobility of University Students), and arranging cross-border education within Europe. In Asia too, cross-border inter-university collaborative activities will flourish, leading to more exchanges of foreign students among universities and increasing collaboration in both education and research. To be a vital part of these international interdisciplinary networks, it is important for Japanese universities not only to strengthen their own international competitiveness but also to contribute to society through education and research.

Nagoya University, under the leadership of the President, Dr. Michinari Hamaguchi, has designed the “Hamaguchi Plan” with the catchphrase, “From Nagoya Daigaku to Nagoya University”, and is steadily internationalizing the university. At present, there are a total of 2,536 foreigners in the entire university—1,611 foreign students and 925 researchers from 97 countries—compared with the university’s total number of undergraduates and graduate students of 16,523, and this proportion of foreign students is increasing. In the School of Medicine and Graduate School of Medicine, a total of 112 students (78 graduate students, 12 students on Young Leaders’ Program [YLP], 8 researchers, 2 undergraduates [School of Health Sciences], and 12 short-term annual students on the Nagoya Univer-



An affiliated school (Duke University)

sity Program for Academic Exchange [NUPACE], etc.) have been enrolled.

To provide a vital boost to the Japanese economy, universities must foster internationalized individuals who can handle the globalization of society, and must increase the proportion of foreign students and students who have experience of studying abroad. In the future, with the rapidly declining birthrate in Japan, universities will play an increasingly important role in internationalization as a national scheme to maintain economic growth. While many programs that need urgent coordination involving universities, such as the Academic Consortium 21 (AC21), the 300,000 Foreign Students Plan, the China 5000 Students Program, the Global 30 Project and so forth, are being designed one after another, the School of Medicine and Graduate School of Medicine have been asked to deepen the traditional approach focusing on the U.S. and Europe, while exploring new directions for the Asian economy, and to develop cooperative relationships with leading schools in foreign countries in the field of research and technological development. The Office of International Affairs intends to meet the urgent demand from society for internationalization by globalizing the School of Medicine and Graduate School of Medicine.



A picture from the study-abroad program

“Academic Exchange with Yonsei University”

SAKAKIBARA, Hisataka
Head, School of Health Sciences
Director, Department of Integrated Health Sciences

In 2010, the Nagoya University Graduate School of Medicine (Health Sciences) commenced a research exchange with the health sciences/nursing departments of Yonsei University, a prestigious private university with a long and impressive history, at the level of the Graduate School of Medicine. Yonsei University is known for owning Severance Hospital, a modern hospital with over 2000 beds, in Seoul. We launched this research exchange with the Department of Radiological Science, Department of Biomedical Engineering, Department of Physical Therapy, and Department of Occupational Therapy of the College of Health Sciences (School of Health Sciences) and the Nursing School of Wonju College of Medicine (School of Medicine), all located on the Wonju campus. An agreement was signed between Nagoya University and Yonsei University in 2008.

Results of the 3-year Exchange

The exchange was initiated at the proposal of Nagoya University, and the first Nagoya-Yonsei University Research Exchange Meeting was held on the Daiko Campus in November 2010 hosted by Nagoya University. Including the Vice President, 19 participants comprised of teachers and graduate students attended the meeting from Yonsei University while 200 teachers/graduate students participated from Nagoya University. After a general meeting in the morning including greetings and keynote reports, a research exchange was held focusing on the presentations given by the teachers

and graduate students in five sectional meetings (nursing, radiology technology, medical technology, physical therapy, and occupational therapy) per department in the afternoon. Social gatherings were then held at each department for further exchanges. The second exchange meeting was held at Yonsei University in 2011, which was attended by 41 teachers/graduate students from Nagoya University and proved most useful. In 2011, we also began to visit each other's research laboratories and accepted a total of five graduate students—one student from each department—in Nagoya University to introduce the studies conducted at the research laboratories. The third exchange meeting was held in the 2012 school year, in which 32 attendees—5 teachers and 27 graduate students—participated from Yonsei University and research presentations on 53 topics were given by graduate students; we also sent 10 graduate students from Nagoya University to Yonsei University to visit their research laboratories. The mutual relationship is growing stronger as we commence the third year of our association.

Objectives of the Program and Its Features

The objectives of the program are to enhance international exchange through research presentations at exchange meetings. The program also aims to improve the graduate students' motivation toward research by broadening their international outlook, and to create opportunities for the exchange of human resources, joint research, and studying abroad



Group photograph from the 3rd Nagoya-Yonsei University Research Exchange Meeting in 2012 (held at Nagoya University)

through the mutual visits by graduate students to the research laboratories at each other's university in order to deepen the international exchange of research.

This program is an initiative covering all departments related to health sciences/nursing of both universities. By offering a joint opportunity for the graduate students to make presentations, they gain a similar experience to an international academic conference, where participants must give presentations and Q&A sessions in English; this has improved their motivation toward international exchange. Additionally, we hold social gatherings at each department after the research presentations and this helps build human ties between the two universities. Since these gatherings are attended not only by graduate students but also teachers, they effectively enhance international linkages for the entire department.

International Exchange of Undergraduates for Clinical Nursing Training

Prompted by the research exchange with Yonsei University, we discussed setting up an exchange of undergraduates for the nursing departments, as a result of which the mutual exchange of undergraduate clinical nursing trainees was initiated in 2011. In the same year, we sent four undergraduates to Yonsei University, from which we also accepted four trainees for training at Nagoya University Hospital and so forth. The Department of Nursing also

signed a memorandum on exchange with the College of Nursing of the Shanghai Jiao Tong University School of Medicine, by which we accepted two trainees. We also accepted two students for training from the University of the Philippines in Manila and sent four trainees from Nagoya University. The students are active in this international exchange, and have set up their own organization to accept foreign students, prepared and presented slides to introduce life at Nagoya University, and are keen to plan and organize welcome parties and so forth, demonstrating the success of this international exchange. We also signed an exchange agreement with the Department of Nursing of Yong Loo Lin School of Medicine at the National University of Singapore in 2012, with the exchange due to start in the 2013 school year.

Conclusion

It seems likely that not only the students who were sent abroad but also those who do not visit foreign countries are equally stimulated to develop an international outlook by meeting the foreign students whom we accepted thanks to the positive attitude of the foreign students, communication in English, and so forth. We intend to extend the international exchange program to cover both education and research. Incidentally, since the 2011 school year, this program has been carried out under the auspices of the Student Exchange Support Program by MEC-SST.



A scene from an exchange meeting



A scene from a tour of Nagoya University Hospital

“Extended Operation and Restructuring of Center for Neurological Diseases and Cancer”

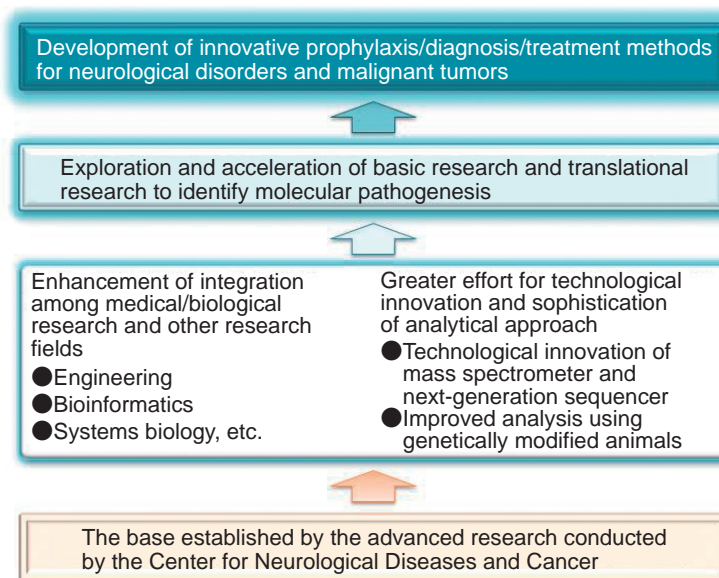
TAKAHASHI, Takashi
 Professor, Division of Molecular Carcinogenesis
 Graduate School of Medicine
 Director, Center for Neurological Diseases and Cancer

The Center for Neurological Diseases and Cancer of the Nagoya University Graduate School of Medicine was founded in 2003 to focus on two fields of medical research: neurological disorders including neurodegenerative disease for which there is no effective treatment, and malignant tumors which are the leading cause of death in developed countries including Japan. The goal was to establish an international research base for foundation research and development of the latest medicines. One of the predecessors of the Center is a bioregulatory research facility of Nagoya University established in 1983, where they were, under a system of broad-ranging interdisciplinary research, trying to identify a pathogenic mechanism of refractory infections and malignant tumors and to prevent and control the diseases. Meanwhile, at the Graduate School of Medicine—as the Center of Excellence (COE) program, “Molecular Medicine in Neurodegenerative Disorders and Malignant Tumors”, which was launched by the MECSST in the school year 1998—they were conducting research aiming to identify the pathogenesis of neurodegenerative diseases and malignant tumors and had built a solid reputation both inside and outside the university. The Center for Neurological Diseases and Cancer was estab-

lished by integrating the bioregulatory research facility, which had made outstanding achievements in research on clarifying the pathogenesis of these diseases, with research groups conducting advanced research under the COE program.

The Center has conducted sophisticated research on molecular medicine, ranging from basic research to elucidate the pathogenesis of neurological disorders and malignant tumors, to translational research on innovative methods for diagnosis and treatment. Ever since the Center was founded in 2003, we have carried out combined research that incorporates progress in medicine and biology from a broad perspective without adhering to the traditional scope of medical research within specific fields, and have produced distinguished results. During the most recent 5 years from 2008 through 2012, we published more than 350 original papers in international journals including Nature Genetics, Cancer Cell, Nature Cell Biology, Journal of Clinical Oncology, Journal of Clinical Investigation, Development Cell, Neuron, Genes & Development, Proceedings of the National Academy of Sciences USA, EMBO Journal, and Journal of Cell Biology. In addition, for those studies that require a large research budget of over ¥10 million per year—such as Stra-

Fig. 1 Research Conducted at the Center for Neurological Diseases and Cancer

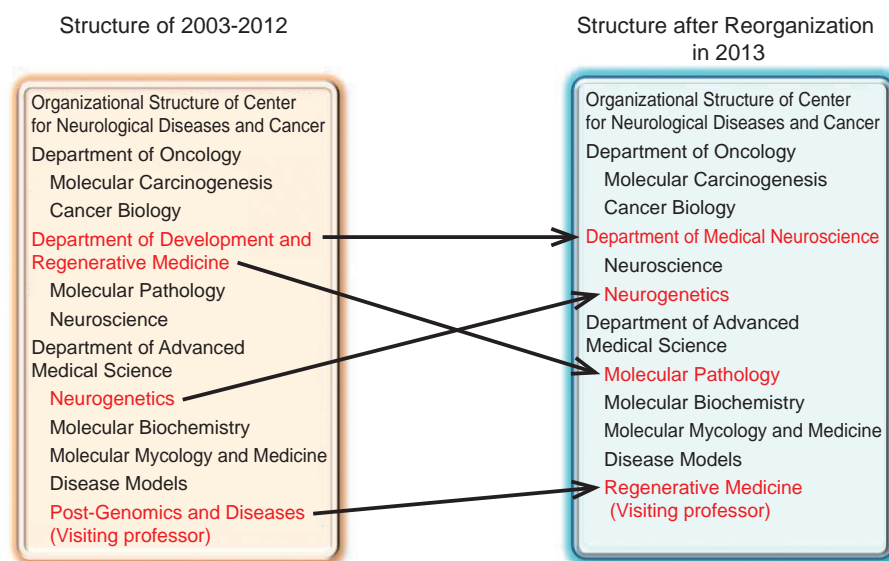


tegic Research Program for Brain Sciences, Project for Development of Innovative Research on Cancer Therapeutics, Strategic Basic Research Programs (Core Research for Evolutional Science and Technology (CREST)), Scientific Research on Innovative Areas, Scientific Research (S) and (A), Human Frontier Science Program (HFSP), Research on Measures for Intractable Diseases, and The 3rd-term Comprehensive 10-year Strategy for Cancer Control—we have obtained a research budget amounting to \200–500 million annually.

When the Graduate School of Medicine was conducting the 21st Century COE program, “Integrated Molecular Medicine for Neuronal and Neoplastic Disorders” (school years 2003-2007) followed by the global COE program, “Integrated Functional Molecular Medicine for Neuronal and Neoplastic Disorders” (school years 2008-2012), the Center not only played a core role but also steadily contributed to education at the graduate school by supervising 46 students in the master course and 92 students in the doctoral course (including 46 graduate students in the doctoral course who had been sent from the clinical course to obtain a PhD degree) during the 5 years from 2008 through 2012.

Thus, the Center had achieved solid results by the time the initial period expired, and in view of its high reputation, the program was extended to 2018. At this point, we unified the departments which had focused on research in neurological disorders and malignant tumors into the Department of Neuroscience (two divisions) and Department of Oncology (two divisions), and added the Department of Advanced Medical Science (four divisions + one division taught by a visiting professor), which conducts advanced medical research covering the other two departments, to create a structure consisting of three departments and nine divisions. This restructuring highlights the fact that the Center is a research institute specializing in neurological disorders and malignant tumors, encompassing basic research through clinical applied research, and the characteristics of each research department are clearly visible inside and outside the university. In the future, with Nagoya University already renowned as a world-leading center of medical research related to neurological disorders and malignant tumors, we will conduct even more innovative research to solidify our international position and develop the next generation of medical scientists.

Fig. 2 Organizational Structure of Center for Neurological Diseases and Cancer before and after the Reorganization



“Brain and Mind Research Center”

WAKABAYASHI, Toshihiko

Professor, Neurosurgery, Graduate School of Medicine

Chairman, Executive Committee of “Brain and Mind Research Center”

The rates of occurrence of brain diseases (dementia, Parkinson’s disease, stroke, epilepsy, brain tumor and so forth) and mind diseases (depression, schizophrenia, developmental disorders and so forth) are all high, and yet no essential prophylaxis has been found. This leads to serious social losses such as suicides and long-term difficulties in studying at school or working. Meanwhile, it is also extremely important to expedite research on the brain and mind in healthy individuals to identify the mechanism of growth and ageing of the brain and mind, and thus enable us to improve the quality of life and prevent diseases. However, it is not easy to elucidate the mechanism of the functions of the brain, which is the most advanced and complicated organ in the human body. Therefore, perhaps the most significant and difficult challenge of the 21st century is to clarify the activity of the brain and mind to overcome those diseases. Recent developments in diagnostic imaging have visualized the activities and condition of the brain and mind, suggesting that future developments in technology will help reveal the mechanism in this field and thus conquer the diseases.

The academic fields applied to the brain and mind are not confined to medicine but extend broadly to education, the environment, drug discovery, engineering and others. However, there had been no core research center covering these fields to create a large cohort and expedite interdisciplin-

ary research by organizing and integrating a consortium of researchers from diverse disciplines. Thus, we established the Brain and Mind Research Center at the Nagoya University Graduate School of Medicine as of October 1, 2010. This institute unifies studies on the brain and mind as well as research of brain sciences relevant to learning and brain-machine interfaces by utilizing the latest imaging equipment such as computed tomography (CT), magnetic resonance imaging (MRI), magnetoencephalography (MEG), near-infrared spectroscopy (NIRS), positron emission tomography (PET), and single photon emission computed tomography (SPECT) as well as molecular imaging, which analyzes the brain functions at the molecular level, in addition to diverse equipment for ‘omics’ analysis.

In the Center, we designed three research cores: 1) clarification of pathology of the brain/mind diseases, and development of next-generation innovative drug discovery, 2) clarification of the mechanism of development/ageing of the brain and mind, and novel drug discovery based thereon, and 3) development of measures for improved QOL based on the latest brain medicine/neuroscience. Each core utilizes, with consideration of ethics, information and bio-resources obtained from the three cohorts of development, disease and ageing, by which the integrated identification of brain/mind diseases is enhanced. Based on this foundation, we are undertaking the following strategic initiatives to clarify the pathology and develop next-generation drugs.

1) Core of clarification of pathology of the diseases of the brain and mind, and development of next-generation innovative drugs

For the diseases of the brain and mind including dementia, Parkinson’s disease, stroke, epilepsy, brain tumor, depression, schizophrenia, and developmental disorders, we will accumulate various data such as brain images, molecular imaging, omics (genomes, blood, spinal fluid, and tissues), and dead brain along with clinical information on a large scale and prospectively



Graduate School of Medicine, Graduate School of Environmental Studies, Graduate School of Education and Human Development, Eco Topia Science Institute, Research Institute of Environmental Medicine, Graduate School of Pharmaceutical Sciences

to build a cohort of 500-1000 subjects. Based on the data, the intra-cerebral function networks and pathology of the brain/mind diseases will be investigated. Additionally, by optimizing the consortium research and cohort study, the Graduate School of Medicine, the associated research institutes/companies, the Graduate School of Pharmaceutical Sciences and others will develop next-generation drugs based on ideas (candidate drug molecules) obtained from preclinical research such as animal tests.

2) Core of clarification of the mechanism of development/ageing of the brain and mind, and novel drug discovery based thereon

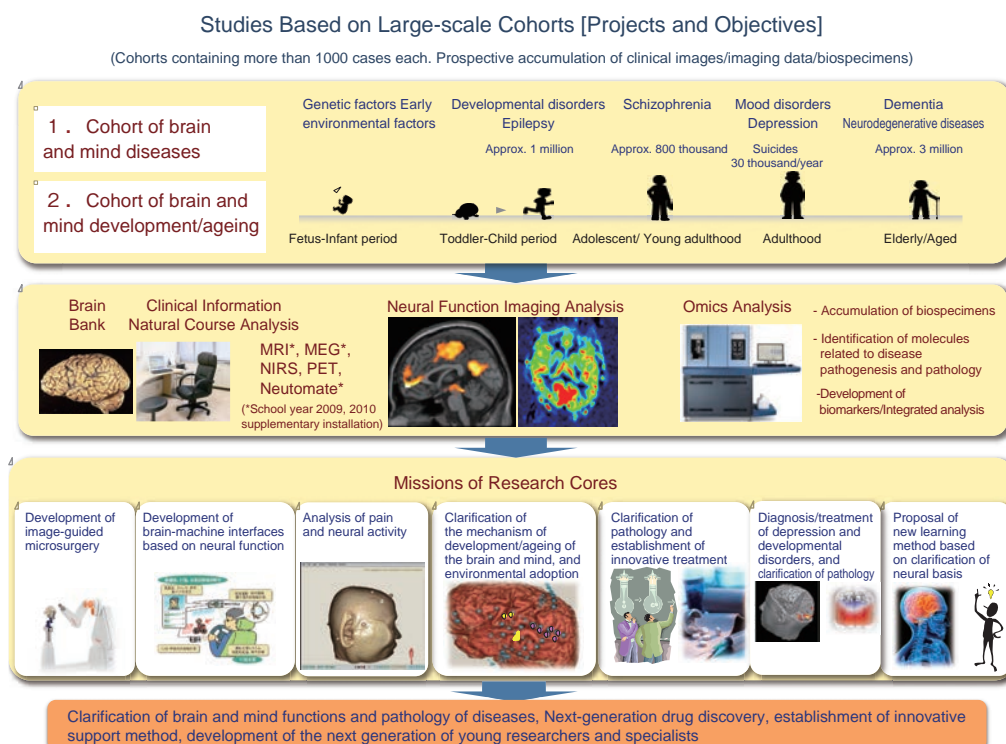
Large quantities of prospective data on the brain structure and functions in healthy individuals of each generation from childhood to senescence are being jointly accumulated by multiple institutes including the Graduate School of Medicine, Graduate School of Environmental Studies, Graduate School of Education and Human Development, and Eco Topia Science Institute along with information on cognitive function, mood, sociality, life environment, somatic functions and so forth. We will examine the processes of growth and ageing of the brain and the seamlessness or differences between diseases of the brain and mind under close cooperation with

the “core of clarification of pathology of the diseases of the brain and mind, and development of next-generation innovative drugs”. This will help identify the mechanism of brain diseases associated with developmental disorders or ageing and lead to the promotion of development, novel drug discovery related to the prevention/treatment for ageing or interventional treatment.

