

Broad support for research gives young researchers a chance

KAIBUCHI, Kozo

Center for Research of Laboratory Animals and Medical Research Engineering,
Nagoya University Graduate School of Medicine
Director of the Division for Medical Research Engineering

Full-time technical staff supports researchers by bringing analytical instruments together for renewal

In August of 2014, the "Division for Medical Research Engineering" of the Center for Research of Laboratory Animals and Medical Research Engineering at Nagoya University Graduate School of Medicine gathered up analytical instruments from a number of different locations and brought them together in Medical Science Research Building 3 for repair and renewal, at the same time that new instruments were introduced. This greatly increased convenience for users, and under the concept of many researchers sharing common equipment, an ideal balance was established among the functions of this division, which have been built up over long years.

In Medical Science Research Building 3, the instruments were divided among the 5 research laboratories of Bioimaging, Molecular Analysis, Cell Analysis, Genetic Information Analysis, and Medical-Engineering Collaboration. Each laboratory has full-time technical staff, and at present 6 technicians carefully manage the instruments and provide research support services through lecture meetings and examination of analytical results, etc. Instruments such as mass spectrometers and optical microscopes become more advanced by the day, and it is not easy for researchers to handle them skillfully on their own, but with the collaboration of highly specialized technical staff, it becomes possible to conduct research efficiently.

This division, which not only enhances instrument availability but can also provide high-quality services to users through its technical staff, has become a model for universities throughout Japan.

Use by people in and outside Nagoya University is growing by the year

Data on the status of use of all instruments has been aggregated and published since 2007. As compared with approximately 6,000 uses by persons in and outside of the university in 2007, the number of uses increased to approximately 13,000 in 2013. In 2014, it was not possible to use the instruments for 2 months because of the renewal, but the number of uses still came to approximately 12,000. Moreover, the program of lecture meetings by technical staff, which offered 38 sessions (254 participants) in 2007, expanded to offer 158 sessions (725 participants) in 2014. This, too, attests to how many people utilize the functions of the division.

Aiming to provide higher-quality services

Having an open place within the university where instruments can be shared enables researchers to conduct research even if they do not have their own instruments, and this leads to the expansion of opportunities. We would like to see young researchers utilize such facilities to meet challenges because charging ahead with unfettered thought can lead to major discoveries. We would be very pleased if this division could help provide such opportunities.

As we continue to consider what new types of instruments to introduce in the future, our division aims to improve the quality of service we provide. We would like to go on devoting our efforts to providing even more support so that young people who are passionate about research can give shape to their own ideas.



Organization Outline

Established in 2004, it aimed to centralize the maintenance and management of various analytical and measuring instruments at the Nagoya University Graduate School of Medicine and School of Medicine, and to promote efficient use of the instruments in education and research. Use of the instruments was initially limited to members of our School of Medicine and opened to persons outside the School in 2006. The number of users has shown an upward trend over the years. In 2014, all of the instruments were gathered together in Medical Science Research Building 3.



Bioimaging Laboratory

Observation and image analysis of ultra-structure with various kinds of microscopes, such as confocal laser microscopes and electron microscopes

Main Instruments

Confocal laser microscopes, fluorescence microscopes, electron microscopes, laser microdissection, specimen preparation apparatus for electron microscopes and optical microscopes, imaging analysis apparatus

Molecular Analysis Laboratory

Qualitative / quantitative analysis of proteins and peptides, proteome analysis using databases for protein identification

Main Instruments

Mass spectrometer, LC-MS

Cell Analysis Laboratory

Quantitation and distribution of cells and cell components, analysis of properties

Main Instruments

Flow cytometer, SPR, ITC

Genetic Information Analysis Laboratory

Structural determination of DNA and proteins (sequence determination)

Main Instruments

DNA sequencer, ultra-centrifuge, molecular conformation analysis apparatus, plate readers

Medical-Engineering Collaboration Laboratory

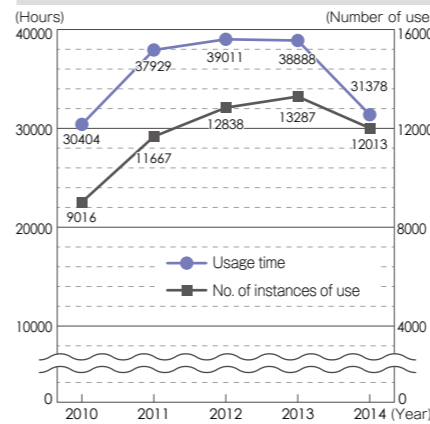
Analysis of cell and bio-information is performed by the School of Medicine in collaboration with the School of Engineering.

Main Instruments

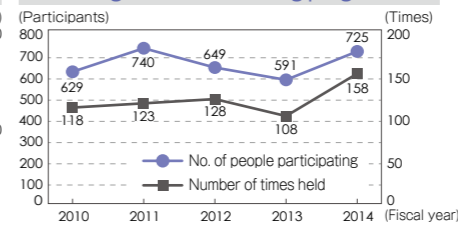
FIB-SEM, ultra-high resolution microscope, living cell imaging system

Achievement Graphs

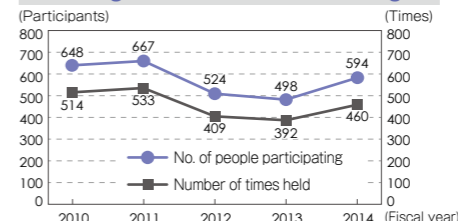
Use results



Holding of lecture meeting programs



Holding of individual lecture meetings



PROFILE

KAIBUCHI, Kozo

Born in 1955. Completed doctoral course in Kobe University Graduate School of Medicine. Doctor of Medicine. Professor of the Center for Neurological Disease and Cancer, Nagoya University Graduate School of Medicine. Director of the Division for Medical Research Engineering. His fields of specialization are cellular biology, biochemistry, and general neuroscience.