

Tohoku University

Annual Review 2006

Tohoku University Annual Review 2006

Tohoku University

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TOHOKU
UNIVERSITY

CREATIVITY

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Toward the New Centenary

Mission Statement

Tohoku University is committed to the "Research First" principle and "Open-Door" policy since its foundation, and is internationally recognized for its outstanding standards in education and research. The university contributes to world peace and equity by devoting itself to research useful in the solutions of societal problems and for the education of human resources in the capacities of leadership.

History

Tohoku University was founded in 1907 as the third Imperial University of Japan, following the Tokyo Imperial University and Kyoto Imperial University; and from its start, it displayed to the world an unswerving commitment of an "Open-Door" policy. Departing from the norms of other imperial universities, it has accepted graduates from higher technical schools and higher normal schools, and despite the opposition from the government at that time, becoming Japan's First National University to admit female students in 1913 (admitting three in that year).

At the time of its founding, Tohoku University was able to attract a group of young and brilliant researchers who had trained around the world to serve on its faculty. As part of this reason, a "Research First" principle came to develop, which calls upon their scholars to not only pursue highly productive research but to also put their findings to work in the teaching of their students. In addition to this, Tohoku University has nurtured a tradition of "Practice-Oriented Research and Education," in which their results of cutting-edge research are being put to use for the good of society and the improvement life style. Evident of our pioneering practice (before the World War II period), are the set up in local venture businesses which foster regional industry and our status as the nation's center for research on family law; the domestic branch of law which is closely associated with our daily lives.

This spirit, which continued strongly through World War II and the rapid economic growth of the postwar period, still remains alive and can be seen in today's new era of advanced globalization. As Tohoku University prepares to celebrate its centenary in 2007, we are confident that our traditions be nourished and that with the help of students and researchers from all over the world, it will not only survive but will flourish even more during the coming 100 years.

[PICTURES]

Front cover

Laboratories for Advanced Materials Research,
Institute of Multidisciplinary Research for
Advanced Materials (Katahira Campus)

Contents

University's Main Administrative Building
(Katahira Campus)

This Annual Review 2006 covers activities conducted from April 2005 to March 2006.

Another year closer toward the forthcoming 100 years

About this publication

We are pleased to announce the publication of Tohoku University's Annual Review 2006. We have decided to publish Annual Review 2006, to describe notable achievements at the University during the previous year and to clearly show what the University is presently engaged in.

In 2004 Tohoku University became legally independent of the national government, as all other former national universities did, thus embarking on a new path in 2005. In this review of achievements in year 2005, we recognize many young researchers that played important roles in various research projects, and are building on to the works of their predecessors as they make their own markings. We encourage bold educational reforms to expand the range of courses for students and to also improve their academic life. We value the students who actively pursue not only their studies, but also their sports and cultural activities. We also contribute to society in various fields, by using our new status as a National University Corporation making good use of our scientific achievements and promoting new forms of academic-industry collaboration. We also hold large seminars including "Science Café" for high-school students and the general public. In today's increasingly globalized world, Tohoku University enhances international collaboration with major universities and research institutes overseas focusing on joint research and educational projects. Now that the long-standing Aobayama prefectural land issue has been solved, construction of the Aobayama New Campus including its science park will commence in 2007.

Tohoku University will celebrate its 100th anniversary in 2007. The members of both the faculty and administrative staff as well as the students of Tohoku University in cooperation with graduates and people involved in various social activities are committed in making Tohoku University the world's most advanced research and education center for the benefit of society and humankind.