3) Core of development of measures for improved QOL based on the latest brain medicine and neuroscience

By utilizing “Neuromate”, a navigation system known for sub-millimeter accuracy, we will develop the next generation of microsurgery using ultra-high-quality images obtained from intraoperative MRI data. To operate this system, a training center will be set up for the first time in Asia. For the participants in the cohort, we will use this system to regenerate neural functions lost due to brain diseases and help the participants return to society. Furthermore, to improve QOL, we develop technologies to visualize and assess decreased cognitive function due to brain and mind diseases and changes in automobile driving ability associated with sleepiness properly by brain imaging.

While carrying out our own research, the Brain and Mind Research Center also provides support to facilitate individual studies in each department. By enhancing joint research among departments, we decide and control the standards of the data and images used in the cohort study and consortium research, and have created a system to enable each research core to share information. In addition, we will provide education for young researchers including students and graduate students who will lead research in this field in the future.



History

-
- 1871 Temporary public hospital established at the School of Medicine on the site of the former Nagoya Domain conference chamber (now 3-1 Marunouchi, Naka-ku) (closed 1872). A temporary medical school was set up at Motomachi town office (closed in 1872).
-
- 1872 After the domain's abolition, the hospital resumed operating as an alms clinic supported by contributions from donors (closed February 1873).
-
- 1873 Resumed operating as a temporary hospital (Nishihonganji-Betsuin, now 1 Monzen-cho, Naka-ku) with contributions from residents of the prefecture.
-
- 1873 Established Medical Training School as Alms Clinic.
-
- 1875 Renamed Aichi Prefecture Hospital.
-
- 1876 Renamed Public Medical Training School and Public Hospital.
-
- 1876 Renamed Public Medical School.
-
- 1877 Relocated to Tennozaki-cho (now 1-17 and 1-18 Sakae, Naka-ku) (opening ceremony for the hospital was held on July 1).
-
- 1878 Renamed Public Medical School.
-
- 1881 Renamed Aichi Medical School and Aichi Hospital.
-
- 1901 Renamed Aichi Prefectural Medical School.
-
- 1903 Designated as the Aichi Prefectural Medical College.
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- 1914 Relocated to a new building constructed in Tsurumai-cho, Naka-ku (now Showa-ku).
-
- 1920 Established Aichi Medical College.
-
- 1922 Renamed Aichi Medical College Hospital.
-
- 1924 Renamed Aichi Medical College Clinic.
-
- 1931 Nationalized and renamed Nagoya Medical College and Nagoya Medical College Clinic.
-
- 1939 Nagoya Imperial University School of Medicine opened. Renamed Nagoya Imperial University School of Medicine Hospital.
-
- 1939 Established Nagoya Imperial Temporary Medical College (abolished in 1949).
-
- 1943 Established Research Institute of Aeromedical Medicine (abolished in 1946).
-
- 1944 Renamed to Nagoya Imperial University Medical College.
-
- 1944 Branch hospital of Nagoya Imperial University School of Medicine Hospital established (merged with Nagoya University Hospital in 1996).
-
- 1946 Established Research Institute of Environmental Medicine.
-
- 1947 Renamed to Nagoya University School of Medicine and Nagoya University Hospital.
-
- 1947 Renamed Nagoya University Medical College Clinic (abolished in 1950).
-
- 1949 University reorganized as Nagoya University under the new educational system. Clinic renamed Nagoya University Hospital.
-
- 1951 School of Nursing of Medicine was established at the School of Medicine (abolished in 1980).
-

-
- 1955 School of X-ray Technology School was established at the School of Medicine.
-
- 1959 School of Midwifery was established at the School of Medicine (abolished in 1981).
-
- 1959 Research Institute of Germfree Life was established at the School of Medicine (reorganized in 1983).
-
- 1961 School of Medical Technology was established at the School of Medicine.
-
- 1962 Cancer Research Institute was established at the School of Medicine (reorganized in 1983).
-
- 1965 Research Institute of Medical Mycology was established at the School of Medicine (reorganized in 1983).
-
- 1966 Graduate Course of School of X-ray Technology was established at the School of Medicine.
-
- 1969 School of X-ray Technology was renamed School of Radiological Technology at the School of Medicine (abolished in 1982).
-
- 1972 Renamed School of Medical Laboratory Technology at the School of Medicine (abolished in 1981).
-
- 1977 College of Medical Technology was established (abolished in 2001).
-
- 1983 Research Institute for Disease Mechanism and Control was established at the School of Medicine (reorganized in 2003).
-
- 1986 Institute for Laboratory of Animal Research was established at the school of Medicine (reorganized in 2004).
-
- 1996 Nagoya University Branch Hospital was unified with Main Hospital.
-
- 1996 Nagoya University Daiko Medical Center (medical clinic) was established (abolished in 2011).
-
- 1997 Established Nagoya University School of Health Sciences.
-
- 2000 Accomplishment of Prioritization of Graduate School.
-
- 2001 Master's Course Program in Medical Science was established.
-
- 2001 Affiliation of Research Institute for Disease Mechanism and Control and Institute for Laboratory of Animal Research were transferred to the Graduate School of Medicine from the School of Medicine.
-
- 2002 Renamed Graduate School of Medicine. Master's Course Program in Nursing, Program in Radiological and Medical Laboratory Sciences and Program in Physical and Occupational Therapy were established at the Graduate School of Medicine.
-
- 2003 Center for Neurological Diseases and Cancer was established at the Graduate School of Medicine.
-
- 2003 Master's Course Program in Medical Science and Healthcare Administration was established at the Graduate School of Medicine.
-
- 2004 Doctor of Medical Science and Doctor's Course Program in Nursing, Program in Radiological and Medical Laboratory Sciences, Program in Physical and Occupational Therapy constituted Graduate School of Medicine.
-
- 2004 Center for Research of Laboratory Animals and Medical Research Engineering was established at the Graduate School of Medicine.
-
- 2005 Center for Medical Education was established at the School of Medicine.
-
- 2010 Center for Advanced Medicine and Clinical Research was established in Nagoya University Hospital.
-
- 2011 Brain and Mind Research Center was established.
-
- 2012 Curriculum of School of Medicine School of Health Sciences shifted to the department system.
-
- 2013 Nagoya University Clinical Simulation Center (NU-CSC) was established at the Graduate School of Medicine.
-

Past deans

TAMURA, Harukichi	April 1, 1939 – January 31, 1946
TAMURA, Harukichi	January 31, 1946 – February 9, 1946*
TOGARI, Chikataro	February 9, 1946 – February 9, 1952
KUNO, Yasu	February 9, 1952 – March 31, 1954
TOGARI, Chikataro	April 1, 1954 – March 31, 1958
YAMADA, Kazumaro	April 1, 1958 – March 31, 1960
MURAMATSU, Tsuneo	April 1, 1960 – March 31, 1962
KANDA, Zengo	April 1, 1962 – March 31, 1964
HASHIMOTO, Yoshio	April 1, 1964 – March 31, 1966
OGASAWARA, Kazuo	April 1, 1966 – October 20, 1967
KOJIMA, Koku	October 20, 1967 – March 31, 1969*
TAKAGI, Kentaro	April 1, 1969 – April 1, 1972*
ISHIZUKA, Naotaka	April 1, 1972 – March 31, 1974
TAUCHI, Hisashi	April 1, 1974 – March 31, 1976
KATOH, Nobuo	April 1, 1976 – March 31, 1978
SOBUE, Itsuro	April 1, 1978 – March 31, 1980
IIJIMA, Soichi	April 1, 1980 – July 21, 1981
KATOH, Nobuo	July 22, 1981 – July 21, 1985
SAKUMA, Sadayuki	July 22, 1985 – July 21, 1987
AOKI, Kunio	July 22, 1987 – July 21, 1989
NAGATSU, Toshiharu	July 22, 1989 – July 21, 1991
SAITOH, Hidehiko	July 22, 1991 – July 21, 1995
AWAYA, Shinobu	July 22, 1995 – March 31, 1997
NAKASHIMA, Izumi	April 1, 1997 – March 31, 1999
KATSUMATA, Yoshinao	April 1, 1999 – March 31, 2003
SUGIURA, Yasuo	April 1, 2003 – March 31, 2005
HAMAGUCHI, Michinari	April 1, 2005 – March 31, 2009
SOBUE, Gen	April 1, 2009 – March 31, 2012
TAKAHASHI, Masahide	April 1, 2012 –

*by clerical reasons

Education/ research organization

Sharing two campuses in the Tsurumai area in Showa-ku and in the Daiko area in Higashi-ku, the Nagoya University School of Medicine and Graduate School of Medicine have been successfully developing as centers of medical research and medical services.

With three core elements of Education, Research, and Treatment, the schools' broad organization, including its hospital, established a shared goal of contributing to the health and happiness of humankind and pursuing advanced domains specializing in each organizational component's area of expertise. The following pages provide an outline of the parts of the organization that take charge of Education and Research.

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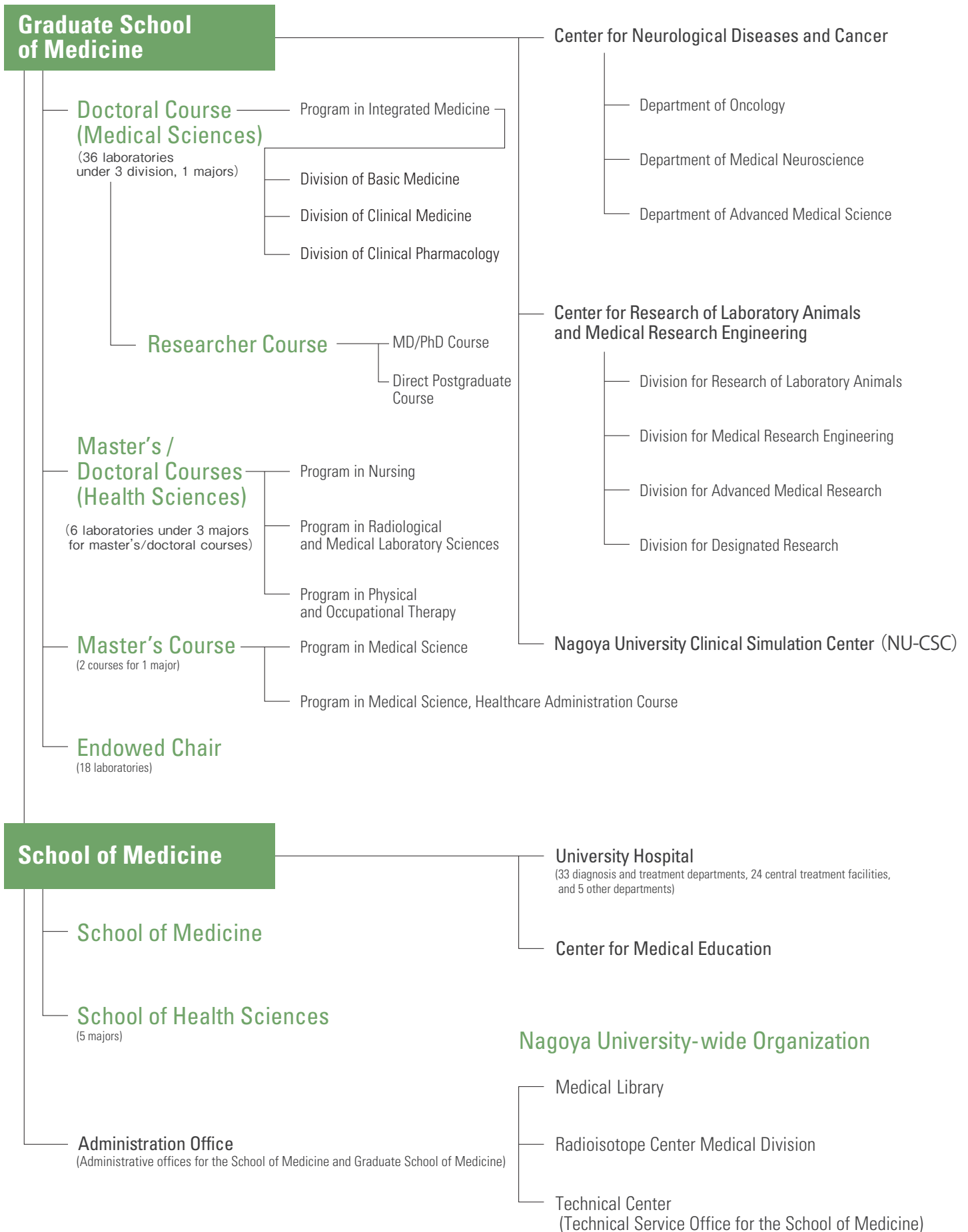
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Organizational chart



Executives

Graduate School of Medicine

Dean of Graduate School of Medicine	TAKAHASHI, Masahide (Professor)*
Vice-Dean for Medical Education	FUJIMOTO, Toyoshi (Professor)*
Vice-Dean for Graduate School Affairs and Ethics	OHNO, Kinji (Professor)
Vice-Dean for Evaluation	WAKABAYASHI, Toshihiko (Professor)
Vice-Dean for Facilities and Drug discovery	KADOMATSU, Kenji (Professor)
Vice-Dean for Research and Financial Affairs	HASEGAWA, Yoshinori (Professor)
Vice-Dean for Personnel Affairs and Labor	KIKKAWA, Fumitaka (Professor)

School of Medicine

Dean of School of Medicine	TAKAHASHI, Masahide (Professor)*
Head of School of Medicine	TAKAHASHI, Masahide (Professor)*
Director of University Hospital	ISHIGURO, Naoki (Professor)*
Head of School of Health Sciences	SAKAKIBARA, Hisataka (Professor)

Other facilities

Director of Center for Neurological Diseases and Cancer	TAKAHASHI, Takashi (Professor)
Director of Center for Research of Laboratory Animals and Medical Research Engineering	KADOMATSU, Kenji (Professor)
Director of Nagoya University Medical Library	HAMAJIMA, Nobuyuki (Professor)
Director of Radioisotope Center Medical Division	ISOBE, Kenichi (Professor)

Administrative Offices

Administrative Director	SHIOZAKI, Eiji
Vice Administrative Director	TAKASHITA, Kazuma
Director, General Affairs Division	SOTANI, Yuuichi
Supervisor of Personnel Affairs and Labor	TSUBOI, Tadashi
Director, Student Affairs Division	OWAKI, Kineo
Director, Management Planning Division	YASUDA, Hiroaki
Director, Accounting Division	DOUMAE, Hiroki
Supervisor of Facilities Management	SANO, Tatsuaki
Director, Medical Affairs Division	NAKAI, Seiichi
Director, Medical Services Support Division	TAKEUCHI, Shouji
Director, General Administration Division, Daiko Campus	YAMASHITA, Keiji

* Professors marked with an asterisk are members of the Nagoya University Education and Research Council

Tsurumai Campus

Graduate School of Medicine

Doctoral Course (Medical Sciences) / Master's Course

School of Medicine

School of Medicine

Located next to Tsuruma Park in Showa-ku, Nagoya city, the Doctoral Course (Medical Sciences), the Master's Course, the School of Medicine programs and associated facilities are concentrated on the Nagoya University Tsurumai Campus. The School of Medicine carries out quality education and research in close collaboration with the hospital popularly known as “Meidai Hospital” among area citizens.

Graduate School of Medicine

Doctoral Course (Medical Sciences)

Master's Course

Established in 1955, the Nagoya University Graduate School of Medicine has been consistently engaged in education and research on academic theory and the application of medicine while training academic researchers and professional technicians with advanced skills. In an effort to respond to today's highly advanced and diverse medical studies and establish a comprehensive and open research environment, the School of Medicine reorganized its educational system into four majors. This reorganization took three years, and was completed in the year 2000. Today's system was created by enhancing the Center for Neurological Diseases and Cancer, which actively pursues cutting-edge research, the Center for Research of Laboratory Animals and Medical Research Engineering, Master's Course. In 2013, as the departments related to clinical pharmacology were established, the four programs were integrated into one program, in which the Division of Basic Medicine, Division of Clinical Medicine, and Division of Clinical Pharmacology were established for the purpose of integrated education and research, thus forming the current structure. Graduate and undergraduate educational programs are provided concurrently with research in each major program.

School of Medicine

School of Medicine

In line with the university mission, including “fostering medical researchers and medical professionals who respect medical ethics, and take pride in contributing to the welfare of mankind,” the Graduate School of Medicine provides a six-year integrated education, including a special curriculum to address the future international activities of the students. Studies at the Nagoya University Graduate School of Medicine are implemented in a broad, comprehensive, and cross-disciplinary manner covering various areas of medicine.

Tsurumai Campus

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Program in Integrated Medicine

Maximum enrollment
161

To enhance education for graduate students, a single program that organically integrates basic medicine, clinical medicine, and clinical pharmacology is offered in which different research fields flexibly collaborate with each other.

