**Topics**

### Education

**AO Entrance Examination for International Medical Professionals Course**

Following our educational philosophy of training medical professionals to fulfill constructive roles in the international community through education, research, and health-care activities, we have introduced the AO Entrance Examination for International Medical Professionals Course (five places). Successful applicants in this examination will be trained to (1) acquire language skills necessary in the international community to practice world-standard medical care, and, as clinical doctors, treat and care for patients, (2) contribute to the development of medicine by conducting the most advanced medical research, presenting in international conferences, and publishing papers, and (3) recognize problems in regional medicine around the world, find solutions to them, and improve medical treatments, health care, and welfare in regional medicine. We conducted the first AO Entrance Examination for International Medical Professionals Course in November 2017, and after screening more than 30 applicants, we admitted two successful applicants to our university.

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**Plan to Raise Cancer Medicine Specialists to Meet Newly Emerging Diverse Needs – Hokkaido Cancer Medicine Specialists that Connect People with Medicine**

In AY 2017, the Plan to Raise Cancer Medicine Specialists to Meet Newly Emerging Diverse Needs in the third phase of the Training Plan for Cancer Professionals was adopted, and our university and three medical universities in Hokkaido will collaboratively work on the plan, applying characteristic features of each university.

The specific purpose of this plan is to foster excellent cancer professionals who are able to accelerate the effort to put genome medicine to practical use, to work to cure and prevent childhood cancers and rare cancers, and to treat cancers according to life stages. To achieve this, our university offers Masters’ and Ph.D. students two courses: a training program for clinicians in cancer genomic medicine, and a training program for oncology nurses.

Our university also provides up-to-date cancer information by offering an intensive course for doctors, nurses, pharmacists, radiologists, and medical social work, a training course for regional cancer team-approach medicine professionals, lectures open to the public to raise medical awareness, community lectures held at nearby medical organizations, and seminars using our telemedicine system. This way, our university promotes regional medicine collaboratively with medical institutes to improving cancer treatments in the Asahikawa area.

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### Governance

**Affiliation Agreement with Ashibetsu City**

On February 3rd, 2018, Asahikawa Medical University signed a cooperation agreement with Ashibetsu City.

This agreement, inspired by the 2020 Tokyo Olympic and Paralympic Games, stipulates ways in which we will utilize both parties’ recourses and establish a mutual cooperative relationship, cooperating to encourage and initiate sports participation, support sports participants, conduct research and education on medical sports science, and vitalize local communities with sports.

The signing ceremony was held in Asahikawa. Akitoshi Yoshida, President of Asahikawa Medical University, and Mitsugu Ogihara, Mayor of Ashibetsu City, signed the agreement and it was witnessed by Seiko Hashimoto, a member of the House of Councilors. President Yoshida said at the ceremony that he would like to contribute to sports using medical expertise such as the telemedicine system.
Receiving an Inspiration Prize of Hokkaido Scientific and Technical Award

In February 2018, Professor Takayuki Kunisawa from the Department of Anesthesiology and Critical Care Medicine of our university received an Inspiration Prize (Hokkaido Scientific and Technical Awards) for his project titled The Development and Practice of a Monitoring Method to Provide Patients under Anesthesia with Safety. While surgical operations require the relief of uneasiness and pain and the stabilization of blood pressure and the pulse by administering various drugs, a fine adjustment of a dose is a challenge because measuring the concentration of medicines in the blood during operations is impossible. Therefore, the prediction of the drug concentration and the dose adjustment with the aid of a computer is necessary, which is what Professor Kunisawa has been clinically taking the lead in performing, providing patients with safety. He is the world’s first to calculate the concentration of hydrochloric acid lanidolol in the blood. During surgical operations, where the heart slows and blood pressure decreases, a transesophageal echocardiogram is useful in diagnoses and treatments. Professor Kunisawa introduced the American technology and is practicing medical care with it and he is the first doctor in Japan and Asia to obtain the related qualifications. (Excerpt from Hokkaido Government)

Research

Surgical Treatment of Epilepsy (Department of Neurosurgery)

Professor Kyosuke Kamada and other members from the Department of Neurosurgery of our university, during detailed diagnoses of epileptic foci and the planning of its medical treatments, discovered that cerebral regions are exclusively engaged in responding to stimulus classes as faces and colors. This advancement in the understanding of functional specialization of the brain will lead to better treatment options for patients.