New Birth and Tradition

【President of Tohoku University】
Takashi YOSHIMOTO



Tohoku University News and Events in FY 2005

2005

4	1	Establishment of the Accounting School (Professional Graduate School) Establishment of the Admission Center Announcement of the first Official Tohoku University Logo
	6	Tohoku University Entrance Ceremony
	14	The 2nd, the 100th Anniversary Seminars of Tohoku University "Adventure in the Sciences and Human Life" Space, Earth, Life and Future Civilization
6	1	Establishment of the Global Operations Centre (GOC)
7	20	The 1st, the 100th Anniversary Satellite Seminars of Tohoku University: starts in Nagoya
	28	Tohoku University Open Campus
	28	Research Achievement: A world's first in the observation of Geoneutrino
8	5	The 3rd, the 100th Anniversary Seminars of Tohoku University "Mind, Language, Brain and Electronic Information: How Far Can Science Approach Mankind"
	26	Tohoku University starts its first Science Café in Sendai
	31	Official Announcement of the Aobayama New Campus Project
9	1	Opening of the Kawauchi Keyaki Nursery
	4	Tohoku University Triathlon male team and a female individual received the 1st prize at the Japan Student's Triathlon Championship (Intercollegiate Championship Series)
	21	Tohoku University Commencement Ceremony
	27	The International Symposium on Lu Xun – His Starting Point and Memories in Sendai (Beijing Lu Xun Museum, China)
10	4	Tohoku University starts the Exploratory Research Program for Young Scientists (ERYS)
	21	The Tohoku University Main Administrative Building was selected as the Best Traditional Design in "Sendai Design Week 2005"
11	10	Research Achievement: A world's first discovery of neurons showing gender differences in number and projection pattern
	24	Tohoku University's First Memorandum on Double Degree Program signed with INSA-Lyon
	26	Awarding ceremony for Sawayanagi Prize (Tohoku University Prize for the Encouragement of Gender Equality)
12	5	The 4th, the 100th Anniversary Seminars of Tohoku University "Great Advancement in the Quality of Life: Advanced Science for the New-Generation of Medical Treatment"

2006

1	19	Organizational Partnership Agreement with Hitachi, Ltd. to promote R&D and Human Resource Training
	31	Organizational Partnership Agreement with the National Institute of Advanced Industrial Science and Technology
2	10	The 5th, the 100th Anniversary Seminars of Tohoku University "Scientific Approaches on How We Live, Age and Die"
	21	Agreement with the National Institute of Radiological Sciences to promote Scientific Education
	22	Presentation of Tohoku University's Original New Sake "HAGIMARU"
	22	Awarding Ceremony for Tohoku University Prof. Fujino Incentive Award
	25	2006 Tohoku University Entrance Examination: First Examination for General Admission
3	12	2006 Tohoku University Entrance Examination: Second Examination for General Admission
	24	Tohoku University Commencement Ceremony / President's Education Award Ceremony



Tohoku University Official Logo

In April of 2005, Tohoku University created an official logo to enhance its international recognition and status. The key concepts in the creation of the logo are **creativity, globality and tradition**. Hagi, or bush clover, is the traditional symbol for Sendai and Miyagino, and is a long associated image of our university. As the university official logo, it is our hope that hagi will become a dignified and familiar image throughout the world.

Scientific achievement ①

KamLAND has helped in almost fully clarifying the ultimate particle.

Unique observation equipment was hand made

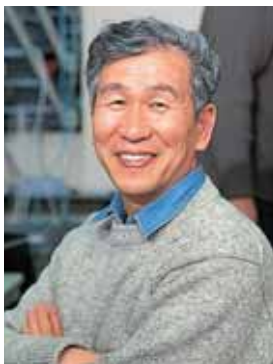
KamLAND is an experimental facility at the Research Center for Neutrino Science established in January 2002; was used to successfully observe nuclear reactor antineutrinos in the very same year that it was built. Prof. Atsuto Suzuki wrote a paper describing the verification of the neutrino oscillation phenomenon, and the article ranked first in both 2003 and 2004, as ISI's list of the world's most cited papers in the field of physics.

In 2005, Prof. Kunio Inoue's group wrote a paper on their findings concerning the observation of terrestrial neutrinos, which was published in the July issue of Nature. These results now pave the way for "geotomography," which is a field of science that probes the composition of the earth's deep interior such as its mantle and the its crust, and for "neutrino geophysics", a field which is linked to geophysics.

And what has KamLAND yielded? Thanks to KamLAND, we have succeeded in observing neutrinos with very weak energy interactions. Thus, neutrinos are no longer a mere research topic, but can be actually used in other fields of research for their unique properties. For example, by tracing neutrinos generated within the earth, it will be possible to observe the earth's interior in the same way that X-rays reveal the inter-parts of the human body. According to Prof. Inoue, "The number of studies on neutrinos in such interdisciplinary fields as geoscience and earth science has since dramatically increased."