● Division of Basic Medicine

Field	Department	Professor in charge	
Biological Chemistry	Molecular Biology	KADOMATSU, Kenji	
	Biomacromolecules		
	Molecular and Cellular Biology	(FURUKAWA, Koichi)	
Microbiology and Immunology	Modecular Bacteriology	ARAKAWA, Yoshichika	
	Bacterial Drug Resistance		
	Immunology	ISOBE, Kenichi	
	Cellular Immunology		
	Molecular Virology	KIMURA, Hiroshi	
Advanced Medical Science (Cooperating field)	Molecular Biochemistry	Center for Neurological Diseases and Cancer	FURUKAWA, Koichi
	Molecular Mycology and Medicine	Department of Advanced Medical Science	
	Neurogenetics	Center for Neurological Diseases and Cancer Department of Medical Neuroscience	OHNO, Kinji
	Disease Models	Center for Neurological Diseases and Cancer Department of Advanced Medical Science	
	Bioinformatics Analysis		HONDA, Hiroyuki
	Nanoengineered Molecular Diagnosis	Graduate School of Engineering	BABA, Yoshinobu
	Laboratory Animal Science (Cooperating field)	Laboratory Animal Science	Center for Research of Laboratory Animals and Medical Research Engineering Division for Research of Laboratory Animals
Aging Research (Partnership field)	Aging Research	Research Institute, National Center for Geriatrics and Gerontology	MARUYAMA, Mitsuo
			YANAGISAWA, Katsuhiko
AIDS Research (Partnership field)	AIDS Research	National Hospital Organization Nagoya Medical Center	SUGIURA, Wataru
Cell Science	Cell Physiology and Biophysics		
	Bio-Imaging		
	Cell Physiology		KUBA, Hiroshi
	Cell Pharmacology		
	Molecular Pharmacology		(KAIBUCHI, Kozo)
Neuroscience (Cooperating field)	Neuroscience	Center for Neurological Diseases and Cancer Department of Medical Neuroscience	KAIBUCHI, Kozo
Oncology (Cooperating field)	Molecular Carcinogenesis	Center for Neurological Diseases and Cancer	TAKAHASHI, Takashi
	Cancer Biology	Department of Oncology	

Field	Department	Professor in charge
Higher Nervous Control (Cooperating field)	Visual Neuroscience	Research Institute of Environmental Medicine
	Neuroimmunology	
Regulation of Organ Function (Cooperating field)	Neural Regulation	Research Institute of Environmental Medicine
	Cardiovascular Research	
Molecular and Cellular Adaptation (Cooperating field)	Genetics	Research Institute of Environmental Medicine
	Neuroscience and Pathobiology	
Neurochemistry (Partnership field)	Neurochemistry	Institute for Developmental Research, Aichi Human Service Center
Anatomy and Cell Biology	Molecular Cell Biology	FUJIMOTO, Toyoshi
	Functional Anatomy and Neuroscience	KIYAMA, Hiroshi
	Cell Biology	MIYATA, Takaki
	Ultrastructural Morphology	
Pathology	Pathology and Biological Responses	TOYOKUNI, Shinya
	Molecular Diagnosis	
	Tumor Pathology	(TAKAHASHI, Masahide)
	Neuropathology	
Development (Cooperating field)	Molecular Pathology	Center for Neurological Diseases and Cancer Department of Advanced Medical Science
Cancer Genetics (Partnership field)	Cancer Genetics	Aichi Cancer Center Research Institute
	Cellular Oncology	
Social Life Science	Legal Medicine and Bioethics	ISHII, Akira
	Occupational and Environmental Health	KATO, Masashi
	Preventive Medicine	
	Public Health and Health Systems	AOYAMA, Atsuko
	Healthcare Administration	HAMAJIMA, Nobuyuki
Health Promotion Medicine (Cooperating field)	Human Nutrition	Research Center of Health, Physical Fitness and Sports
	Sports Medicine	
	Psychopathology and Psychotherapy	
Epidemiology (Partnership field)	Epidemiology	Aichi Cancer Center Research Institute

● Division of Clinical Medicine

Field	Department	Professor in charge
Internal Medicine	Hematology and Oncology	
	Cardiology	MUROHARA, Toyoaki
	Gastroenterology and Hepatology	GOTO, Hidemi
	Respiratory Medicine	HASEGAWA, Yoshinori
	Endocrinology and Diabetes	OISO, Yutaka
	Nephrology	MATSUO, Seiichi
High-Technology Application of Medicine	Radiology	NAGANAWA, Shinji
	Interventional & Therapeutic Radiology	
	Radiation Oncology	
	Pathology and Laboratory Medicine	NAKAMURA, Shigeo
	Diagnostic Pathology	
	Clinical Oncology and Chemotherapy	(ANDO, Yuichi)
Clinical Neurosciences	Neurology	SOBUE, Gen
	Psychiatry	OZAKI, Norio
	Psychobiology	
	Neurosurgery	WAKABAYASHI, Toshihiko
	Frontier Surgical Neuroscience	
	Endovascular Neurosurgery	
Head and Neck and Sensory Organ Medicine	Ophthalmology	TERASAKI, Hiroko
	Protective Care for Sensory Disorders	
	Otorhinolaryngology	NAKASHIMA, Tsutomu
	Cognitive and Speech Medicine	
	Maxillofacial Surgery	UEDA, Minoru
	Protective Care for Masticatory Disorders	
Surgery	Surgical Oncology	NAGINO, Masato
	Vascular Surgery	KOMORI, Kimihiro
	Gastroenterological Surgery	KODERA, Yasuhiro
	Transplantation and Endocrine Surgery	
	Cardiac Surgery	USUI, Akihiko
	Thoracic Surgery	YOKOI, Kouhei
	Pediatric Surgery	UCHIDA, Hiroo
	Urology	GOTOH, Momokazu
Musculoskeletal and Cutaneous Medicine	Orthopaedics	ISHIGURO, Naoki
	Rheumatology	
	Hand Surgery	HIRATA, Hitoshi
	Dermatology	AKIYAMA, Masashi
	Connective Tissue Disease and Autoimmunity	
	Plastic and Reconstructive Surgery	KAMEI, Yuzuru

Field	Department	Professor in charge
Biomedical Regulation	Anesthesiology	NISHIWAKI, Kimitoshi
	Infectious Diseases	YAGI, Tetsuya
	Emergency and Critical Care Medicine	MATSUDA, Naoyuki
Clinical Management Medicine (Cooperating field)	Operation Medicine	University Hospital Department of Surgical Center
	Cell Therapy Medicine	University Hospital Department of Blood Transfusion Service
	Anatomical Pathology	University Hospital Department of Pathology and Laboratory Medicine
	Diagnostic and Therapeutic Endoscopy	University Hospital Department of Endoscopy
	Clinical Radiology	University Hospital Central Block of Radiology
	Diagnostic Medical Image Processing	Graduate School of Information Science
Medicine in Growth and Aging	Pediatrics	KOJIMA, Seiji
	Developmental Pediatrics	
	Developmental and Geriatric Psychiatry	
	Community Healthcare and Geriatrics	KUZUYA, Masafumi
	Obsterics and Gynecology	KIKKAWA, Fumitaka
	Reproductive Oncology	
	Family and Community Medicine	BAN, Nobutaro
Maternal and Perinatal Care (Cooperating field)	Maternal and Perinatal Care	University Hospital Center for Maternal - Neonatal Care
Child and Adolescent Psychiatry (Cooperating field)	Child and Adolescent Psychiatry	University Hospital Child and Adolescent Psychiatry
Comprehensive Ambulatory Medicine (Cooperating field)	Medical Education	Center for Medical Education
	Quality and Patient Safety	University Hospital Department of Quality and Patient Safety

● Division of Clinical Pharmacology

Field	Department	Professor in charge
Molecule Pharmacology	Molecular Pharmacokinetics (Cooperating department)	Research Institute of Environmental of Medicine
	Molecular Pharmaco-Biology (Cooperating department)	
	Toxicogenomics	YOKOI, Tsuyoshi
Clinical Pharmacology	Clinical Pharmacy (Cooperating department)	University Hospital Department of Hospital Pharmacy
	Clinical Oncology and Chemotherapy (Cooperating department)	University Hospital Department of Clinical Oncology and Chemotherapy
	Biostatistics	
	Regulatory science of pharmaceuticals (Partnership department)	PMDA
Pharmaceutical R & D (Partnership field)	Practical Pharmaceutical R & D	Astellas Pharma Inc.
	Applied Pharmaceutical R & D	Novartis Pharmaceuticals Japan
Pharmaceutical Management (Partnership field)	Mathematical Statistics	The Institute of Statistical Mathematics

MD/PhD Course

This course allows research-oriented undergraduate students at the School of Medicine to enter the Graduate School of Medicine early to experience research very early on in their training (see diagram below ②).

The students take a temporary leave of absence from the School of Medicine during their fourth or fifth year to train at the Graduate School of Medicine and obtain their Doctor of Medical Science (PhD) degree. They may return to the School of Medicine to obtain their Doctor of Medicine (MD) degree.

● Eligible persons

Research-oriented undergraduate students at the Nagoya University School of Medicine with excellent academic performance who have completed their fourth or fifth year of study. A handful of students will be selected from each grade each year.

● Selection method

Recommended by the preceptor of basic medicine laboratories and examined by committee.

Direct Postgraduate Course

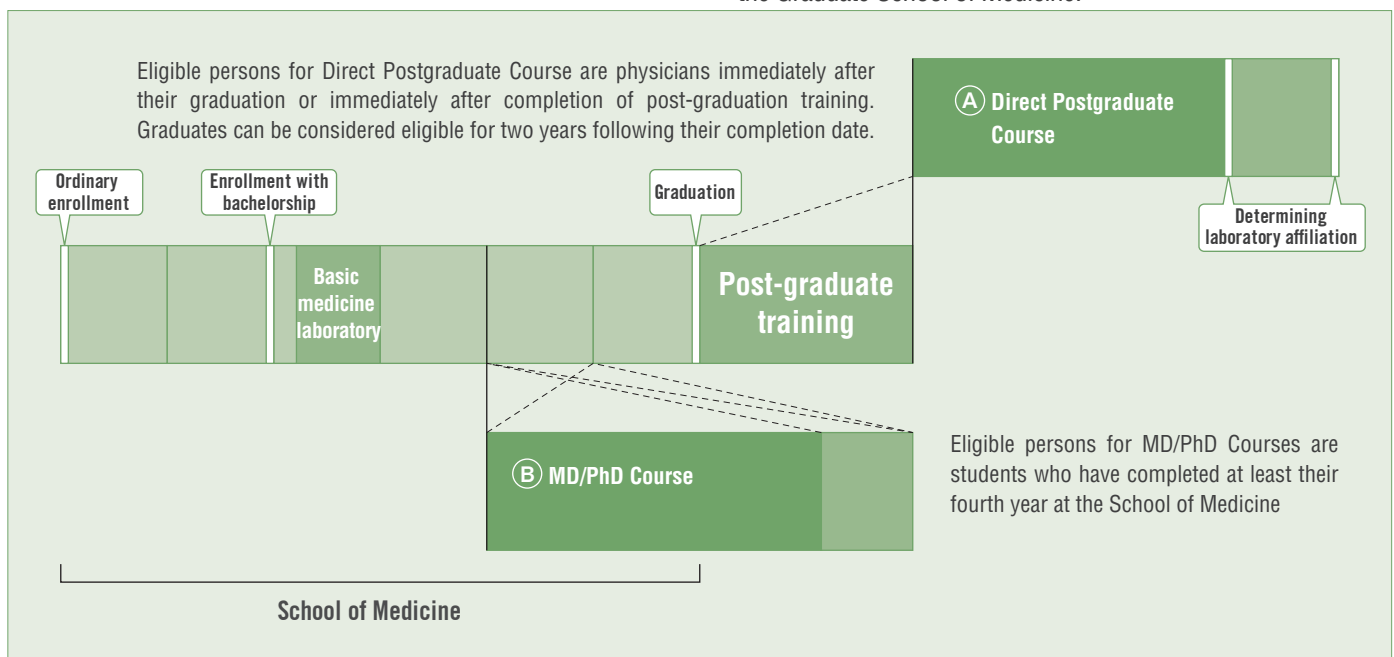
This course is for research-oriented physicians who have just graduated from the School of Medicine so that they can continue to focus on studying without the distraction of clinical affairs (see Fig. ① below). The Dean is responsible for supervision and participates in an integrated education program in collaboration with the Department of Basic Medicine and the Department of Clinical Medicine. Financial support is available if necessary. Those who join the Graduate Course of Medicine in the 3rd grade are to enter this course in principle.

● Eligible persons

Doctors who have recently graduated from the school of medicine, immediately or not more than two years after completing post-graduation training.

● Selection method

Candidates will be questioned about their aspirations when they file their applications for the Graduate School of Medicine to confirm their intentions. Eligible persons will be selected based on their qualifications for candidacy. A letter of recommendation issued by a preceptor or the like from a basic medicine seminar or clinical training should be attached to the application form. About ten are selected each year from those students enrolled in the Graduate School of Medicine.



Affiliated Laboratories pursuing research to produce even more distinguished and higher achievements through collaboration with unique and outstanding research institutes in the region. Joint research with seven outside research

institutes is currently ongoing throughout the Nagoya University Graduate School of Medicine as a whole. A total of nine affiliated laboratories are available.

Aging Research

Associated program	Program in Integrated Medicine	Established	September 1, 2000
Collaborative organization	Research Institute, National Center for Geriatrics and Gerontology		
Teacher in charge	MARUYAMA, Mitsuo (Visiting professor) YANAGISAWA, Katsuhiko (Visiting professor)		

This laboratory promotes cutting-edge research to gain a deep understanding of the mechanisms operating at the molecular/cellular level to find clues that will identify the symptoms of old age and old-age specific disorders, focusing on aging-associated genes. This laboratory also actively works to develop new ideas (seeds) for treating Alzheimer's disease as trial efforts stretching from basic research to clinical application.

AIDS Research

Associated program	Program in Integrated Medicine	Established	April 1, 2009
Collaborative organization	National Hospital Organization Nagoya Medical Center		
Teacher in charge	SUGIURA, Wataru (Visiting professor)		

Despite significant improvement in the prognosis for those with AIDS/HIV infection due to advances in antiviral treatments, this is still an incurable disease. This laboratory pursues research to identify how to treat hosts (humans) and the mechanism of viral drug-tolerance at the molecular level.

Neurochemistry

Associated program	Program in Integrated Medicine	Established	April 1, 1999
Collaborative organization	Aichi Prefectural Colony Welfare Center for Persons with Developmental Disabilities		
Teacher in charge	NAKAYAMA, Atsuo (Visiting professor) NAGATA, Koichi (Visiting professor)		

This seminar is provided within the Aichi Prefectural Colony Welfare Center for Persons with Developmental Disabilities, our collaborative organization. Research on the development and control mechanisms of the nerve system is conducted with the prevention and treatment of developmental disorders in mind. The seminar includes three major research areas, one of which is the action mechanism and neuronal development of proteins related to cell polarity.

Cancer Genetics

Associated program	Program in Integrated Medicine	Established	May 29, 2000
Collaborative organization	Aichi Cancer Center Research Institute		
Teacher in charge	SETO, Masao (Visiting professor) SEKIDO, Yoshitaka (Visiting professor)		

This program carries out hematologic malignancy research in collaboration with the Cancer Center Hospital. It is known that there is a close relationship between cause, classification or disease evolution and abnormalities in the genome (chromosomes) or hematologic malignancy genes. By clarifying this relationship, this program strives to obtain a deeper understanding of human tumors from the perspective of genetics and molecular biology.

Cellular Oncology

Associated program	Program in Integrated Medicine	Established	April 1, 2007
Collaborative organization	Aichi Cancer Center Research Institute		
Teacher in charge	INAGAKI, Masaki (Visiting professor) KUZUSHIMA, Kiyotaka (Visiting professor)		

Since the immune system's response to cancer has not been fully identified, it is critical to promote clinical research and basic research in a balanced manner. Based on this concept, this program aims to carry out activities in harmony with nonclinical studies using human immuno-competent cells and clinical studies with the Cancer Center Hospital and nationwide colleges and institutions.

Epidemiology

Associated program	Program in Integrated Medicine	Established	October 29, 1998
Collaborative organization	Aichi Cancer Center Research Institute		
Teacher in charge	TANAKA, Hideo (Visiting professor) KONDO, Eisaku (Visiting professor)		

In 2007, Aichi prefecture formulated a prefectural plan to promote anti-cancer activities. The purpose of the plan is to reduce the carcinoma death rate (for those under age 75) by 20% including natural attrition over the next decade. To make headway towards this goal, this seminar promotes studies of analytical epidemiology, preventive intervention epidemiology, and descriptive epidemiology.

Pharmaceutical R & D (Department of Practical Pharmaceutical R & D)

Associated program	Program in Integrated Medicine	Established	April 1, 2013
Collaborative organization	Astellas Pharma Inc.		
Teacher in charge	MIYATA, Keiji (Visiting professor) SAWAMOTO, Taiji (Visiting professor)		

Teachers are invited from a pharmaceutical company (Astellas Pharma Inc.), which is headquartered in Japan, to teach the flow of pharmaceutical R&D from the basics through to the final stage. The actual work done at laboratories in pharmaceutical R&D is also taught.

Pharmaceutical R & D (Department of Applied Pharmaceutical R & D)

Associated program	Program in Integrated Medicine	Established	April 1, 2013
Collaborative organization	Novartis Pharmaceuticals Japan		
Teacher in charge	WATANABE, Toshifumi (Visiting professor) HIROSE, Toru (Visiting professor)		

Teachers are sent from a pharmaceutical company (Novartis Pharmaceuticals Japan), which is headquartered abroad, to explain the trends in drug discovery from an international viewpoint, as well as the trends in international cooperation in clinical trials. For the graduate students in joint departments, full-time teachers of the Graduate School of Medicine give educational and research training as vice-supervisors under the educational guidance system of multiple teachers.

Pharmaceutical Management (Department of Mathematical Statistics)

Associated program	Program in Integrated Medicine	Established	April 1, 2013
Collaborative organization	The Institute of Statistical Mathematics		
Teacher in charge	TSUBAKI, Hiroe (Visiting professor) EGUCHI, Shinto (Visiting professor)		

In the mathematical statistics course, mathematical statistics as the basis of biostatistics are taught and studied. The course also helps to produce biostatisticians who are in seriously short supply in Japan. For the graduate students in joint departments, full-time teachers of the Graduate School of Medicine give educational and research training as vice-supervisors under the educational guidance system of multiple teachers.

With the help of donations from the private sector intended to promote academic activities, this seminar was established through a Nagoya University initiative. The endowed scholarship funds facilitate and diversify education and research according to a given

Department of Renal Replacement Therapy

Established February 1, 2010

Teacher in charge ITO, Yasuhiko (Professor in charge of Endowed Chair)

Department of Metabolic Medicine

Established October 1, 2010

Teacher in charge HAMADA, Yoji (Associate professor in charge of Endowed Chair)

Department of Advanced Research of Gastroenterology

Established January 1, 2011

Teacher in charge ISHIGURO, Kazuhiro (Associate professor in charge of Endowed Chair)

Department of HSCT Data Management and Biostatistics Endowed Chair: The Japan Society for Hematopoietic Cell Transplantation

Established January 1, 2009

Teacher in charge SUZUKI, Ritsuro (Associate professor in charge of Endowed Chair)

theme. The seminar title represents the theme of the education and research conducted and if the donator desires, the name of the donator is also used as the seminar name. The Graduate School of Medicine has eighteen endowed chairs at this time.

There is a major need in society for comprehensive management of renal failure through hemodialysis, peritoneal dialysis, and renal transplantation for the more than 300,000 patients in Japan with end-stage chronic renal failure. To this end, we have been conducting research on treatments since 2005 and have improved medical care for renal failure in the region through this department since 2010. We also make our educational program, which has become established in the region, available to medical professionals around Japan, and are committed to the comprehensive management of renal failure through research, education and clinical practice incorporating peritoneal dialysis.

Lifestyle-related diseases have become a critical social problem throughout the globe. In particular, the metabolic syndrome that has recently drawn attention is a condition that comes with increased risks of arterial sclerosis in addition to the underlying visceral adiposity. This seminar primarily studies metabolic syndrome to identify molecular mechanisms, discover new therapeutic targets, and develop pharmacological treatments. Pursuing this theme can also contribute to the identification of conditions of other lifestyle-related diseases so that innovative treatment methods can be established for those diseases as well.