In conventional surgical treatments of epilepsy, by using electrodes inserted in the skull, neurosurgeons would detect the activity of epilepsy foci, restrain brain functions by stimulating the brain electrically, and draw a brain function map. This electrical cortical stimulation causes pain, and that makes it difficult to conduct a detailed analysis of the cerebral region near the skull base that processes visual perception – for example: faces, colors, and letters. That further makes it impossible to localize these functions adequately and perform surgical operations.

The achievement of Professor Kamada and his group’s research into epilepsy will contribute to an improvement in patients’ recognition of faces, color, and objects in general, enhancing their quality of life.

Their outstanding paper was recognized as unprecedented and was published in the Proceedings of the National Academy of Sciences of the United States of America, the official scientific journal of the National Academy of Science.

Ex Vivo Organ Perfusion Preservation and Functional Recovery Project—
Department of Transplantation Technology and Therapeutic Development (Funded Department)

Since 2014, the Department of Transplantation Technology and Therapeutic Development, a funded department of our university led by Specially Appointed Professor Naoto Matsuo, started an ex vivo organ perfusion preservation and functional recovery system research project to establish highly reliable transplantation medicine, advancing cooperation research by medicine, science, engineering, and pharmacy, and university-industry cooperation research. One of the companies associated with the department, Chuo Seiko Inc., has a pioneering spirit and a strong motivation to be involved in the research through the Hokkaido Medical Device Development Network. The goal is to save lives by judging the risks of the functional decline of organs and enabling them to recover so that they can be transplantable. This technology has been made well-known by applying it to kidney transplantation and it is applied to lung, liver, and heart transplantation, which contributes to the creation of a new academic field which is called organ regeneration engineering.

The Department of Transplantation Technology and Therapeutic Development has already started the project jointly with the Japan Society for Organ Preservation and Biology and many colleagues have been attempting to promote the technology clinically as a first step. Conducting research into organ recovery and functional regeneration using pigs, they have been taking the initiative in establishing organ regeneration engineering.
**Commercialization of DICOM Viewer for PET-CT Diagnosis**

ISB Corporation in Tokyo developed and started commercializing a DICOM viewer for medical use. This was achieved by utilizing the patent our university possesses regarding positron emission tomography (PET) and computed tomography (CT) that was invented by Dr. Atsutaka Okizaki, an associate professor of the Department of Radiology.

While PET-CT is widely used to diagnose diseases such as malignant cancer, the image viewer software is not always user-friendly. The new commercialized DICOM viewer makes it possible to calculate SUV value* easily, prepare radiologic interpretation reports in a short period of time, and raise the possibility of detecting cancer with high-resolution images.

* SUV value is the abbreviation for standard uptake value, showing the degree of radiation exposure that is calculated based on patients’ weight in addition to other variables.

**Other**

- Notification of Academic Records to Students’ Guardians (since 2013)
- Course Available in the Postgraduate Clinical Program Admission for Junior Residents to be Admitted into Graduate School (since 2013)
- Clinical Professors in Charge of Groups of Students in the Medical Course (since 2013) and Clinical Professors as Advisors (since 2014)
- Air Ambulance Assistance Project in Northern Hokkaido (since 2009)
- Construction of the Forwarding System Using the CT Scanning System in Emergencies (since 2013)
- Participation in Taisetsu Anshin / Medical Network (since 2014)
- Introduction of Annual Salary Scheme to 10% of the Faculty Members (since 2015)
- Selected as a Base of the Project for Establishing an Open-access-based Center for Sustainable Creation of New Medical Technology for Translational Research Network Program (since 2017)

See Telemedicine Center on page 40 for more information about the remarkable activities taking place there.
Toward a Vigorous Asahikawa Medical University

Filled with the Joy of Learning and Research, and a Fulfilling Work Environment