Research Center for Neutrino Science

<http://www.awa.tohoku.ac.jp/>



【Elementary particle physics】

Professor Atsuto Suzuki

Dr. Suzuki was born in 1946 and had studied at the Niigata Prefectural High School. He graduated from the Faculty of Science, Tohoku University; finished the Graduate School of Science and has since 1993 been a professor at Tohoku University. After participating in Super-Kamiokande experiments, he was appointed in 1998 as the Director of the Research Center for Neutrino Science, and organized KamLAND experiments to observe neutrinos, the ultimate particle. In 2005 he was awarded the Medal with Purple Ribbon. He and has since April 2006 been Director General of the High Energy Accelerator Research Organization Accelerator Laboratory.



【Elementary particle experiment】

Professor Kunio Inoue

Dr. Inoue was born in 1965 and had studied at Shijonawate High School in Osaka Prefecture. He graduated from the Faculty of Science, Osaka University, where he later finished his master's degree. After conducting research at Kamiokande and Super-Kamiokande, he then joined KamLAND in 1998. He participated in the KamLAND project from its inception and has successfully built facilities that were capable of observing geoneutrinos. He has since 2004 been a professor at the Research Center for Neutrino Science.

One of the fundamental rules in KamLAND is to wear a helmet. Prof. Suzuki enjoy wearing a helmet, and has selected one with white and green colors.



A thousand meters underground in a former mine shaft in Kamioka town, Hida city, Gifu Prefecture, located in one of the provincial regions of the Japan Alps, KamLAND is an experimental underground observatory erected in January 2002. The objectives of KamLAND are: 1) To measure the mass of the muon neutrino by detecting the nuclear reactor neutrino oscillation phenomenon 2) To elucidate the issue in the shortfall of solar neutrinos by detecting solar neutrinos 3) To solve the mystery of how the earth's internal energy is generated by detecting antineutrinos generated within the earth 4) To solve the mystery of evolution of the stars by detecting neutrinos from supernova explosions. The Research Center for Neutrino Science carried out this project, which was led by Prof. Atsuto Suzuki, with the cooperation of 11 universities in the USA.

Inside the KamLAND tank, equipped with 50-cm in diameter photoelectric multiplier tubes (photosensors), Prof. Suzuki believes that by "designing facilities on our own helps clarify our research goals and the steps to achieve them," so our staff designed the necessary equipment themselves, including the water-Cherenkov cosmic ray detectors, liquid scintillator, and photoelectric multiplier tubes. Some of the equipment used was even hand made.

The results of observing geoneutrinos, which were described in our research paper, appeared on the cover of the July 2005 issue of Nature



18-m in diameter, stainless steel spherical tank contains 1000 tons of liquid scintillator. In order to observe solar neutrinos, the liquid will be replaced and purified by more than five orders of magnitude during the summer or autumn of 2006.



Nature vol.436 no.7050, 28 July 2005

The cover of Nature, showing pattern diagrams (production distribution for geoneutrinos and geological structure) of neutrino geophysics. The world's first observation of geoneutrinos existing in the earth's deeper interior reported by Prof. Inoue's group was published in this scientific magazine.



Scientific achievement ②



【Tsunami Engineering】

Prof. Fumihiko Imamura

Dr. Imamura was born in 1961 and studied at Kofu Daiichi High School in Yamanashi Prefecture. He was graduated from the Faculty of Engineering, Tohoku University and finished Graduate School of Engineering there. He has been involved in setting up the Disaster Control Research Center since 1991, and was appointed the head of the Center in 2004. Dr. Imamura engaged in the transferring techniques for numerically simulating a tsunami and through the international project "TIME", was awarded various prizes in recognition of the excellence of his tsunami simulation and computer graphic techniques. He participated in the damage investigation of the 1993 Hokkaido-Nansei-Oki Earthquake Tsunami and the 1998 Papua New Guinea Earthquake Tsunami.

**Sumatra earthquake and Indian Ocean tsunami
The three-year investigation plan was extended to cover every detail**

Memories of disasters will fade, away by time and disasters will repeat themselves over and over again. This cycle seems to be becoming shorter and shorter due to both nature itself and human activities. Thus it is becoming increasingly important to recognize the risks of living in regions and a reason to build a community-based disaster mitigation system. Prof. Imamura is raising the alarm, having participated in the investigation of the worlds worst disaster in history caused by an earthquake and the Sumatra tsunami, Indonesia in 2004.