The objective of the department is to clarify the pathology of intractable diseases in the field of gastrointestinal medicine and to develop new treatments and test methods. We intend to identify the pathology of ulcerative colitis, inflammatory bowel disease including Crohn's disease, hepatic disease, malignant tumor and so forth at the molecular level and use the findings to develop therapies and test methods. In addition, we also develop new animal models and tools to support the research.

Taking charge of the operation of the Annual Report of Nationwide Survey for Hematopoietic Cell Transplantation in Japan, this seminar endeavors to increase the registration rate and accuracy of information. With the authorization of the Japan Society for Hematopoietic Cell Transplantation, the seminar discloses and uses survey results collected nationwide in collaboration with the Japanese Society for Pediatric Hematology, Japan Marrow Donor Program, Japanese Cord Blood Bank Network, and other organizations. The seminar aims for further improvement in Japanese medical transplants through various support, including clinical testing for medical transplants, while contributing to the improvement of hematopoietic cell transplantation throughout Asia.

Department of Molecular Cardiology Endowed Chair:Kowa

Established July 1, 2010

Teacher in charge OUCHI, Noriyuki (Professor in charge of Endowed Chair)

Lifestyle-related diseases have been steadily increasing, and establishing treatment methods has become a major concern in society. This seminar identifies the pathophysiology of lifestyle-related diseases (e.g. metabolic syndrome, arterial sclerosis, and ischemia disease), particularly the physiopathological significance of secreted factors (e.g. Adipo-cytokine and Myokine) at the cell or body level. Based on the unique basic research described above, the seminar seeks to explore new paths towards innovative treatment methods and the development of new drugs.

Department of Transplant Immunology

Established April 1, 2012

Teacher in charge KOBAYASHI, Takaaki (Professor in charge of Endowed Chair)

The department aims to "go from the basics to clinical practice" and to "establish and strengthen the foundation of medical practice" to provide "secure, safe, and effective medical care by transplantation". Utilizing the findings obtained by the Department of Applied Immunology, we conduct scientific research that relates directly to clinical practice to establish tangible basic medicine. We are actively involved in developing human resources for the future, creating a broad research community covering immunology, pharmacy, engineering science, and agriculture, and performing joint research with hospitals, research institutes, and companies at the national level.

Department of CKD Initiatives Regional cooperative system

Established November 1, 2008

Teacher in charge YASUDA, Yoshinari (Associate professor in charge of Endowed Chair)

In Japan there are approximately 13.3 million patients who have chronic kidney disease (CKD). Since CKD is a preliminary stage of end-stage renal failure and is a serious risk factor for cardiovascular diseases including myocardial infarction and stroke, there is a pressing need to develop countermeasures against CKD. While collaboration between primary care physicians and specialists is important in the treatment of CKD, there is no fixed system. The department intends to establish an effective system of collaboration for CKD treatment and accumulate evidence of medical treatments for CKD, thus helping to alleviate the disease in Japan.

Department of Advanced Medicine for Uremia

Established April 1, 2009

Teacher in charge NIWA, Toshimitsu (Professor in charge of Endowed Chair)

By identifying uremia metabolism primarily from the perspectives of uremic toxins to establish a scientific foundation for preventing/controlling complications. So far, the seminar has revealed the mechanism of uremia development and involvement of protein metabolites deprived from diet (e.g. indoxyl sulfate as uremic toxin). The seminar identifies further in-depth molecular mechanisms, particularly intracellular communication, in addition to the molecular mechanism for complications such as arterial sclerosis.

Department of Medical System Management

Established April 1, 2009

Teacher in charge SUGIURA, Shinichi (Professor in charge of Endowed Chair)

Department of Surgical Infection

Established October 1, 2009

Teacher in charge SUGAWARA, Gen (Lecturer in charge of Endowed Chair)

Department of Education for Community-Oriented Medicine

Established October 1, 2009

Teacher in charge YASUI, Hiroki (Associate Professor in charge of Endowed Chair)

Department of Pediatric Intensive Care Medicine

Established November 1, 2011

Teacher in charge TSUKUSHI, Satoshi (Lecturer in charge of Endowed Chair)

Department of developmental disability medicine

Established November 1, 2011

Teacher in charge MIURA Kiyokuni (Lecturer in charge of Endowed Chair)

As a base for encouraging innovation in frontier science and engineering, with the catchphrase, "a great doctor and a large hospital on the palm of a hand", the department aims to build a new system of prophylaxis and early medical care utilizing information and communications technology. We perform empirical social research targeting the application of regional medical care analysis using the Geographic Medical Information System (GMIS) and Ubiquitous Mobile Infra Structure (UMIS) by using mobile phones and tablet devices for medical care.

As a variation of perioperative infections, wound infection is a simple complication. However, it is a critical issue since treatment is often painful and the length of the patient's hospital stay may be extended. However, studies based on well-established evidence-based medicine for perioperative infections are scant. This seminar has the goal of identifying best practices in wound coverage through proactive surveys of perioperative infections, identifying risks, and random comparison surveys of methods to close wounds.

Aiming to build a new regional medical care system for the 21st century and to nurture community-oriented healthcare providers, the department was launched with the support of Aichi prefecture and other organizations. We are pursuing the following three major initiatives: "Investigation of and proposals for regional medical needs", "Enhancement of activities to raise awareness and mutual understanding", and "Development of community-needs-oriented healthcare providers". In recent years, we have established an education and appraisal system using simulations, and also an educational system for regional medical care by interprofessional education (IPE).

The issue of human resource development is being addressed to provide multidisciplinary treatment in the field of pediatric medicine. This department aims to nurture specialist staff for pediatric medicine in each of the pediatrics, orthopedics, and neurosurgery divisions. We train staff who are capable of dealing with a broad range of pediatric medicine including the pediatric intensive care unit (PICU), severe trauma, childhood cancers and so forth. In principle, the department is for postgraduate education and works on: 1) educating young medical care personnel and securing human resources, 2) improving the level of special facilities in Aichi prefecture, and 3) providing information for the public and residents in the prefecture, and understanding the current situation.

The department was established with the support of Aichi prefecture based on the "Scheme for Revitalizing Regional Medical Care in Aichi Prefecture" to train physicians involved in medical care for handicapped children (individuals) by cooperation among the three divisions of pediatrics, orthopedics, and pediatric psychiatry, since there is a shortage of such physicians. The department focuses on children (individuals) with cerebral palsy or severe psychosomatic disorders, developmental disorders and so forth which developed in childhood. We educate students and young physicians and raise awareness in society so that all physicians can understand medical care for handicapped children (individuals), thus creating an environment free of discrimination.

Department of Mental Health

Established November 1, 2011

Teacher in charge IRITANI, Shuji (Professor in charge of Endowed Chair)

The department was established at the request of Aichi prefecture based on the Scheme for Revitalizing Regional Medical Care in Aichi Prefecture, mainly to revitalize regional medical care and train human resources. The department aims to improve mental health in consideration of biological, psychological and social aspects based on the empirical data and needs of the patient and family. Our objective is to contribute to regional mental health-care in collaboration with the medical administrative agencies of Aichi prefecture.

Department of Development for Community-oriented Healthcare System

Established March 1, 2012

Teacher in charge MATSUBA, Yasumasa (Lecturer in charge of Endowed Chair)

The purpose of the department is to establish a community-oriented healthcare system in collaboration with administrative agencies, regional medical care/care providers, and the Nagoya University Graduate School of Medicine. Nakatsugawa city in Gifu prefecture is used as a model region. The guiding principle of our activities is collaboration among relevant professionals in the fields of health, medical care, and care/welfare to provide consistent services to residents, and to practice interprofessional medical education in the system to nurture medical personnel with high regional adaptability.

Department of Advanced Medicine in Cardiopulmonary Disease

Established April 1, 2012

Teacher in charge KONDO, Takahisa (Professor in charge of Endowed Chair)

The mission of the department is to elucidate the pathology of pulmonary hypertension, an intractable disease, and to assess and develop novel therapeutic methods. The prognosis of pulmonary hypertension was generally considered to be unfavorable. However, as innovative new drugs were introduced one after another, the need for early detection and treatment has been addressed, and so there is now an urgent need to improve education and awareness of the disease. Because the treatment of pulmonary hypertension often needs to be performed in parallel with treatment of the underlying disease including circulatory diseases and collagen disorders, collaboration with specialists in other divisions is crucial. The department aims to identify the pathology of the disease through basic research and to build a treatment system involving relevant facilities to establish a solid system for treating pulmonary hypertension.

Department of Comprehensive Community Care Systems

Established October 1, 2012

Teacher in charge SUZUKI, Yusuke (Associate Professor in charge of Endowed Chair)
HIROSE, Takahisa (Assistant Professor in charge of Endowed Chair)

The concept of the comprehensive community care system is to provide support for medical care, care, prophylaxis, and livelihood aid by the entire community in a familiar area where one has lived a long time. This is the future of regional care as the basis of a highly ageing society. As the only graduate school department in Japan that specializes in comprehensive community care, our objective is to help establish such a system which focuses on individuality and versatility in the highly ageing society through various research, education and healthcare activities.

Department of Hip and Knee Reconstructive Surgery

Established April 1, 2013

Teacher in charge HASEGAWA, Yukiharu (Professor in charge of Endowed Chair)
HAMADA, Takashi (Assistant Professor in charge of Endowed Chair)

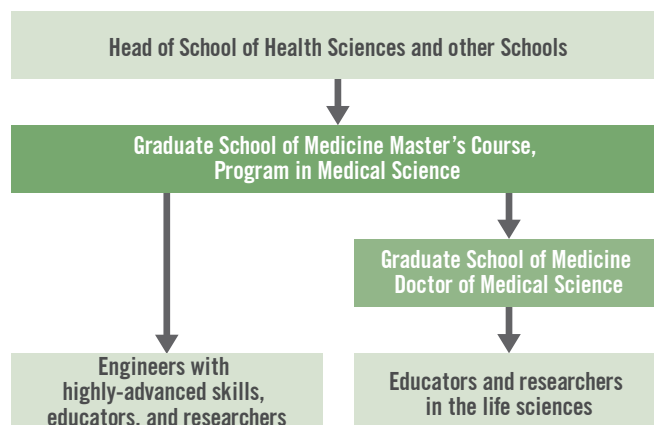
As the number of elderly people increases, decreased function caused by locomotor diseases is rapidly increasing. The department focuses on studying the pathology and comprehensive treatment particularly of degenerative diseases of lower leg joints (coxarthrosis/gonarthrosis) and proximal femur fracture which disturb the gait. We aim to establish and provide education on safe and accurate therapeutic methods of total hip replacement, total knee replacement, osteotomy and so forth by multi-center research with associated hospitals. We also conduct programs for social enlightenment on locomotive syndrome and QOL improvement activities.

(as of May 1, 2013)

Program in Medical Science

Maximum enrollment
20

This course provides basic medical knowledge and expertise to apply this knowledge to other areas by setting a model course for students who have graduated from undergraduate schools other than medicine, dentistry, or veterinary medicine and desire to pursue those domains and medical fields by blending them together. After completion of the course, some students go on to become engineers and educators, while others further enroll in a Doctor of Medical Science to become educators or researchers (See diagram). This course provides highly advanced professional knowledge and skills to both types of students.



Model courses to take:

Course title	Major subject	Details
Genetic medicine course	Biochemistry	The purpose of this course includes conducting research assignments on the border between molecular biology and clinical medicine (e.g. gene therapy and gene diagnosis) by learning how to introduce new approaches and effective diagnosis method to foster professionals engaged in these studies and promote technical development.
	Pathology	
	Immunology	
Cell medicine course	Anatomy	The purpose of this course includes conducting various research (e.g. correlations between the fine structure of cells and cell function, the stimulus reception/response mechanism of cells, intracellular signal transduction mechanisms, molecular mechanisms such as the behaviors of chemical agents in the cells, tissue or body function/signaling mechanism in terms of the cell system) to foster professionals engaged in these studies and promote technical development.
	Physiology	
	Pharmacology	
Medical engineering/ medical information course	Medical information Bionomy	The primary purpose of this course is to train researchers and engineers working in the manufacturing industry and in developing devices used for medical treatment and medical studies, or to train those who work in the food manufacturing industry as researchers or engineers studying the areas of bionomy, pharmacology, pathology, anatomy, bioengineering, and other areas, or highly-skilled engineers with advanced skills in medical science and professional knowledge who work for hospitals and are engaged in medical electronics, medical engineering, development of prosthetic appliances, or medical information system management.
Medical pharmacy course	Medical pharmacy	This course aims to foster clinical research coordinators who can arrange clinical experiments (graduates from the university department of pharmacy) and require professional medical/pharmacological knowledge, persons in charge of monitoring and audits to evaluate/audit clinical experiments, or clinical pharmacists to provide pharmaceutical care focused on drug therapy.
Human ecology course	Microbiology	Throughout history, humans have fought to maintain their health and lives while fighting microbes and parasitic worms. Thanks to the discovery of highly effective antibiotics and anthelmintics, we have almost entirely conquered infections. However, numerous new problems have now surfaced; for example, persistent infectious diseases caused by resistant bacteria or atopic dermatitis rashes. Further, global environmental changes and health problems have emerged, such as endocrine-disrupting chemicals and ozone depletion. This course is intended to train personnel who can consider the relationship between human beings and various environmental factors (e.g. microbes and parasitic worms) and play a central role in the food business, health and medical industry, and public administration.
	Immunology	
Health promotion/ sports medicine course	Social medicine	The evolution of our information-based society and advancing motorization has brought a set of ailments known as lifestyle-related diseases. Kinesitherapy has been introduced to prevent or conquer such diseases, boosting demand for personnel who can accurately prescribe or coach patients while maintaining close contact with the family doctor. Followed by an ever-increasing motivation of people to spend quality and active post-retirement years, more of these personnel are needed by welfare institutions. The course aims to train such personnel.
	Pathology	
Medical management course	Social medicine	This course is intended to foster professionals with a basic knowledge of medicine and medical treatment and an expert knowledge of research methods from the approach of social medicine. In addition, the professionals must also learn the real significance of managing medical systems and medical business administration to take leadership in various tasks such as management of medical-related businesses, public administration in central or local governments, and management of international cooperation projects.
	Medical information	

Program in Medical Science, Healthcare Administration Course

Young Leaders' Program (YLP)

Maximum
enrollment
10

The Young Leaders' Program (YLP) contributes to establishing a global leadership network by fostering future national leaders in countries in Asia and Eastern Europe and deepening understanding of Japan. It also aims to establish amicable relationships between Japan and other countries and help strengthen policy-making abilities. The program is one of the government-financed foreign student programs under Japanese government (Ministry of Education, Culture, Sports, Science and Technology).

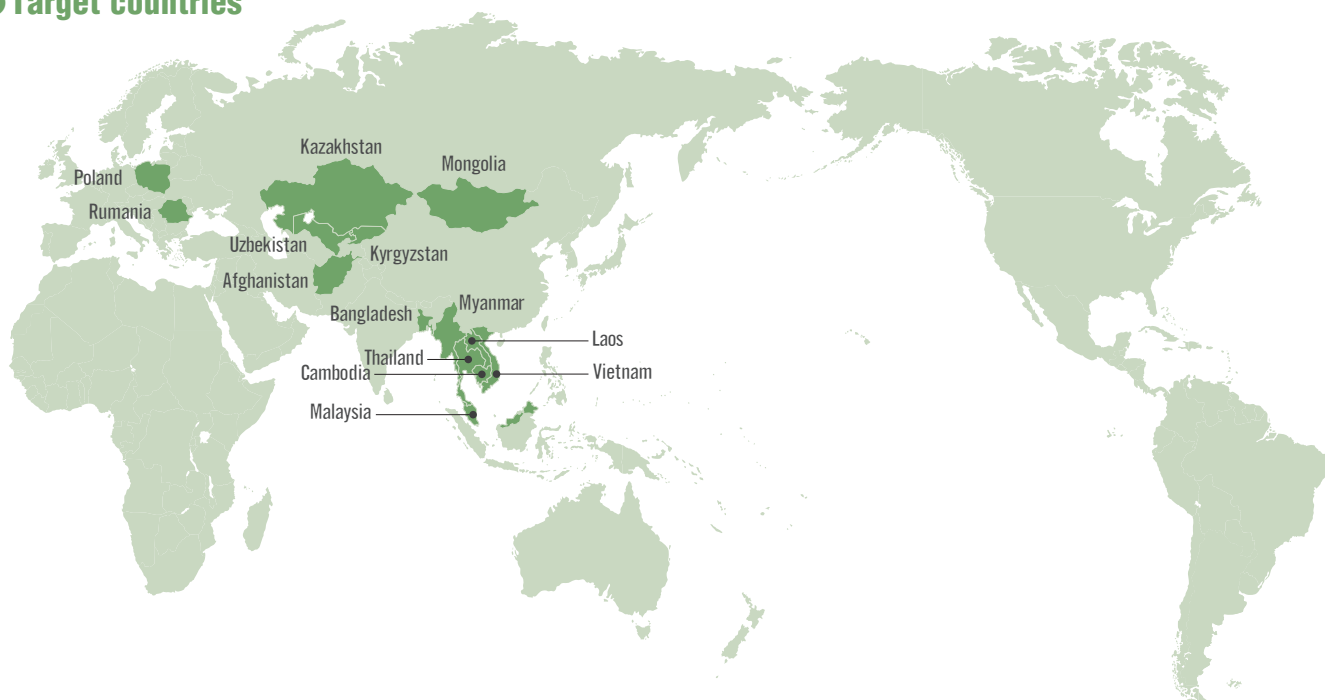
The program begins in October and typically extends for one year. Students are granted a master's degree upon completion of the program. Lectures are given entirely in English. Making use of Japan's advantage of having keen relationships with both Western and Asian countries, the program offers a wide curriculum that fits the purpose of the program fostering future national leaders who are capable of establishing global personal networks. For example, special lectures, internships,

and externships provided by professionals with various backgrounds from medical administration, in addition to lectures by overseas lecturers, are occasionally offered.

Another core feature of the YLP is the importance placed on producing essays. This means that the program requires students to produce a master's thesis in English within the very short period of one year and publish it in an international journal written in English. The curriculum is designed to cultivate students' ability to produce essays that can be accepted by international journals and give presentations on these essays. If their master's thesis is accepted by international journals, it becomes valuable global property in terms of information sharing—not only for the student but also for Nagoya University and the student's home country.

Many students who have completed this program in the past are now playing an active role in ministries in charge of the medical sector, including the Ministry of Public Health, in their own countries or international institutions such as the WHO and World Bank. The diagram below shows the 14 participating countries in the YLP. Candidates can apply only through the diplomatic missions stationed in those countries (Direct applications to Nagoya University are not accepted).

● Target countries



For more information on the Young Leaders' Program (YLP), see the link below

► <http://www.med.nagoya-u.ac.jp/english01/YLP.html>

The Nagoya University School of Medicine provides a consistent six-year education with the goal of developing creative doctors and medical researchers with a well-rounded character, high ethical standards, and a scientific mind.

In response to the 1998-2000 reorganization of the Graduate School of Medicine, all teachers in the School of Medicine

concurrently serve as teachers in the Graduate School of Medicine. This system provides a well-developed education program according to a detailed teaching scheme. The syllabus is specially designed for students of the School of Medicine by teachers of the Graduate School of Medicine, who are also doctors or researchers with a high degree of professionalism.

● Program

First year	First semester	Cross-departmental subjects (Lectures, training, and practice) Basic subjects (science, liberal arts, cross-departmental)		Elementary medicine
	Second semester			
Second year	First semester	Academic subjects (science, liberal arts, cross-departmental)		Basic medicine (lectures/training)
	Second semester			
Third year	First semester	Basic seminar for medicine		
	Second semester			
Fourth year	First semester	Social medicine (lectures/training)		
	Second semester	Clinical medicine (tutorials, lectures, basic clinical technique practice)		Social medicine (lectures)
Fifth year	First semester	Clinical practice		Clinical pathology
	Second semester			
Sixth year	First semester	Choice practice		
	Second semester	Final exam		

University facilities

The Medical Library and Health Science Library Room are located on the Tsurumai Campus and the Daiko Campus, respectively, for use mainly by undergraduates, graduate students, researchers at the School of Medicine and Graduate School of Medicine, and medical experts at the University Hospital.

The library provides services to support education and research in addition to its previous role of providing library materials. The new services include introduction of new electric documents (e.g. e-journals, e-texts, and databases), hosting various guidance programs and seminars, installing a PC corner, publishing the Nagoya Journal of Medical Science, editing scientific achievements in international languages, are publishing activities online.

Medical Library

Serving as center that locates the history of the Nagoya University School of Medicine in the Tokai region as we look towards the future, the Exhibition Room of the School of Medicine on the fourth floor of the Medical Library exhibits, stores, and publishes via website documents related to the School of Medicine.

Independent website for Medical Library

▶ <http://www.med.nagoya-u.ac.jp/medlib/>

Website for Health Science Library Room

▶ <http://health.met.nagoya-u.ac.jp/LIB/>

Digital archive since the dawn of modern medicine

▶ <http://www.med.nagoya-u.ac.jp/medlib/history>

University facilities

This center facilitates the development of two particular areas such as neurological disorders and malignancies. Systematically promoting research with a strong social need (e.g. identifying etiologic mechanisms of diseases, creating animals

models, and developing new genetic diagnostic methods and molecular-targeted therapy), the center strives to bridge the obtained results and establish an international presence.

Center for Neurological Diseases and Cancer

(Established: April 1, 2003)

Department	Area	Purpose	Teacher in charge
Department of Oncology Clarifies carcinogenic mechanisms due to genetic mutation and molecular mechanisms of invasion/metastasis of carcinoma cells.	Division of Molecular Carcinogenesis	Comprehensively identifies molecular pathogenesis of carcinoma to develop innovative diagnosis/treatment methods for intractable cancers.	TAKAHASHI, Takashi (Professor)
	Division of Cancer Biology	Clarifies oncogenic molecular mechanisms due to oncogenes/antioncogenes.	SENGA, Takeshi (Associate Professor)
Department of Medical Neuroscience Research is conducted on the generation and differentiation of neurons and the molecular mechanism of neuromuscular disorders.	Division of Neuroscience	Conducts research related to survival and differentiation mechanisms due to neurotrophic factors and development of kidneys.	KAIBUCHI, Kozo (Professor)
	Division of Neurogenetics	Clarifies molecular mechanisms of pathological conditions in myoneural junctions and conducts research on controlling pathological conditions, while clarifying the molecular mechanism of splicing mutation in neurological disorders.	OHNO, Kinji (Professor)
Department of Advanced Medical Science Clarifies pathologic conditions of malignancy and neurodegenerative diseases and creates animal models while developing treatment methods.	Division of Molecular Pathology	Research on the formation of blood vessels and neurogenesis is conducted at the whole-body level using genetically modified mice.	TAKAHASHI, Masahide (Professor)
	Division of Molecular Biochemistry	Conducts molecular genetic/cell biological research on target molecules of chemical therapy for cancer, focusing on the genes involved in cell division.	FURUKAWA, Koichi (Professor)
	Division of Disease Models	Strives to clarify causal factors of diseases and establish treatment methods by making disease-model animal using genetically-modified mice and the like.	TAKEI, Yoshifumi (Associate Professor)
	Division of Molecular Mycology and Medicine	Clarifies molecular mechanisms of pathological conditions in myoneural junctions and conducts research on controlling pathological conditions, while clarifying the molecular mechanism of splicing mutation in neurological disorders.	NAKAGAWA, Yoshiyuki (Associate Professor)

University facilities

Center for Research of Laboratory Animals and Medical Research Engineering (Established: May 1, 2004)

This Center consists of four divisions, including two divisions (Laboratory Animals and Medical Research Engineering) that were established a quarter of a century ago and integrated in 2004. The center responds to highly advanced and diverse

study needs by concentrating both research facilities and technical staff together. The Center provides a broad range of support for education and research at the Graduate School of Medicine and School of Medicine.

Department	Purpose
Division for Research of Laboratory Animals	This division provides centralized control of the animal testing required by the Graduate School of Medicine and University Hospital. The environment established in this facility allows for appropriate action in terms of animal welfare and scientifically valuable animal testing.
Division for Medical Research Engineering	This division is designed to manage shared use of various analytical/measuring devices in the Graduate School of Medicine. Concentrating the devices in one place instead of having them in each laboratory can facilitate more effective use of this state-of-the-art equipment. The devices are accessible to other schools at Nagoya University and the outside world.
Division for Advanced Medical Research	Division designed to fostering successors in basic studies.
Division for Designated Research	Division run by outside funds to achieve active and dynamic development, promotion, and reinforcement of research and education at the Graduate School of Medicine.

University facilities

Center for Medical Education

(Center for Postgraduate Clinical Training and Career Development, University Hospital)
(Established: August 1, 2005)

The Center provides overall control of undergraduate, postgraduate, and lifelong education of all medical care personnel of the School of Medicine and the University Hospital. The services include support for teachers of the School of Medicine and School of Health Sciences, implementation and adminis-

tration of postgraduate clinical training for the medical and dental interns in the University Hospital, education of hospital staff, and holding of lectures for the medical instructors in the University Hospital and associated hospitals. The Center also provides career support to young physicians.

Teacher in charge UEMURA, Kazumasa (Professor)

University facilities

Nagoya University Clinical Simulation Center (NU-CSC)

(Established: April 1, 2013)

Launched in 2006, the Skills & IT Laboratory provides education on basic clinical skills and behavioral education and is used by nearly 2,000 people annually, a total of 20,000 people so far. In the 2012 school year, when state-of-the-art simulators and training equipment for advanced training of surgical diagnosis and treatment were introduced, the institute became

the Nagoya University Clinical Simulation Center (NU-CSC). The Center houses perhaps the most complete range of equipment and machinery in Japan. In the future, the Center will contribute to lifelong training as well as postgraduate/special training for all medical care staff engaged in regional health-care.

Teacher in charge UEMURA, Kazumasa (Professor)

Daiko Campus

Graduate School of Medicine

Master's / Doctoral Courses (Health Sciences)

School of Medicine

School of Health Sciences

The Master's / Doctoral Courses (Health Sciences) at the Graduate School of Medicine and the School of Health Sciences at the School of Medicine are located at the Nagoya University Daiko Campus, Higashi-ku, Nagoya. In cooperation with the School of Medicine and the University Hospital, the Daiko Campus comprehensively promotes education and research in the assistant medical field, in specialties such as nursing, medical techniques, and rehabilitation aid.

Graduate School of Medicine

Master's / Doctoral Courses (Health Sciences)

Amidst the ever-changing medical and health system as medical technologies and social structures advance, the Daiko Campus promotes the development of medical service providers who can play a central role in clinical, management, and policymaking activities. At the same time, the campus attaches importance to fostering high-performance researchers/educators that will promote academic pursuits in the health sciences through interdisciplinary and pioneering research.

School of Medicine

School of Health Sciences

With our changing social conditions, the assistant medical field is also advancing and increasing in complexity day by day. To cope with this, the campus pursues the development of outstanding medical service providers, educators, and researchers, while keeping with a basic approach of establishing medical science technology as an academic domain.

Daiko Campus

Graduate School of Medicine Master's / Doctoral Courses (Health Sciences)

Program in Nursing 48

Program in Radiological and Medical Laboratory Sciences 48

Program in Physical and Occupational Therapy 49

School of Medicine School of Health Sciences 50

Program in Nursing

Maximum enrollment [First semester] 18 [Second semester] 6

Respecting the dignity of humankind, this course cultivates healthcare professionals with outstanding specialist capabilities. Further, the course strives to foster creative and inquisitive researchers/educators to formulate evidence-based learning in the medical technology sciences.

Master's Course	Doctoral Course	Professor in charge
Fundamental and Clinical Nursing	Fundamental and Clinical Nursing	YAMAUCHI, Toyoaki OTA, Katsumasa IKEMATSU, Yuko ANDO, Shoko FUJIMOTO, Etsuko HONDA, Ikumi
Nursing for Developmental Health	Nursing for Developmental Health	SAKAKIBARA, Hisataka KAJITA, Etsuko MAEKAWA, Atsuko HIRAI, Makoto ASANO, Midori NARAMA, Miho TAMAKOSHI, Koji

(as of October 1, 2013)

Program in Radiological and Medical Laboratory Sciences

Maximum enrollment [First semester] 20 [Second semester] 7

This program is primarily concerned with cultivating researchers and educators by approaching and understanding information on the human body from both a macro and micro perspective, in addition to developing professionals with advanced specialist capabilities such as medical physicians.

Master's Course	Doctoral Course	Professor in charge
Radiological Sciences	Radiological Sciences	KODERA, Yoshie SHIMAMOTO, Kazuhiro ISHIGURE, Nobuhito IKEDA, Mitsuru KATO, Katsuhiko ISODA, Haruo YAMAMOTO, Seiichi IMAI, Kuniharu
Pathophysiological Laboratory Sciences	Pathophysiological Laboratory Sciences	MURATE, Takashi KOJIMA, Tetsuhito WAKUSAWA, Shinya KAWABE, Tsutomu KONDO, Takaaki NAGASAKA, Tetsuro NAGATA, Kozo ISHIKAWA, Tetsuya

(as of October 1, 2013)

Program in Physical and Occupational Therapy

Maximum enrollment [First semester] 10 [Second semester] 4

The program is designed to develop researchers and professionals with highly advanced skills who can sufficiently respond to ever-changing medical situations. Meanwhile, the program aims to establish a diverse and vital education system (e.g. collaboration between various clinical practices and areas of study) to define new fields of inquiry.

Master's Course	Doctoral Course	Professor in charge
Physical Therapy	Physical Therapy	KAWAMURA, Morio SUZUKI, Shigeyuki YAMADA, Sumio TORIHASHI, Shigeko UCHIYAMA, Yasushi
Occupational Therapy	Occupational Therapy	SUZUKI, Kunihumi HOSHIYAMA, Minoru KARASHIMA, Chieko SAWADA, Yuji

(as of October 1, 2013)

School of Medicine

The purpose of the School includes the development of medical service providers, educators, and researchers with a broad range of basic knowledge and sophisticated expertise, an outstanding ability to solve problems, as well as a rich sense of humanity. This purpose is pursued by establishing medical

● Organization

Department of Nursing

Maximum enrollment	80
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technology science as a field of study, while educating in and studying science, technology, and implementation techniques. The course consists of 5 majors, providing a four-year integrated education from basic to professional disciplines.

The purpose of the Department of Nursing is to study humankind, the environment, health and nursing. The Department trains nurses, public health nurses, maternity nurses, and educators/researchers who are skilled in conducting scientific nursing.

Department of Radiological Technology

Maximum enrollment	40
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The Department of Radiological Technology trains radiological technicians who can meet the current situation of diagnostic imaging and radiation therapy which is rapidly progressing, as well as educators and researchers in this specific field.

Department of Medical Technology

Maximum enrollment	40
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The purpose of the Department of Medical Technology is to develop clinical laboratory technicians with problem-solving skills based on knowledge and techniques related to the latest testing, and to train educators and researchers in this specific field.

Department of Physical Therapy

Maximum enrollment	20
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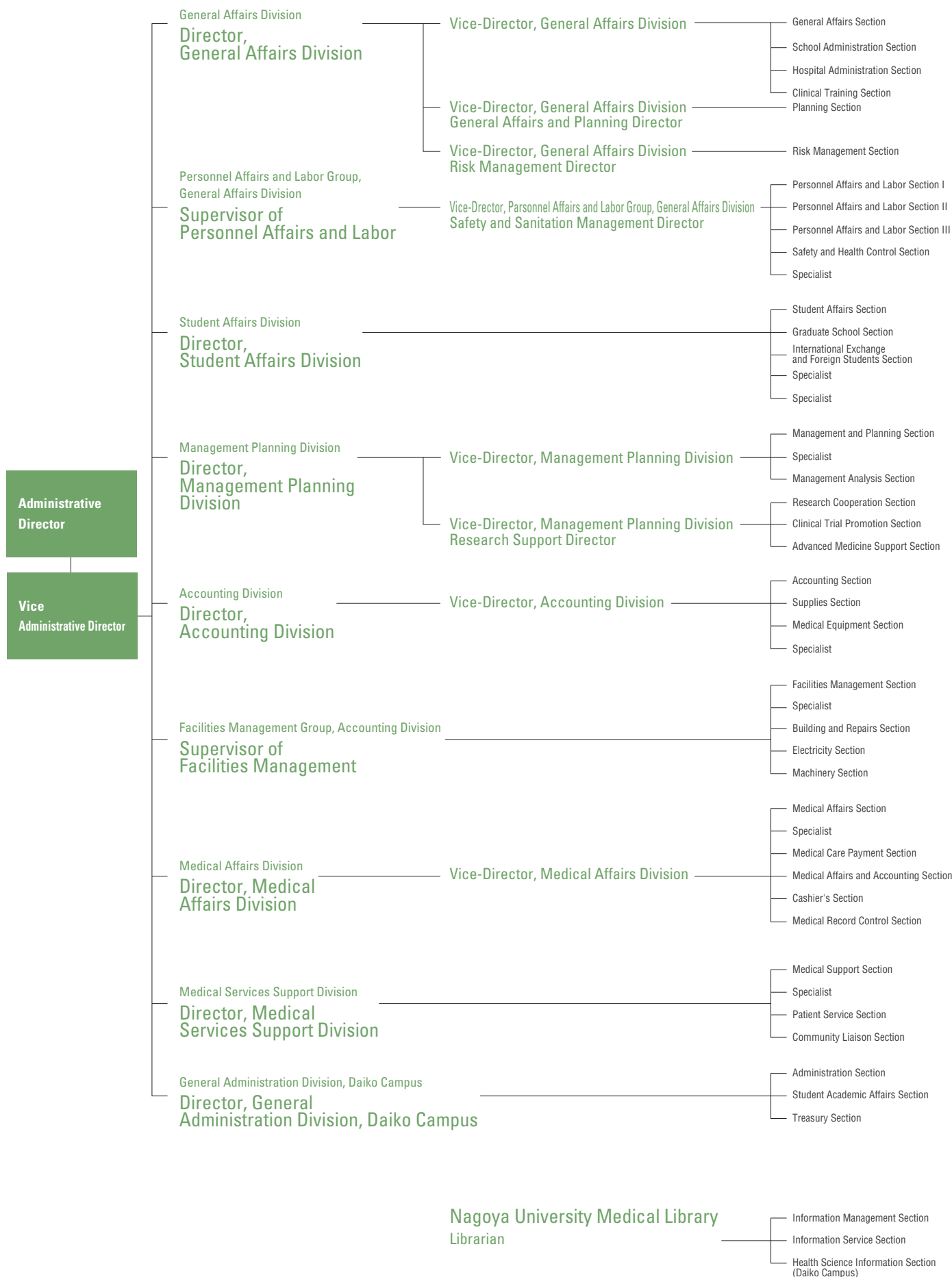
The purpose of the Department of Physical Therapy is to acquire a broad range of knowledge and culture related to human dignity, prophylaxis and recovery of impairments, team medicine, establishment of the basis of physical therapy and so forth. We also aim to train physical therapists who can contribute to and demonstrate leadership in the whole range of medical care, health and welfare of the next generation.

Department of Occupational Therapy

Maximum enrollment	20
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The purpose of the Department of Occupational Therapy is to train human resources who have mature humanity based on bioethics that allows them to understand and support the patients who undergo occupational therapy, who are equipped with the academic background required to conduct research and development scientifically, and who can work actively in an international setting with an inquiring mind. We also conduct education and research related to the above.

Administration office organizational chart



Number of personnel

Title		Graduate School of Medicine (Tsurumai Campus)	Graduate School of Medicine (Daiko Campus)
Faculty member	Professor	51 (9)	37 (1)
	Associate Professor	54 (13)	18 (1)
	Lecturer	16 (17)	3
	Assistant Professor	36 (58)	24
	Research Associate	1	0
	Researcher	0 (5)	0
	Research Assistant	0	1
Subtotal		158 (102)	83 (2)
General office staff	Administrative Staff	157	
Total		398 (104)	

Note: Numbers in parentheses indicate additional number of specially appointed teachers.

(as of May 1, 2013)

Maximum enrollment and current number of students

Graduate School of Medicine

[Doctoral Course (Medical Sciences)]

		Maximum enrollment	Current number of students		
			Male	Female	Total
Program in Integrated Molecular Medicine	Second year	52	55	15	70
	Third year	52	44	19	63
	Fourth year	52	35	21	56
Subtotal		156	134	55	189
Program in Cell Information Medicine	Second year	43	33	10	43
	Third year	43	22	10	32
	Fourth year	43	32	13	45
Subtotal		129	87	33	120
Program in Function Construction Medicine	Second year	39	40	11	51
	Third year	39	32	8	40
	Fourth year	39	37	6	43
Subtotal		117	109	25	134
Program in Health and Community Medicine	Second year	27	10	9	19
	Third year	27	12	11	23
	Fourth year	27	15	27	42
Subtotal		81	37	47	84
Program in Integrated Medicine*	First year	161	161	50	211
Subtotal		161	161	50	211
Total		644	528	210	738
Reserch student at the graduate school		—	12	7	19

*Including the enrollment for autumn 2012.