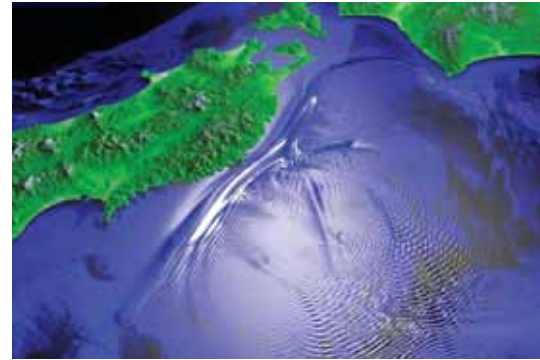
More than 260,000 people were killed, and the disaster caused by the M9.2 earthquake and tsunami remains fresh in our memory. Along with disaster rescue and relief operations, international groups of investigators were organized. The Disaster Control Research Center organized an investigation team led by Prof. Imamura and studied the damage caused by the tsunami in various regions of that area.

The results were compiled into two reports: "Damage Caused by Indonesia's Sumatra Tsunami (March 2005)," and "Establishment of and Challenges for a Tsunami Warning System (March 2006)," encompassing tsunami warnings, recognition of information, and evacuation behavior. These reports are making a useful contribution to setting up a tsunami early-warning system in the Indian Ocean and other related regions.

**Graduate School of Engineering
Disaster Control Research Center**

<http://www.dcrc.tohoku.ac.jp/>

**Improving regional
disaster preparedness**



The concept of disaster control is based on mitigation through numerical simulation technologies such as in numerical simulation and computer graphics analysis of tsunamis. The research in combining sciences across boundaries to create an integrated science, is considered to be without parallel through out the rest of the world. Thus, this tsunami prevention-related technology has been transferred overseas through the TIME project under the joint auspices of the International Union of Geodesy and Geophysics (IUGG) and the UNESCO's Intergovernmental Oceanographic Commission (IOC).



Numerical simulation of the tsunami clearly shows how the tsunami caused by the 2004 Sumatra earthquake traveled to the Indian Ocean and the east coast of Africa at a speed of 700 km/h.



Prof. Imamura taught at the Graduate School of the Asian Institute of Technology, Thailand from 1993 to 1995. Many of his former students of those days rushed to assist him, and now form an invaluable human network for using the survey results in these regions.



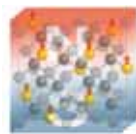
In addition to his second-generation surveying instrument, which he has been using for the past five years, he kept a GPS device, scale, video camera, and questionnaires in his backpack weighing about 20 kg and walked around carrying a backpack weighing about 20 kg - this investigation required quite a bit of physical strength!



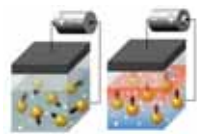
It is almost impossible to control or stop a natural phenomena which may cause serious injury to human beings. However, some awareness of and preparation for disaster prevention on a daily basis can help mitigate hardship caused by the enormous power of nature beyond the human knowledge. Prof. Imamura knows of this and travels all over the world for his research, with a strong sense of mission, he can make the concept and technology of disaster control useful to people worldwide. This picture shows a model of a community tsunami evacuation building being planned in Thailand.

Scientific achievement ③

The third Japanese to be awarded the Agilent Technologies Europhysics Prize



Development of new ferromagnetic semiconductor (materials that exhibit both ferromagnetism and semiconductor properties)



Magnetic properties of ferromagnetic semiconductors controlled by applying an external voltage.

Since their discovery in ancient Greece, magnets were believed to have properties which could not be changed, even by application of an external force. However, Prof. Ohno demonstrated that the magnetic property of a ferromagnetic semiconductor which he developed could be turned off (paramagnetic state, right) by applying a particular voltage to it at a low temperature, and then could be turned back on (ferromagnetic state, left) by changing the voltage. He defied the conventional wisdom believed for thousands of years and thus opened up new possibilities in the field of magnetism.