(as of April 1, 2013)

[Direct Postgraduate Course]

	Maximum enrollment	Current number of students		
		Male	Female	Total
First year	—	1	0	1
Second year	—	1	0	1
Third year	—	1	0	1
Total	—	3	0	3

(as of April 1, 2013)

[MD/PhD Course]

	Maximum enrollment	Current number of students		
		Male	Female	Total
First year	—	0	1	1
Total	—	0	1	1

(as of April 1, 2013)

[Master's Course (Health Sciences)]

		Maximum enrollment	Current number of students		
			Male	Female	Total
Program in Nursing	First year	18	4	14	18
	Second year	18	5	14	19
Program in Radiological and Medical Laboratory Sciences	First year	20	18	10	28
	Second year	20	18	21	39
Program in Physical and Occupational Therapy	First year	10	11	5	16
	Second year	10	12	6	18
Total		96	68	70	138

(as of April 1, 2013)

[Doctoral Course (Health Sciences)]

		Maximum enrollment	Current number of students		
			Male	Female	Total
Program in Nursing	First year	6	0	6	6
	Second year	6	0	6	6
	Third year	6	4	19	23
Program in Radiological and Medical Laboratory Sciences	First year	7	7	4	11
	Second year	7	4	1	5
	Third year	7	3	5	8
Program in Physical and Occupational Therapy	First year	4	3	2	5
	Second year	4	5	0	5
	Third year	4	7	2	9
Total		51	33	45	78

(as of April 1, 2013)

[Master's Course]

		Maximum enrollment	Current number of students		
			Male	Female	Total
Program in Medical Science	First year	20	6	10	16
	Second year	20	16	7	23
Program in Medical Science, Healthcare Administration Course (Young Leaders' Program (YLP))	First year (government-sponsored)	10	7	4	11
Total		50	29	21	50

(as of April 1, 2013)

School of Medicine

[School of Medicine]

	Maximum enrollment	Current number of students		
		Male	Female	Total
First year	107	90	21	111
Second year	107	83	27	110
Third year	112	87	30	117
Forth year	112	91	17	108
Fifth year	108	86	22	108
Sixth year	100	81	24	105
Total	646	518	141	659
Reserch student and others	—	48	15	63

(as of April 1, 2013)

[School of Health Sciences]

	Maximum enrollment	Current number of students		
		Male	Female	Total
First year	200	58	151	209
Second year	206	61	158	219
Third year	226	65	161	226
Forth year	226	67	173	240
Total	858	251	643	894
Reserch student and others	—	1	0	1

(as of April 1, 2013)

Number of Graduate School of Medicine graduates

[Doctoral Course (Medical Sciences)]

Note: Figure exclude those who finished the PhD program without completing a dissertation, and include those who completed the program more quickly.

Major	Number of students who completed the program [2012 academic year]
Program in Integrated Molecular Medicine	14
Program in Cell Information Medicine	27
Program in Function Construction Medicine	12
Program in Health and Community Medicine	15
Total	68

(as of March 31, 2013)

[Master's Course (Health Sciences)]

Note: Include those who completed the program more quickly.

Major	Number of students who completed the program [2012 academic year]
Program in Nursing	17
Program in Radiological and Medical Laboratory Sciences	22
Program in Physical and Occupational Therapy	16
Total	55

(as of March 31, 2013)

[Doctoral Course (Health Sciences)]

Note: Figure exclude those who finished the PhD program without completing a dissertation, and include those who completed the program more quickly.

Major	Number of students who completed the program [2012 academic year]
Program in Nursing	2
Program in Radiological and Medical Laboratory Sciences	3
Program in Physical and Occupational Therapy	4
Total	9

(as of March 31, 2013)

[Master's Course]

● Number of students who completed the program

Major	Number of students who completed the program [2012 academic year]
Program in Medical Science	18 (8)

Note: Numbers in parentheses indicate additional number of YLP graduates

(as of March 31, 2013)

● Careers of those who completed the course

Proceed to higher education	Employed			Other
		Private sector	Medical institutions	
9	0	4	4	1 (8)

Note: Numbers in parentheses indicate additional number of YLP graduates

(as of March 31, 2013)

Number of School of Medicine graduates

[Number of successful undergraduates]

School	Period	Number of graduates
Aichi Medical School	October 1881 - June 1903	1,082
Aichi Prefectural Medical College	July 1903 - June 1920	1,967
Aichi Medical College	October 1920 - April 1931	427
Nagoya Medical College	May 1931 - March 1939	695
Nagoya Imperial University School of Medicine	April 1939 - September 1947	749
Nagoya Imperial University Medical College*	April 1944 - March 1950	744
Nagoya University School of Medicine (Under Old Educational System)	October 1947 - March 1954	688
Nagoya University School of Medicine	May 1949 - March 2013	8,060
School of Medicine		(5,670)
School of Health Sciences	March 2002 - March 2013	(2,390)
Total		14,412

* Renamed Nagoya University Medical College Clinic in October 1947

[Number of School of Medicine graduates in 2012 academic year]

		Number of graduates
Nagoya University School of Medicine	School of Medicine	109
	School of Health Sciences	228
Total		337

(as of March 31, 2013)

Number of students granted doctorates (MDs)

[Number of persons granted degrees]

Status	Number of degrees granted	
	2012 academic year	Total
Graduates of Doctor's Course	129	2,888
Doctor's Approved by Thesis	20	3,382
Total	149	6,270

*Total consists of the number of degrees granted on and after April 1, 1960.

(as of March 31, 2013)

[Number of degrees granted under old school system]

Period	Number of degrees granted
From: January 23, 1926 To: March 31, 1960	3,709

Number of foreign students/researchers and the like

[Number of foreign students accepted]

Status	Government-financed foreign students		Privately-financed foreign students		Total
	Male	Female	Male	Female	
Undergraduate Students	0	0	2	4	6
Research Students	0	0	0	0	0
Special Undergraduate Students	0	0	0	0	0
Graduate Students in Doctor's Course	19	14	30	32	95
Research Students in Doctor's Course	2	0	2	4	8
Special Graduate Students in Doctor's Course	0	0	0	0	0
Special Research Students	0	0	0	1	1
Japanese Studies Students *	0	0	0	0	0
Total	21	14	34	41	110
Visiting Research Fellow, etc.	83				

* Japanese Studies Students belong to the Education Center for International Students, Nagoya University. Those students become research students pursuing doctoral degrees at the Graduate School of Medicine after completing the program (April through September). (as of May 1, 2013)

[Number of foreign students by country/visiting research fellows, etc.]

Country	Foreign students (as of May 1, 2013)	Visiting research fellows, etc. [2012 academic year]
China	65	4
Korea	2	36
Taiwan	2	2
India	1	4
Indonesia	1	0
Cambodia	1	0
Thailand	1	7
Nepal	1	0
Pakistan	1	0
Bangladesh	16	1
Vietnam	0	2
Malaysia	2	0
Myanmar	1	0
Mongolia	1	0
Laos	1	0
Afghanistan	2	0
Israel	0	1
Iraq	0	3
Iran	0	1
Egypt	3	1
Ethiopia	1	0
Palau	0	2
U.S.A.	0	2
Canada	0	1
Brazil	0	1
Peru	1	0
Ireland	0	1
UK	0	2
Italy	1	1
Uzbekistan	1	0
Austria	0	1
Greece	1	0
Kirghiz	1	0
Poland	0	1
Spain	0	1
Germany	2	2
France	0	2
Bulgaria	0	1
Belgium	0	1
Romania	1	0
Russia	0	2
Total	110	83

Number of students sent out/accepted under international exchange agreements

	Country	School	Agreement established on	Number of students sent	Number of students accepted
Main Sister University	USA (7 institutions)	The University of North Carolina, School of Medicine at Chapel Hill	July 3, 1989	0	0
		Harvard University Medical School	November 28, 1995	0	0
		Tulane University, School of Medicine	November 29, 1995	2	3
		University of Pennsylvania, School of Medicine	March 26, 1997	0	0
		Duke University, School of Medicine	December 20, 2002	2	0
		Johns Hopkins University, School of Medicine	January 1, 2003	2	0
		The University of Texas, School of Medicine	August 8, 2007	0	0
	Poland (1 institutions)	Medical University of Gdanisk	July 31, 1995	2	0
	Germany (1 institutions)	Albert-Ludwigs-University Freiburg, School of Medicine	April 5, 2000	2	0
	UK (1 institutions)	Warwick University, Medical School	July 22, 2005	1	0
	Austria (1 institutions)	The Medical University of Vienna	July 12, 2005	2	2
	Mongolia (1 institutions)	Health Sciences University of Mongolia	August 26, 2004	0	0
	China (2 institutions)	Shanghai Jiao Tong University	December 1, 2009	2	2
		Peking University Health Science Center	November 10, 2010	0	2
	Taiwan (1 institutions)	National Taiwan University College of Medicine	June 17, 2011	0	2
	Korea (1 institutions)	Yonsei University Wonju College of Medicine	March 29, 2012	12	27
Vietnam (1 institutions)	Hue University of Medicine and Pharmacy	October 29, 2012	0	0	
Out of Main Sister University	North America			9	0
	South America			0	0
	Europe			6	0
	Asia			16	0
	Oceania			10	0
	Africa			0	0
	Total				68

(2012 academic year)

Number of exchange students sent from the Graduate School of Medicine/School of Medicine by country

Country	State	Number of students studying abroad
Afghanistan		1
USA	Kentucky	1
	North Carolina	3
	Pennsylvania	1
	Massachusetts	1
	Maryland	4
	Louisiana	2
UK		4
Australia		10
Austria		2
Canada		3
Thailand		5
Germany		4
Bangladesh		1
Poland		2
Malta		1
Korea		16
China		7
Total		68

Note: Figures include students sent abroad.

(2012 academic year)

Medical Library (including Health Science Library Room)

[Number of books collected]

	Number of books collected		
	Medical Library	Health Science Library	Total
Japanese Books	67,083	38,650	105,733
Foreign Books	87,894	7,049	94,943
Total	154,977	45,699	200,676

(as of April 1, 2013)

[Number of journal types]

	Number of types		
	Medical Library	Health Science Library	Total
Japanese Journals	1,864	853	2,717
Foreign Journals	2,399	174	2,573
Total	4,263	1,027	5,290

(as of April 1, 2013)

[Open-access journal] (website released in February and August)

Nagoya Journal of Medical Science

▶ http://www.med.nagoya-u.ac.jp/medlib/nagoya_j_med_sci/

Use survey of Skills & IT Laboratory

[Status of use by room]

Room	Number of uses [2012 academic year]
Skills lab	494
Medical examination and treatment simulation room	859
Microscope lab	198
Diagnostic imaging lab	92
Ultrasonography lab	15
Total	1,658

[Status of use by department]

Department	Number of uses [2012 academic year]
School of Medicine	906
School of Health Sciences	82
Graduate School of Medicine	118
Center for Medical Education	19
Hospital	473
Other	60
Total	1,658

Number of necrotomies

Academic year	Bodies donated for systemic anatomy (number of donor bodies)	Bodies for pathologic autopsy
2005	39	36
2006	49	42
2007	52	33
2008	45	38
2009	64	32
2010	49	29
2011	42	24
2012	57	39

Data on government-industrial-academic collaboration: intellectual property, collaborative/funded research

After university incorporation in 2004, Nagoya University has strived to achieve further effective use of intellectual property created at the university by securing ownership as a university organization as a whole, rather than by individual researchers. To be in line with cross-departmental policy, the Graduate School of Medicine disseminates its intellectual

properties as "seeds" to contribute to wider society, while effectively using them with the comprehensive strength of its organization. Additionally, there is close collaboration with companies, which is shifting from researchers' individual activities to the organizational activities of the university and expedited comprehensively.

[Patents]

●List of patents (filed, Graduate School of Medicine/University Hospital, domestic sole application)

Title of invention	Date of registration	Patent number	Inventor(s)
Cytodiagnostic marker easy-to-perceive with naked eye	March 11, 1997	2615427	YOSHIDA, Yasuhiko
Midkine receptor, method for suppressing survival of midkine-dependent cell and method for stimulating survival of midkine-dependent cell	July 8, 2005	3694731	MURAMATSU, Takashi/MURAMATSU, Hisako
Positive pressure chamber for extremities	January 9, 2009	4243647	HIRATA, Hitoshi et al.
Material for ameliorating skin tissue and method for producing the same	January 23, 2009	4247333	EBISAWA, Katsumi/KATOH, Ryuji/KAGAMI, Hideaki/UEDA, Minoru
External wound fixing device	May 15, 2009	4304321	HIRATA, Hitoshi/TATEBE, Masahiro/SHINOHARA, Takaaki
Biomarker for the estimation of acute renal disorder and prognosis of the disorder, and use of the biomarker	December 18, 2009	4423375	KADOMATSU, Kenji/YUZAWA, Yukio/HAYASHI, Hiroki/MATSUO, Seiichi et al.
Strong inhibition of vascular endothelial growth factor onset using siRNA	March 26, 2010	4480125	TAKEI, Yoshifumi/KADOMATSU, Kenji/MURAMATSU, Takashi
Optical interference tomograph	April 30, 2010	4501007	ITOH, Yasuki
Method for handling preserved cells	June 11, 2010	4528584	KAGAMI, Hideaki/UEDA, Minoru et al.
Activation inhibitor of mechanoreception (stretch activated) channel	January 7, 2011	4654432	NARUSE, Keiji/SOKABE, Masahiro
Detector for magnetic signal from cellular structure	January 21, 2011	4665105	NAKAYAMA, Shinsuke/UCHIYAMA, Tsuyoshi et al.
Method of detecting IgA nephropathy-related antibody	March 18, 2011	4701391	TORII, Keizo/OHTA, Michio/OKAMOTO, Akira
Incubation schedule management device and incubation schedule management program	July 29, 2011	4787964	KATOH, Ryuji/KAGAMI, Hideaki/UEDA, Minoru EBISAWA, Katsumi
Composition for inhibiting cancer metastasis	August 12, 2011	4797159	TAKAHASHI, Takashi/YANAGISAWA, Kiyoshi
Method for regenerating dentin from human pulp cells	December 16, 2011	4884678	KAGAMI, Hideaki/UEDA, Minoru et al.
Prophylactic or therapeutic pharmaceutical composition for nerve disorders	February 24, 2012	4929446	KADOMATSU, Kenji/ZHANG Hao-Qian/MURAMATSU, Takashi/UCHIMURA, Kenji
Cell preparation for erectile dysfunction or urinary incontinence containing adipose tissue-derived mesenchymal stem cells	March 23, 2012	4953335	YAMAMOTO, Tokunori/GOTOH, Momokazu/KOIDE, Naoshi/TAKEI, Yoshifumi/MATSUKAWA, Yoshihisa/FUNAHASHI, Yasuhito
Therapeutic agent for polyglutamine disease	March 30, 2012	4956737	SOBUE, Gen/ADACHI, Hiroaki/WAZA, Masahiro
Histogenetic composite material and its production method	April 27, 2012	4977854	UEDA, Minoru/MIZUNO, Hirokazu/KAGAMI, Hideaki/OKADA, Kunihiro/USAMI, Kazutada
Tissue-engineered bone composition	May 11, 2012	4982841	UEDA, Minoru/YAMADA, Yoichi/ITOH, Kenji/YOSHIMI, Ryoko
Dermal tissue improving material and use thereof	May 11, 2012	4982865	EBISAWA, Katsumi/UEDA, Minoru/KAGAMI, Hideaki/OKADA, Kunihiro/KATOH, Ryuji/Mazlyzam Abdulle Latif
Grafting material and agent for improving bone quality	June 1, 2012	5002816	UEDA, Minoru/YAMADA, Yoichi/YAJIMA, Akihiro/KOHGO, Tomoyuki
Cell preparation for treating prostate cancer containing adipose tissue-derived mesenchymal stem cells	July 13, 2012	5035737	YAMAMOTO, Tokunori/KOIDE, Naoshi/TAKEI, Yoshifumi/GOTOH, Momokazu
Application of actin-binding protein to diseases associated with cell motility	August 3, 2012	5051600	TAKAHASHI, Masahide/ENOMOTO, Atsushi/MUROHARA, Toyoaki
Method for establishing cell line of human malignant ovarian germ cell tumor, human malignant ovarian germ tumor, and use thereof	October 5, 2012	5098013	KIKKAWA, Fumitaka/SHIBATA, Kiyosumi
Application of actin-binding protein to diseases associated with cell motility	October 5, 2012	5098027	TAKAHASHI, Masahide/ENOMOTO, Atsushi/MUROHARA, Toyoaki
Pharmaceutical composition for treatment or prevention of liver cancer	October 12, 2012	5103608	NAKAO, Akimasa/SAKAKIMA, Katsutoshi
Method for control of electroporation apparatus	January 18, 2013	5176104	TAKEI, Yoshifumi/FUJISHIMA, Tatsuya/MURAMATSU, Takashi/KADOMATSU, Kenji
Pharmaceutical composition for treatment or prevention of intra-abdominal tumor lesions	February 1, 2013	5187676	NAWA, Akihiro/KAMAKURA, Maki/KIKKAWA, Fumitaka/NISHIYAMA, Yukihiro
Oligonucleotide set for detecting viruses, analyzing method and detection kit for EBV, CMV, and HHV-6	March 1, 2013	5205609	KIMURA, Hiroshi/NISHIYAMA, Yukihiro/WADA, Kaoru/KUBOTA, Naomi

(as of April 1, 2013)

● Number of patents (filed)

Organization	Domestic		Overseas		Total
	Sole application	Joint application	Sole application	Joint application	
Graduate School of Medicine	24	18	6	4	52
University Hospital	6	6	0	1	13
Total	30	24	6	5	65

(as of April 1, 2013)

[Collaborative research]

● Number of collaborative research projects carried out with the private sector and amount received

Academic year	School of Medicine		School of Health Sciences	
	Number of projects	Amount received (Unit: 1,000 yen)	Number of projects	Amount received (Unit: 1,000 yen)
2007	34	67,369	8	13,067
2008	38	74,205	12	14,764
2009	43	74,653	5	3,023
2010	38	76,357	12	5,433
2011	41	73,288	11	7,569
2012	40	117,904	12	13,211

Note: Figures include researcher costs and business-academic collaboration costs (indirect costs)

[Funded research]

● Number of projects/amount accepted for funded research expenses (including government-sponsored funds)

Academic year	School of Medicine		School of Health Sciences	
	Number of projects	Amount received (Unit: 1,000 yen)	Number of projects	Amount received (Unit: 1,000 yen)
2007	40	268,700	4	6,006
2008	38	376,149	5	3,680
2009	65	514,376	10	4,240
2010	68	416,558	7	11,769
2011	69	811,457	11	23,568
2012	76	747,212	14	27,699

Note: Including indirect expenses

For more information on collaborative/funded research, see the link below

▶ <http://www.med.nagoya-u.ac.jp/medical/1916/1917/index.html>

< Inquiries/administrative office in charge >

School of Medicine/Graduate School of Medicine
Research Assistance Subsection

TEL: +81-52-744-2429 FAX: +81-52-744-2881

E-mail: iga-kenkyu@post.jimu.nagoya-u.ac.jp

Summary of Grant-in-Aid for Scientific Research

[Summary of External Funds in 2012 academic year]

Categories	Number of project	Amount received (Unit: 1,000 yen)	Categories	Number of project	Amount received (Unit: 1,000 yen)
Grant-in-Aid for Scientific Research on Innovative Areas (Research in a proposed research area)	36	586,142	Grant-in-Aid for Challenging Exploratory Research (Fund-based Grant-in-Aid)	45	67,520
Grant-in-Aid for Scientific Research (S)	3	62,320	Grant-in-Aid for Young Scientists (A)	3	23,660
Grant-in-Aid for Scientific Research (A)	17	101,670	Grant-in-Aid for Young Scientists (B)	8	7,020
Grant-in-Aid for Scientific Research (B)	64	265,410	Grant-in-Aid for Young Scientists (B) (Fund-based Grant-in-Aid)	77	136,630
Grant-in-Aid for Scientific Research (C)	44	39,235	Grant-in-Aid for Research Activity Start-up	5	7,410
Grant-in-Aid for Scientific Research (C) (Fund-based Grant-in-Aid)	126	176,635	Grant-in-Aid for Encouragement of Scientists	4	2,300
Grant-in-Aid for Challenging Exploratory Research	1	300	Grant-in-Aid for JSPS Fellows	9	7,600
			Total	442	1,483,852

*Including indirect expenses and number of grants/amounts awarded to co-investigators.