An electron has two properties: electric charge and spin. Semiconductors such as transistors use the property of electric charge, whereas magnetic devices such as magnetic disks use the property of spin. These two technologies have contributed to the development of electronics as an inseparable pair. Now, spintronics technology that deals with the properties of both electrical charge and spin, are expected both as a breakthrough technology for arithmetic devices and as a basic technology for quantum computers.

Prof. Ohno, at the cutting edge of spintronics, has developed semiconducting materials that exhibit ferromagnetism. He has also pioneered and developed a new field of spintronics through his research on spin coherence control in solids. He is playing a leading role in semiconductor spintronics at the Laboratory for Nanoelectronics and Spintronics that aims to create high-performance nano-spintronics integrated devices using the ultimate control of electrical charge, spin, and dimensions. In 2005, he demonstrated, using a ferromagnetic semiconductor, that the properties of a magnet can be turned on and off by applying a certain voltage from an external electrode. He was the third Japanese person to be awarded the Agilent Technologies Europhysics Prize.

The properties of a magnet changed by an external force

A feat accomplished by the Ohno semiconductor spintronics project



Certificate of the Agilent Technologies Europhysics Prize. Prof. Ohno's name appears with those of American and Polish scientists. These scientists collaborated to work internationally as a fine example of a successful joint research. "like components in a chemical reaction."

[Semiconductor spintronics]

Professor Hideo Ohno

Dr. Ohno was born in 1954 and studied at Sapporo Minami High School in Hokkaido. He graduated from the Faculty of Engineering, University of Tokyo and finished the Graduate School of Engineering. He joined the Faculty of Engineering, Hokkaido University. After working for the Thomas J. Watson Research Center of IBM as a guest researcher, he moved to the Faculty of Engineering, Tohoku University as a professor. In 2004, he was appointed director of the Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication. For his achievements in establishing spintronics technology, he was awarded the IUPAP Magnetism Prize in 2003, Agilent Technologies Europhysics Prize in 2005, and the Japan Academy Prize.

Ohno Laboratory,

Laboratory for Nanoelectronics and Spintronics, Research Institute of Electrical Communication

<http://www.ohno.riec.tohoku.ac.jp/>



Scientific achievement ④

Prof. Kotani awarded the Saruhashi Prize, which honors female scientists



The notion of "group" was mathematically formulated by Abel and Galois in the 19th century as a word to describe "symmetry." Klein declared that geometry was a branch of knowledge and investigated properties related to the "group." Currently Prof. Kotani uses the concept of random walk to conduct research into Discrete Groups.

The Saruhashi Prize was founded in 1981 by Dr. Katsuko Saruhashi (Executive Director, Geochemistry Research Association, and a former member of the Science Council of Japan) as one of the most prestigious awards given to Japanese female scientists who have achieved outstanding results in the field of natural science research. Prof. Kotani was awarded the Saruhashi Prize in 2005 for "Discrete Geometric Analysis on a crystal lattice."

In the awarded research, Prof. Kotani used discrete geometric analysis to clarify what geometry of a crystal lattice determines the behavior of a particle randomly moving on it. The Saruhashi Prize gives reason for the award as follows: "From an innovative viewpoint, she has fully integrated geometry, probability theory and combinatorial mathematics, and specifically embodied the concept of discrete geometry and geometry with singularities, thus leading to beautiful, epoch-making results." Research into random motion began when Einstein math-ematically explained that the random motion of pollen particles, which was observed by Dr. Brown in 1827, was caused by the collision of thermally moving molecules in 1905. In this long mathematical history of random motion analysis, Prof. Kotani successfully presented her original viewpoint of "symmetry."

Symmetry can be seen in a random walk

Differential Geometry and Global Analysis



While in elementary school, Prof. Kotani did not excel in calculation. Instead she hated it. But in junior high school, she developed an interest in mathematics which required abstract thinking. She made a note of natural flow on her thinking in a large notebook, and scratched her ideas down that happened to have flashed into her imagination on the back cover of her notebook.