News release

The Nagoya University Graduate School of Medicine selected research achievements with particularly strong social impact and published the details to the public as news. Within the

given period, the following twenty-one projects were released:

[List]

Date	Research details	Major investigators [Affiliation]*
May 7, 2012	Discovery of a beneficial fat-derived hormone which is effective for acute myocardial infarction	Prof. OUCHI, Noriyuki [Department of Molecular Cardiology Endowed Chair: Kowa] KAMBARA, Takahiro (Graduate student)/Prof. MUROHARA, Toyooki [Department of Cardiology]
May 30, 2012	Clarification of a molecular mechanism which causes cell migration in the spread of cancer (invasion and metastasis) and recovery from injury	TAKAGISHI, Maki (Researcher)/Prof. TAKAHASHI, Masahide [Department of Tumor Pathology]
May 31, 2012	Development of novel therapeutic method by microRNA for neurodegenerative diseases -Toward establishment of a novel therapeutic method for inhibiting the pathogenesis-	Prof. SOBUE, Gen/MIYAZAKI, Yu (Graduate student) [Department of Neurology] *Joint research with Jichi Medical University
June 12, 2012	Discovery of a new cause of hereditary thrombosis	MIYAWAKI, Yuhri (Graduate student)/Assistant Prof. TAKAGI, Akira/Prof. KOJIMA, Tetsuhito [Program in Radiological and Medical Laboratory Sciences] Prof. MATSUSHITA, Tadashi [Department of Blood Transfusion Service]
June 13, 2012	EBV-DNA copy number in blood is useful for predicting the tumor response and the occurrence of adverse events in patients with NK-cell lymphoma treated with SMILE therapy	Associate Prof. SUZUKI, Ritsuro [Department of HSCT Data Management and Biostatistics Endowed Chair: The Japan Society for Hematopoietic Cell Transplantation] Associate Prof. KIMURA, Hiroshi [Department of molecular Virology]
June 28, 2012	Bone regeneration using stem cell derived cytokines -Successful bone regeneration without cell transplant-	Prof. UEDA, Minoru/Assistant Prof. KATAGIRI, Wataru/OHSUGI, Masashi (Graduate student) [Department of Maxillofacial Surgery]
July 23, 2012	Successful induction of reproduction of lymphatic vessels using subcutaneous adipose tissue derived regenerative cells, and demonstration of improved lymphoedema in mice	Prof. MUROHARA, Toyooki/SHIMIZU, Yuuki (Graduate student) [Department of Cardiology]
July 27, 2012	Clarification of the carcinogenic mechanism of asbestos-induced mesothelioma	Prof. TOYOKUNI, Shinya/JUANG, Li (Researcher) [Department of Pathology and Biological Responses]
August 30, 2012	Occurrence of chromosomal alterations similar to human cancer in animal carcinogenesis models induced by iron overload	Assistant Prof. AKATSUKA, Shinya/Prof. TOYOKUNI, Shinya [Department of Pathology and Biological Responses]
September 5, 2012	Discovery of the effectiveness of a hormone secreted by the heart for acute myocardial infarction, and demonstration of effectiveness in large animals	Prof. OUCHI, Noriyuki [Department of Molecular Cardiology Endowed Chair: Kowa] Prof. MUROHARA, Toyooki/OGURA, Yasuhiro (Visiting researcher) [Department of Cardiology]
October 1, 2012	Naratriptan, a headache medication, restrains polyglutamine-mediated degeneration of motor neuron through inhibition of CGRP-1 secretion	Prof. SOBUE, Gen/Associate Prof. KATSUNO, Masahisa/MINAMIYAMA, Makoto (Former Researcher) [Department of Neurology] *Joint research with the University of Tokyo
October 10, 2012	Heart failure as a complication of diabetes and clarification of a new mechanism	BANDO, Yasuko K.(Lecturer)/Prof. MUROHARA, Toyooki [Department of Cardiology]
October 16, 2012	Successful development of PET/MRI combined high-resolution apparatus for small animal imaging -Promising for application to molecular imaging research including drug discovery-	Prof. YAMAMOTO, Seiichi/Prof. KATO, Katsuhiko [Program in Radiological and Medical Laboratory Sciences] *Joint research with Osaka University and Neomax Engineering Co., Ltd.
October 29, 2012	Improvement of diabetic neuropathies by transplant of neural crest-like cells derived from iPS cells induced in senescence-accelerated mice	Prof. ISOBE, Kenichi [Department of Immunology] Former Associate Prof. NAKAMURA, Jiro/Prof. OISO, Yutaka [Department of Endocrinology and Diabetes]
November 29, 2012	Regenerative treatment for periodontal disease using stem cell culture medium -Successful regeneration of periodontal tissue without cell transplant; Clinical studies initiated in Nagoya University Hospital and so forth-	Prof. UEDA, Minoru/Assistant Prof. KATAGIRI, Wataru/INUKAI, Takeharu (Graduate student) [Department of Maxillofacial Surgery]
January 15, 2013	Adolescent stress causes disorder in neural epigenetic mechanisms and affects behavioral patterns and the nervous system in adults	Prof. OZAKI, Norio/MATSUMOTO, Yurie (Graduate student) [Department of Psychiatry] *Joint research with Meijo University, Kyoto University, and a university in the U.S.
January 25, 2013	The heat shock factor 1 (HSF-1) influences the pathological lesion distribution of spinal and bulbar muscular atrophy	Prof. SOBUE, Gen/Associate Prof. KATSUNO, Masahisa/KONDO, Naohide (Researcher) [Department of Neurology] *Joint research with Yamaguchi University
February 27, 2013	Changing body fluid, interstitial fluid, and culture medium into anticancer drugs by plasma -Clarification of new intracellular molecular mechanism of antitumor effects by solution irradiated with plasma-	Clinical Prof. MIZUNO, Masaaki [Nagoya University Hospital Center for Advanced Medicine and Clinical Research] Prof. KIKKAWA, Fumitaka [Department of Obstetrics and Gynecology] *Joint research in Medicine-Engineering Collaboration with Plasma Nanotechnology Research Center and NU Eco-Engineering Co., Ltd.
March 5, 2013	The receptor function of TLR4-MD-2 complex, the LPS receptor, is negatively regulated by an endogenous ligand, globotetraosylceramide	Center of Excellence (COE) Extraordinary Assistant Prof. KONDO, Yuji/Prof. FURUKAWA, Koichi [Department of Molecular and Cellular Biology]
March 13, 2013	Development of clothes which can measure chest movement during breathing-The "Knowledge Hub" Priority Research Project-	Prof. KAWABE, Tsutomu [Program in Radiological and Medical Laboratory Sciences] *Joint research in "Development of Early-Phase Diagnostic Technology" for "Knowledge Hub Aichi"
March 18, 2013	Adipose-derived mesenchymal stem cells cultured in low serum medium ameliorate crescentic glomerulonephritis by inducing immunomodulatory macrophages	FURUHASHI, Kazuhiro (former graduate student)/Associate Prof. MARUYAMA, Shoichi/TSUBOI, Naotake (Lecturer) [Department of Nephrology]

*Titles and affiliations are at the time of publication of the News Release.

[Commentary]

Discovery of a beneficial fat-derived hormone which is effective for acute myocardial infarction

Obesity is a risk factor for ischemic heart diseases—myocardial infarction, in particular—and its pathology is associated with fat-derived hormones. Of them, the investigators focused on CTRP9 and demonstrated its myocardial protective effects in animal models of acute myocardial infarction. The study showed that CTRP9 has anti-apoptotic effects and is a beneficial fat-derived hormone which inhibits acute myocardial disorder, suggesting that it can be a target molecule for developing treatments for myocardial infarction

Published in: The Journal of Biological Chemistry

Development of novel therapeutic method by microRNA for neurodegenerative diseases—Toward establishment of a novel therapeutic method for inhibiting the pathogenesis—

The investigators developed a therapeutic method which enables inhibition of the pathogenesis of spinal and bulbar muscular atrophy, a neurodegenerative disease, from a novel approach using a ribonucleic acid called microRNA and adeno-associated virus vector. In addition, the investigators revealed common mechanism associated with micro RNA between a mouse model and humans. For the first time in the world, microRNA therapy was applied to this neurodegenerative disease; the method will potentially be applied to other neurodegenerative diseases and used in clinical practice.

Published in: Nature Medicine

EBV-DNA copy number in blood is useful for predicting the tumor response and the occurrence of adverse events in patients with NK-cell lymphoma treated with SMILE therapy

In NK-cell lymphoma, fragmented DNA of EB virus is known to present in peripheral blood. In this study, investigators analyzed the EBV-DNA copy number in blood in participants of the SMILE phase II study. The EBV-DNA copy number was useful not only to predict the tumor response by SMILE therapy but also was useful to predict the occurrence of adverse events.

Published in: Clinical Cancer Research

Successful induction of reproduction of lymphatic vessels using subcutaneous adipose tissue derived regenerative cells, and demonstration of improved lymphoedema in mice

This study demonstrated that the transplant of adipose derived regenerative cells (ADRC), which are promising novel stem cells for transplant in regenerative medicine, to the tissue of lymphoedema enhances the regeneration of lymphatic vessels due to ADRC accelerating the production of growth factors in the damaged tissue, resulting in improvement of lymphoedema. The findings suggest that the regeneration of lymphatic vessels achieved by cell transplant may become a novel therapy for lymphoedema, for which no radical treatment has been available to date.

Published in: Journal of the American Heart Association

Clarification of a molecular mechanism which causes cell migration in the spread of cancer (invasion and metastasis) and recovery from injury

This study identified the molecular mechanism of non-canonical Wnt signaling which causes the spread of cancer (invasion and metastasis) and showed that Daple regulates the migration of cell population caused by the non-canonical Wnt signaling pathway. In addition, the investigators revealed that this signaling regulation by Daple is important for the healing of skin wounds. It is hoped that this clarification of the molecular mechanism will lead to the development of new therapeutic methods for inhibiting the invasion and metastasis of cancer, in addition to the benefit of healing wounds.

Published in: Nature Communications

Discovery of a new cause of hereditary thrombosis

This study analyzed the unknown thrombotic causative factors that constitute the genetic risk of venous thrombosis and found that abnormality in prothrombin, a blood coagulation factor, which usually leads to bleeding, conversely causes thrombosis. It is hoped that the identification of the pathology of blood coagulation factors will result in the development of new therapeutic methods and prophylaxis in thrombotic diseases including venous thrombosis, cerebral infarction, and myocardial infarction, the occurrence of which is increasing in Japan as the population ages.

Published in: New England Journal of Medicine

Bone regeneration using stem cell derived cytokines—Successful bone regeneration without cell transplant—

Risks including malignant transformation of cells interfere with the wider application of stem cell transplants. For the first time in the world, this study succeeded in bone regeneration using conditioned media from stem cells without performing transplantation, demonstrating that the transplant of cytokines only contained in the conditioned media from stem cells regenerates bone that is equivalent to the bone regenerated by cell transplant. Concomitant use with existing bone prosthetic materials is also possible and is expected to regenerate bone.

Published in: Tissue Engineering Part A

Clarification of the carcinogenic mechanism of asbestos-induced mesothelioma

The investigators showed that, in the carcinogenic process leading to the onset of mesothelioma caused by all commercially-used asbestos fibers (Asbestos), the pathology of iron overload is important. The control over excess iron may lead to the prevention of carcinogenesis, offering a hope to those who have been exposed to asbestos that prophylactic strategies may be developed.

Published in: The Journal of Pathology

[Commentary]

Occurrence of chromosomal alterations similar to human cancer in animal carcinogenesis models induced by iron overload

Iron, if overloaded in a living body, causes a chemical reaction that generates reactive oxygen species and causes oxidative stress to cells. The study found that the oxidative stress-induced animal carcinogenesis model recapitulates chromosomal alterations equivalent to human cancers, suggesting the involvement of iron-induced oxidative stress as a common causative factor in general human cancers.

Published in: PLoS ONE

Naratriptan, a headache medication, restrains polyglutamine-mediated degeneration of motor neuron through inhibition of CGRP-1 secretion

This study showed that naratriptan—a therapeutic drug for migraine— inhibits polyglutamine-related motor neurodegeneration in spinal and bulbar muscular atrophy, a neurodegenerative disease, via inhibiting the release of CGRP1 which is closely associated with the pathogenesis of the disease. This has resulted in clarification of the pathological mechanism of the disease and development of a therapeutic method. It is promising that these findings will be applied to other neurodegenerative diseases for which no effective treatment has been reported thus far, and will be used in clinical practice.

Published in: Nature Medicine

Successful development of PET/MRI combined high-resolution apparatus for small animal imaging—Promising for application to molecular imaging research including drug discovery—

In collaboration with Neomax Engineering Co., Ltd., the investigators succeeded in developing a PET/MRI integrated high-resolution apparatus for small animal imaging, which enables simultaneous imaging of positron-emission tomography (PET) and magnetic resonance imaging (MRI). With the device, high-contrast MRI images and the distribution of positron-emitting isotopes can be obtained for the same site and simultaneously. In the future, the apparatus will be useful in molecular imaging research using small animals for drug discovery and so forth. The device also offers commercial potential as the world's first PET/MRI combined apparatus for small animals.

Published in: Medical Physics

Regenerative treatment for periodontal disease using stem cell culture medium—Successful regeneration of periodontal tissue without cell transplant; clinical studies initiated in Nagoya University Hospital and so forth—

In the transplantation of stem cells, the risk of malignant transformation of cells, cost, and various other limitations have hindered wider implementation. The investigators, for the first time in the world, succeeded in regenerating periodontal tissue without performing stem cell transplant using conditioned medium from the cultured stem cells, thus finding that the "regeneration factors" including cytokines secreted from stem cells induce stem cells in the body to regenerate periodontal tissue. These regeneration factors can be formulated into preparations, which may lead to drug discovery for the treatment of periodontal disease.

Published in: Biochemical and Biophysical Research Communications

Discovery of the effectiveness of a hormone secreted by the heart for acute myocardial infarction, and demonstration of effectiveness in large animals

The investigators focused on a hormone secreted by the heart, FSTL1, and performed systemic administration of human FSTL1 in small/large animal models of acute myocardial infarction before the occurrence of myocardial ischemia. The results showed attenuated myocardial infarct size and recovery of cardiac function, demonstrating the cardioprotective effect of human FSTL1. It was suggested that the administration of FSTL1 at the time of acute myocardial infarction gives a cardioprotective effect, which may be a target for the development of therapeutic agents for acute myocardial infarction.

Published in: Circulation

Heart failure as a complication of diabetes and clarification of a new mechanism

The investigators identified that abnormal activity of serine protease DPP4, which is expressed in coronary microvessels, is one of the causes of cardiac diastolic dysfunction (cardiac dilatation dysfunction), which is recognized as a complication of diabetes mellitus. Thus, the study demonstrated in an animal model that DPP4 inhibitors, which are therapeutic drugs for diabetes mellitus, improve cardiac dilatation dysfunction via the action of improving diabetic cardio/microvascular insufficiency, suggesting that interventional treatment for cardio/microvascular insufficiency may be an effective therapy for cardiac dilatation dysfunction.

Published in: Circulation

Improvement of diabetic neuropathies by transplant of neural crest-like cells derived from iPS cells induced in senescence-accelerated mice

The investigators found that transplant of neural crest-like cells (NCL cells) derived from iPS cells induced in senescence-accelerated mice is effective for diabetic polyneuropathy (DPN). The study showed that the findings may be applied to regenerative medicine utilizing iPS cells for advanced DPN, for which no effective therapy has been discovered to date. The study also suggested that even iPS cells collected from the aged are useful for regenerative medicine for complications of diabetes mellitus.

Published in: Cell Transplantation

Adolescent stress causes disorder in neural epigenetic mechanisms and affects behavioral patterns and the nervous system in adults

With regard to the mechanism by which interactions between genetic factors and environmental factors in childhood influence adulthood, the study showed that a continuous epigenetic change that occurred in the dopaminergic nervous system in the brain via an increase in levels of stress hormones influences behavioral patterns in adulthood. It is hoped that the findings will lead to countermeasures for psychiatric disorders, stimulating studies on the mechanism of occurrence of psychiatric disorders and the development of prophylactic methods to prevent onset as well as therapeutic agents.

Published in: Science

[Commentary]

The heat shock factor 1 (HSF-1) influences the pathological lesion distribution of spinal and bulbar muscular atrophy

While neurodegenerative diseases are characterized by pathological lesion selectivity, the molecular mechanism was unknown. This study showed that the heat shock factor 1 (HSF-1) influences the lesion distribution in spinal and bulbar muscular atrophy, a neurodegenerative disease. Deletion of HSE-1 expanded the pathological lesion of this disease, while overexpression of HSE-1 mitigated the pathology. In the future, further studies on other neurodegenerative diseases and clinical application are anticipated.

Published in: Nature Communications

The receptor function of TLR4-MD-2 complex, the LPS receptor, is negatively regulated by an endogenous ligand, globotetraosylceramide

Lipopolysaccharides (LPSs), the component of Gram-negative bacilli, act primarily on vascular endothelial cells and elicit lethal injurious effects. The investigators showed that globotetraosylceramide (Gb4), a globo-series glycosphingolipid, attenuates the action of LPSs by binding to the LPS receptor, TLR4-MD-2. In addition, the study of Gb4 injection after LPS infusion suggested that Gb4 may be used to treat endotoxic shock.

Published in: Proceedings of the National Academy of Sciences USA

Adipose-derived mesenchymal stem cells cultured in low serum medium ameliorate crescentic glomerulonephritis by inducing immunomodulatory macrophages

The investigator showed in animal experiment that special preparation of adipose tissue-derived stem cells (called LASC), obtained by a unique low serum culture method, are highly effective for the treatment of rapidly progressive nephritis which may require dialysis. Thus, the study demonstrated that, as one of therapeutic mechanisms, LASC decreases inflammatory macrophages and increases immunomodulatory macrophages. It is hoped that administration of LASC in patients with rapidly progressive nephritis may attenuate tissue injury at local sites efficiently while decreasing systemic adverse reactions.

Published in: Journal of the American Society of Nephrology

Changing body fluid, interstitial fluid, and culture medium into anticancer drugs by plasma –Clarification of new intracellular molecular mechanism of antitumor effects by solution irradiated with plasma–

In the framework of "Plasma Medical Innovation", a Scientific Research on Innovative Areas supported by the MECSST, the investigators developed a technology which may cure disseminated carcinoma (intrathecal dissemination, intra-abdominal dissemination) for which no effective therapeutic methods have been found, using non-equilibrium atmospheric pressure plasma which was independently developed by the investigators, in addition to ordinary solid tumors. It is hoped that, in the future, the intracellular molecular mechanism will be identified in more detail and the findings will be applied to plasma medicine based on scientific principles.