[Differential Geometry and Global Analysis]

Professor Motoko Kotani

Dr. Kotani studied at the Senior High School of Tokyo Gakugei University. She graduated from the Faculty of Science, University of Tokyo, and finished the Graduate School of Tokyo Metropolitan University. She moved to Tohoku University as an associate professor in 1994, and was promoted to full professor in 2004. She conducted various overseas research, including at the Max Plank Institute in Germany (1993 - 1994) and Institut des Hautes Etudes Scientifiques in France (I.H.E.S.). She was awarded the Saruhashi Prize in 2005.

Mathematical Institute, Tohoku University

<http://www.math.tohoku.ac.jp/>



Scientific achievement ⑤



【Neuroscience】
Prof. Ryuta Kawashima

Born in 1959. He graduated from Chiba Minami High School and Tohoku University, School of Medicine & Graduate School of Medicine. He was a keen rugby player in his undergraduate days and worked at the Karolinska Institutet in Sweden as a guest researcher. In 2001, he joined the New Industry Creation Hatchery Center, Tohoku University, as a professor. He also serves as a representative of the research project titled "Neuroscience and Education" sponsored by the Japan Science and Technology Agency (JST).

Reading, writing and calculation help prevent dementia

Practical application of reading, writing and calculation to learning therapy and brain health promotion seminars

Prof. Ryuta Kawashima started to study about the functional organization of the human brain in around 1985 when researchers turned their attention to the brain study. Prof. Kawashima has since been involved in brain imaging and mapping of higher brain functions, which are new scientific fields of brain imaging examination by the use of large instruments such as light topography systems and functional MRI.

These studies demonstrated that the brain functions of the elderly could be improved by reading, writing and calculation. In collaboration with private education industry, Prof. Kawashima launched a project to treat patients with dementia by assigning the learning exercises consisting of reading, writing and calculation. He called this "learning therapy" and it has now spread widely to healthcare organizations in Sendai City and throughout Japan.

His studies were integrated into the university-academic city joint research project titled "Brain Wellness Project" carried out by Tohoku University and Sendai City. Based on these results, a "brain health promotion seminar" was introduced to help elderly people avoid dementia. In 2005, the final year of the three-year project, the results were compiled into a report and Sendai City is now considering transferring the achievements to Finland and Sweden.

Prof. Kawashima's Laboratory, Institute of Development, Aging and Cancer, Tohoku University

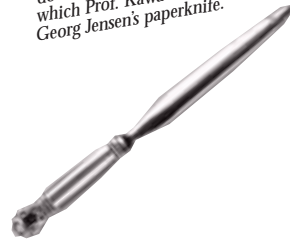
(The organizational position was changed from April 2006.)
<http://www.idac.tohoku.ac.jp/dcp/fbi/>



Brain function map visualized by functional MRI

The Brain Wellness Project conducted with Sendai City has produced great results

The laboratory receives many letters, that come from domestic and overseas researchers and organizations, which Prof. Kawashima always opens with his favorite Georg Jensen's paperknife.



Cited from "Achievement of Dreams through Brain Training" by Ryuta Kawashima (Kumon Publishing Co., Ltd.)

While a person is playing a computer game.



While a person is rapidly working out a single-digit addition.



While a person is orally reading Japanese sentences.



The brain functions are visualized by various techniques including optical topography. The prefrontal cortex is activated while a person is reading Japanese sentences aloud and rapidly working out a single-digit addition. These findings were reported in the books "Ryuta Kawashima Recommends Self Prevention of Brain Aging" and "The Elderly Activate Children's Brains" which are the compilations of achievements of the Brain Wellness Project.

Scientific achievement ⑥

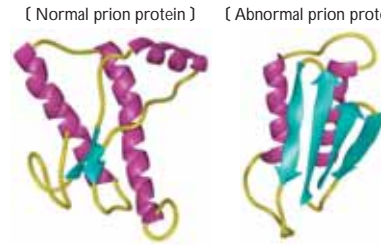


【Neuroscience】
Prof. Tetsuyuki Kitamoto

Born in Wakayama in 1956. He graduated from Wakayama Prefectural Hashimoto High School, Wakayama Medical University and Graduate School of Medical Sciences, Kyushu University. He worked at the Molecular Biology Center, University of Heidelberg, as a researcher and in 1995, as a professor, he joined Tohoku University, Graduate School of Medicine. In January 2006, he was appointed Director of the Center for Translational and Advanced Animal Research on Human Diseases, Graduate School of Medicine and has been engaged in prion protein studies since 1983.