Published in: Plasma Medicine Journal

Development of clothes which can measure chest movement during breathing –The "Knowledge Hub" Priority Research Project–

In a joint research "Development of Early-Phase Diagnostic Technology" for the "Knowledge Hub Aichi" Priority Research Project, the investigators developed a new type of system which enables the detection of breathing conditions by installing sensor functions in clothes. The developed product is made of the same material as ordinary clothing and can measure the breathing movements of the chest during activities in daily living. It is hoped that the product will be used for the management of breathing functions and monitoring of exercise.

For more News Releases, see the link below

▶ <http://www.med.nagoya-u.ac.jp/english01/3403/3407/index.html>

Extension courses at Tsurumai Campus

Since 2005, the School of Medicine and the University Hospital have co-hosted Extension Courses at Tsurumai Campus annually as open seminars for the public. These focus on topics of modern interest and that are useful for everyday life.

The seminars are attended by a wide range of people from those in their 20's to 80's, and the number of repeat attendees is steadily increasing.

Every seminar attracts an eager audience who are keen to ask questions, reflecting people's strong interest in these courses.

The Extension Courses at Tsurumai Campus provide a valuable forum for social exchange among the School of Medicine, the University Hospital, and the general public. Thus, we are playing an important role in connecting with the local community and contributing to society.

[History of extension courses at Tsurumai Campus]

Academic year	Seminar	Date	Number of participants
2005	In the news! What is metabolic syndrome?	December 10	About 100
2006	Ever-evolving cancer treatments: Heartening news and a good education	October 29	85
2007	Futuristic treatments within our grasp — is it really possible?!	October 27	65
2008	Breakthroughs with our aging population — You're getting older and so am I	October 4	About 130
2009	Building sound body and mind to stay independent	November 21	About 200

[Extension courses held during 2010 academic year]

Food: A direct path to health

〈Date〉 November 20, 2010

〈Number of people participated〉 about 230

In Japan, the cost of social security benefits packages including medical care coverage have reached a record level, making disease prevention more important than ever. To respond to this trend, the three lecturers gave seminars on the topic of "nutrition", as one of the three core elements of health. Nutrition can also be thought of as "diet".

"Lifestyle-related Diseases: Better or worse, it depends on what and how you eat", SUZUKI, Tomio, Deputy Director, Department of Clinical Nutrition / "Compatibility of Medicines and Foods – Learn from the Mechanism –", YANO, Kohji, Chief for the Department of Hospital Pharmacy / "Issues regarding Nutrition for the Elderly, Especially Eating Disorders and Malnutrition", Associate Prof. KUZUYA, Masafumi



(The job title is a thing at the time of the lectures)

[Extension courses held during 2011 academic year]

What is Constitution? Its relationship with drug efficacy and lifestyle diseases

〈Date〉 November 19, 2011

〈Number of people participated〉 about 180

People's constitutions vary significantly; the differences are classified into those due to "heredity", and those due to the "environment". Recent progress in science has revealed many facts regarding genetic constitution. The three lecturers gave seminars focusing on "genetic constitution".

"Genetic constitution: The findings so far", Prof. HAMAJIMA, Nobuyuki / "Effects of Drugs and Genetic Constitution—Personality that Decides Drug Effectiveness", ISHIKAWA, Kazuhiro, Deputy Manager for the Department of Hospital Pharmacy / "Lifestyle and Genetic Constitution—Which is stronger?", Associate Prof. HAMADA, Yoji, Endowed Chair



[Extension courses held during 2012 academic year]

Disease Prevention: For Healthy Ageing

〈Date〉 November 17, 2012

〈Number of people participated〉 about 150

The three lecturers gave seminars covering broad areas, ranging from familiar topics such as diseases of the elderly in a society of longevity, cancer and so forth, to the current situation of healthcare in the world including developing countries.

"Prevention of Diseases and Frailty in the Aged in a Society of Longevity", Prof. KUZUYA, Masafumi / "Prevention of Cancer in a Society of Longevity", Prof. HAMAJIMA, Nobuyuki / "Thinking of World Health", Prof. AOYAMA, Atsuko



Locations

Tsurumi Campus



Traveling time
25 min.
(via subway/JR line)

Traveling time
30 min.
(via subway/JR line)



Higashiyama Campus



Daiko Campus

Traveling time
20 min.
(via subway)

Tsurumai Campus map



University Hospital

- ① Outpatient Building
- ② Central Consultation Building
- ③ Ward Building
- ④ Residence for Nurses A
- ⑤ Residence for Nurses B
- ⑥ Old Ward Building West
- ⑦ Old Ward Building East
- ⑧ Oasis Cube (welfare facility)

Graduate School of Medicine/School of Medicine

- A Medical Science Research Building 1
- B Medical Science Research Building 2
- D Basic Medical Research Building
- E Basic Medical Research Building Annex
- F Center for Promotion of Medical Research and Education (Experimental Animals Division)
- G Medical Library / Co-op Cafeteria
- H Welfare Facility
- I Kakuyu Kaikan (Alumni Hall)
- J Radioisotope Research Center
- K Human Anatomy Laboratory

General Affairs Division	② Central Consultation Building	4F-7F
Personnel Affairs and Labor Group	① Outpatient Building	4F
Student Affairs Division	D Basic Medical Research Building	1F
Management and Planning Division	① Outpatient Building	4F
Accounting Division	① Outpatient Building	4F

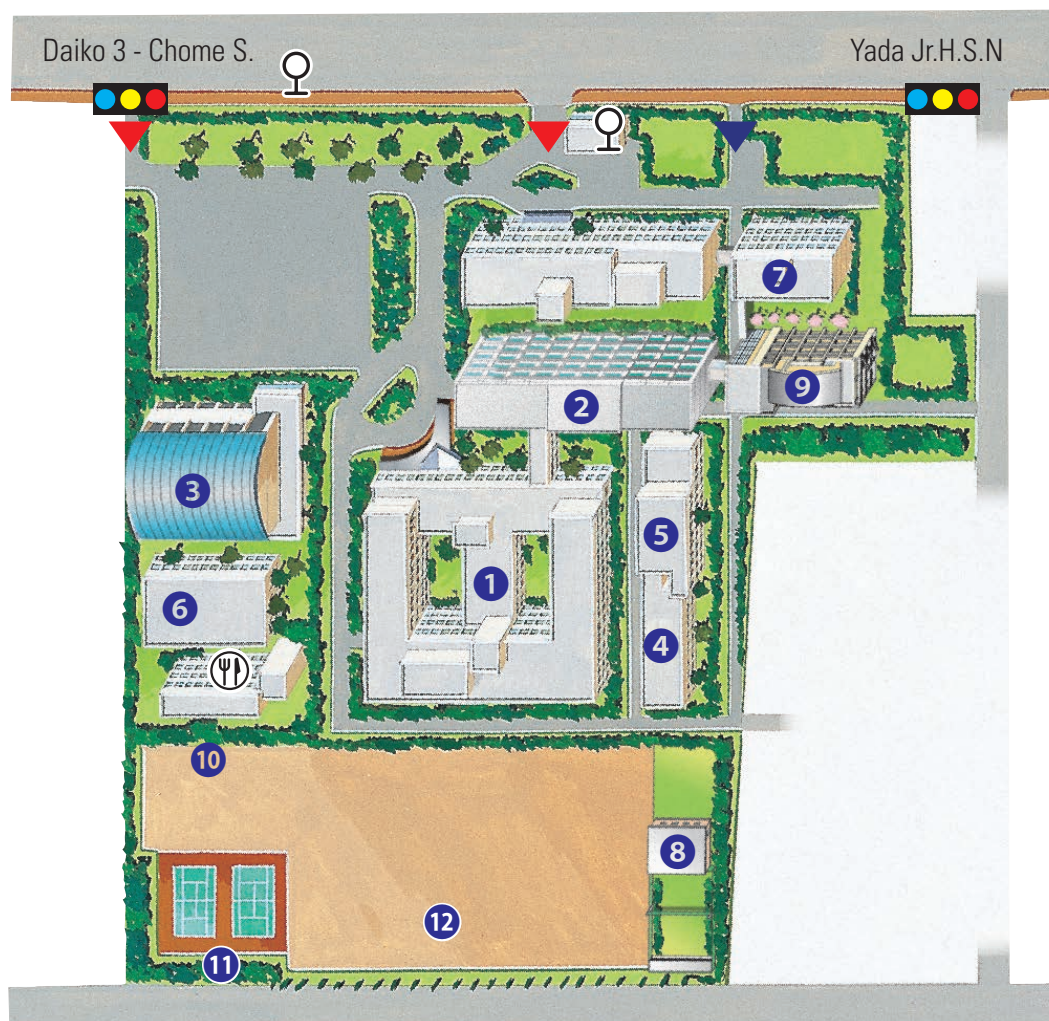
Facilities Management Group	① Outpatient Building	4F
Hospital Affairs Division	① Outpatient Building	1F
Medical Service Division	② Central Consultation Building	2F
Clinical History Management Section	① Outpatient Building	4F

(as of April 1, 2013)

[Guide map for Graduate School of Medicine/School of Medicine] (as of May 1, 2013)

13F	Dermatology, Plastic and Reconstructive Surgery, Pediatric Surgery		
12F	Orthopedic Surgery, Rheumatology, Otorhinolaryngology		
11F	Ophthalmology, Oral and Maxillofacial Surgery		
10F	Psychiatry, Neurosurgery		
9F	Gastroenterology and Hepatology, Nephrology, Neurology		
8F	Radiology, Infectious Diseases, Clinical Management Medicine, Department of Clinical Oncology and Chemotherapy		
7F	Hematology, Cardiology, Pathology and Laboratory Medicine	Public Health and Health Systems, Occupational and Environmental Health, Division for Medical Research Engineering, Global COE Promotion Office	
6F	Respiratory Medicine, Endocrinology and Diabetes, Geriatrics	Preventive Medicine, Physiology 1, Physiology 2	
5F	Obstetrics and Gynecology, Pediatrics	Immunology, Cancer Biology, Molecular Carcinogenesis	
4F	Urology, Anesthesiology	Pharmacology, Bacteriology, Neurogenetics	Lecture Room 3, Lecture Room 4
3F	Gastroenterological Surgery 1, Vascular Surgery, Cardiac Surgery, Thoracic Surgery	Biochemistry 1, Biochemistry 2, Molecular Virology	Department of Renal Replacement Therapy, Department of Metabolic Medicine, Department of Transplant Immunology, Biochemistry 2, Cardiology, Lecture Room 1, Lecture Room 2, Seminar Room
2F	Gastroenterological Surgery 2, Transplantation Surgery, Breast and Endocrine Surgery, Emergency and Critical Care Medicine	Pathology 1, Pathology 2, Anatomy 1	Department of Molecular Cardiology Endowed Chair: Kowa, Department of Advanced Research of Gastroenterology, Human Nutrition, Molecular Pathology, Seminar Room, Lounge
1F	General Medicine, Department of Hospital Pharmacy, Convenience store	Anatomy 2, Anatomy 3, Legal Medicine and Bioethics, Division for Medical Research Engineering	Office of International Affairs, Young Leaders' Program (YLP), Meeting Rooms, Changing Rooms, Administration Office
B1F	Meeting Room, Hand Surgery		
	Medical Science Research Building 1	Medical Science Research Building 2	Basic Medical Research Building

Daiko Campus map



- ① School of Health Sciences (South Building)
- ② School of Health Sciences (Main Building)
- ③ Gymnasium
- ④ Radioisotope Laboratory
- ⑤ Energy Center
- ⑥ Student Hall
- ⑦ School of Health Sciences (Annex)
- ⑧ Kyudo (Japanese Archery) Hall
- ⑨ School of Health Sciences (East Building)
- ⑩ Researchers Village Daiko
- ⑪ Tennis Court
- ⑫ Ground

- ♀ Bus Stop
- ☺ Cafeterias & Shops
- ▲ Car Entrance
- ▲ Entrance

Land and buildings

Tsurumai Campus

Area (land) 89,137m ²	Location 65 Tsurumai-cho, Showa-ku, Nagoya	Buildings [building area] 35,252m ² [total floor area] 202,139m ²
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Name of building	Architecture	Building area (m ²)	Total floor area (m ²)
① Outpatient Building	RC4	5,309	19,446
② Central Consultation Building	SRC7-2	5,881	43,612
③ Ward Building	S14-2	4,721	52,297
④ Residence for Nurses A	SRC10	675	6,158
⑤ Residence for Nurses B	RC6	563	2,741
⑥ Old Ward Building West	RC6-1	1,584	14,525
⑦ Old Ward Building East	(Included in Old Ward Building West)		
⑧ Oasis Cube (Welfare Facility)	S1	604	595
Ⓐ Medical Science Research Building 1	S13-2	1,493	20,875
Ⓑ Medical Science Research Building 2	RC7	1,515	10,300
Ⓓ Basic Medical Research Building	RC4-1	1,651	6,585
Ⓔ Basic Medical Research Building Annex	RC5	695	3,158
Ⓕ Center for Promotion of Medical Research and Education (Experimental Animals Division)	RC7-1	889	6,488
Ⓖ Medical Library / Co-op Cafeteria	RC4-1	974	3,138
Ⓗ Welfare Facility	RC3	308	760
Ⓘ Kakuyu Kaikan (Alumni Hall)	RC3	550	1,354
Ⓙ Radioisotope Research Center	RC4・RC2	695	1,803
Ⓚ Human Anatomy Laboratory	RC1	301	301
Others		6,844	8,003
Total		35,252	202,139

(as of April 1, 2013)

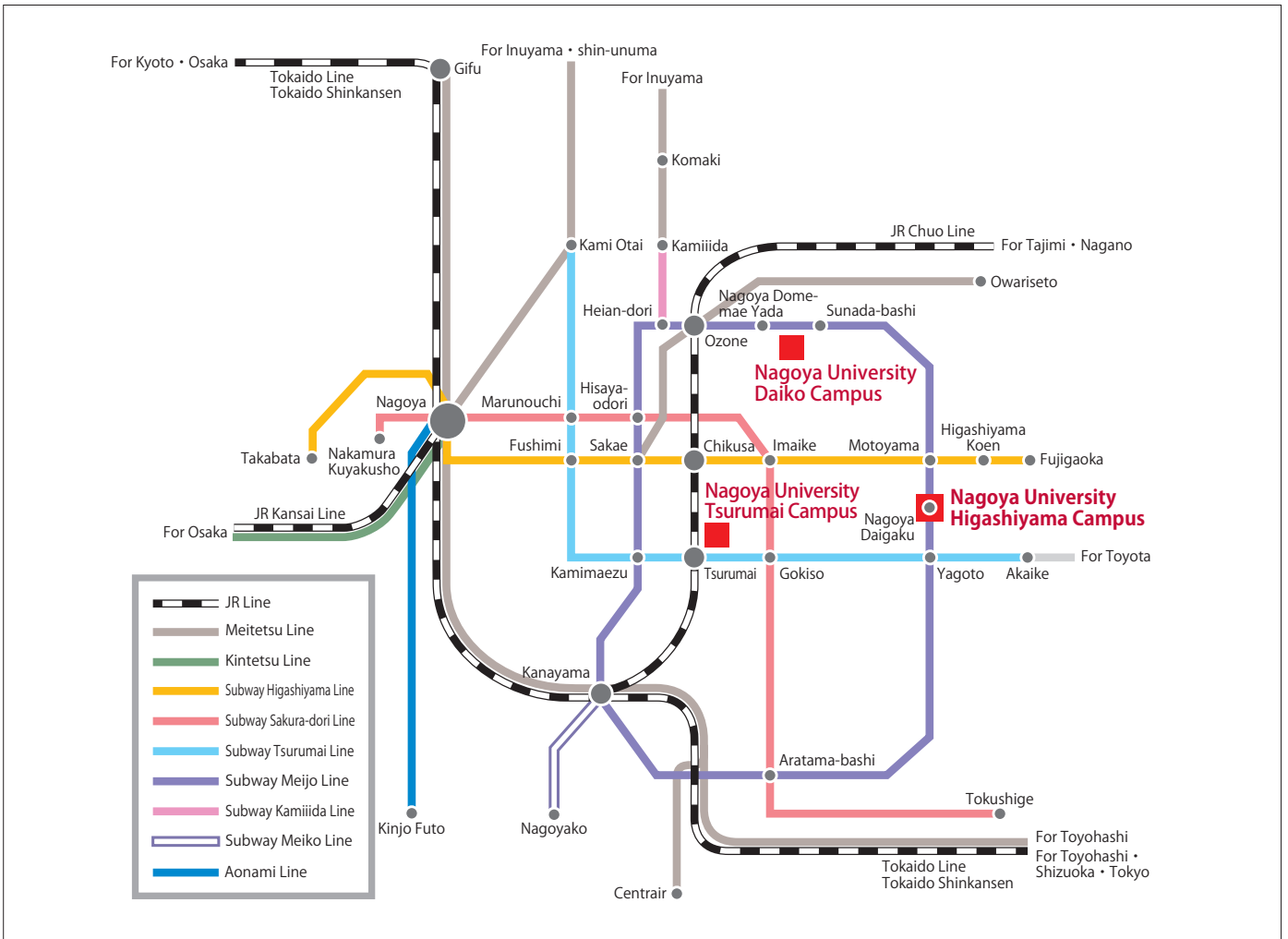
Daiko Campus

Area (land) 48,463m ²	Location 1-20 Daiko-Minami 1-chome, Higashi-ku, Nagoya	Buildings [building area] 10,470m ² [total floor area] 28,429m ²
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Name of building	Architecture	Building area (m ²)	Total floor area (m ²)
① School of Health Sciences((South Building))	RC4	3,021	8,067
② School of Health Sciences((Main Building))	RC5	1,414	5,835
③ Gymnasium	SRC1	1,369	1,369
④ Radioisotope Laboratory	RC1	353	353
⑤ Energy Center	RC2	606	894
⑥ Student Hall	RC2	678	1,338
⑦ School of Health Sciences((Annex))	RC4	579	2,431
⑧ Kyudo (Japanese Archery) Hall		88	88
⑨ School of Health Sciences((East Building))	RC4	843	3,331
⑩ Researchers Village DAIKO	RC3	280	720
⑪ Tennis Court		—	—
⑫ Ground		—	—
Others		1,239	4,003
Total		10,470	28,429

(as of April 1, 2013)

Access map



To Tsurumai Campus

- Take the JR Chuo Line to Tsurumai Sta. (Meidai Hospital exit), then walk 3 min.
- Take the Subway Tsurumai Line to Tsurumai Sta., then walk 8 min.
- Take the City Bus from Sakae Terminal to Meidai Byoin bus stop via Sakae Route No. 18 bound for Myoken-cho

To Daiko Campus

- Take the JR Chuo Line to Ozone Sta. (North gate), then walk 15 min.
- Take the Subway Meijo Line to Nagoya Dome-mae Yada Sta., then walk 10 min., or to Sunada-bashi Sta., then walk 7 min.
- Take the City Bus from Ozone Terminal to Daiko 3-chome bus stop via Meieki Route No. 15 bound for Sunada-bashi
- Take the Guideway Bus to Nagoya Dome-mae Yada Sta., then walk 10 min., or to Sunada-bashi Sta., then walk 7 min.

To Higashiyama Campus

- Take the Subway Meijo Line to Nagoya Daigaku Sta.
- Take the City Bus from Sakae Terminal to Nagoya Daigaku bus stop via Sakae Route No. 16/17 bound for Nagoya Daigaku

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