Our achievements are making steady progress toward establishing a treatment for prion disease and in the development of its preventive measures

Almost every week, as an escape from his routine of intensive assessment of abnormal cells, Prof. Kitamoto enjoys climbing Mt. Banzan near Sendai City observing the mountain plants and wild herbs; he takes pictures of the uncontaminated flowers.



【 Normal prion protein 】 【 Abnormal prion protein 】
Prof. Kitamoto and his research team succeeded in preparing an experimental mouse that frequently and quickly developed prion disease, thus helping to accelerate studies on prion disease. Although the range of abnormal behavior appearing as a result of prion infection is limited among mice, the affected brain of mice suffering from prion disease facilitates the testing of Diagnostic Imaging.

Blocking transmission to humans

Scientific approach motivated by the pride of a medical specialist

In 1998, the Center for Translational and Advanced Animal Research on Human Diseases, Graduate School of Medicine, became a collaborative Creutzfeldt-Jakob disease (CJD) research center to the World Health Organization (WHO) and Prof. Tetsuyuki Kitamoto's Laboratory was appointed the representative of the Asian region. Since then, Prof. Kitamoto and his research team have been engaged in scientific projects to establish techniques for early diagnosis of CJD and its treatment. In 2003, they established the Division of Prion Protein Biology. Prof. Kitamoto clarified that prion disease could be classified into the following three types: (1) Sporadic prion disease of unknown origin which develops in one in a million people; (2) Familial prion disease caused by gene abnormality; (3) Infectious prion disease transmitted from infected persons or animals.

In 2005, he reported an important finding in the type of prion proteins that invades humans, such as vCJD which remained far more contagious than the wild-type prion proteins, and approximately 90 to 100% of the infected people of human-type prion proteins might develop CJD.

However, why an abnormality such as prion disease occurs remains to be clarified. Prof. Kitamoto warns the risk of the prevalence on CJD and proposes the following measures to help prevent prion disease: detection of abnormal prion protein infection at a higher level of sensitivity and the elimination of contaminated substances in our lifestyle.

Center for Translational and Advanced Animal Research on Human Diseases

Tohoku University, Graduate School of Medicine

Department of Prion Protein Research, Division of CJD Science and Technology, Division of Prion Biology
<http://www.prion.med.tohoku.ac.jp/>

Topics

The brain is the origin of gender difference among animals.

A study featured on the front cover of Nature (November 2005) was the achievement of Prof. Daisuke Yamamoto (Section of Neurogenetics, Graduate School of Life Sciences) the world's first to clarify the gender difference in neurons from a practical aspect.

There is a clear gender difference in behavior among animals, yet the actual cause of this in brain functions still remain unknown. Prof. Yamamoto studied the drosophila (fruitfly) mutant called satori and successfully clarified the gender difference in neurons. And his paper on this research was published in Nature and featured on the cover; This study was made in cooperation with Prof. Ken-ichi Kimura and his research team at the Hokkaido University of Education, and Assistant Manabu Ote, Waseda University (who became a special researcher engaged in the scientific research promotion program of Tohoku University, in 2006).

http://www.lifesci.tohoku.ac.jp/topics/topics_0511.html



Nature vol.438 no.7065, 10 November 2005

Scientific achievement ⑦



The world's first compact perpendicular magnetic recording hard disk drive which records 10 GB of information on its 1-inch magnetic disk. The researchers have survived the harsh winter years of their research with determination, without yielding to the temptation of technology currently in vogue. They are already working on a next-generation perpendicular magnetic recording with terabit storage.

Another step forward towards ubiquitous computing



From front to back:
Professor Muraoka,
Professor Emeritus Iwasaki,
Professor Emeritus Nakamura

138 Gbits/inch², the world's highest recording density achieved

Practical application of reading, Compact perpendicular magnetic recording hard disk drive accomplished after four generations

The history of development magnetic recording technology at the Research Institute of Electrical Communication goes back to 1938, the time of the AC bias recording technology and Professor Emeritus Kenzo Nagai who developed it. This eventually led to Japan's first magnetic tape recorder in 1950, and formed the foundation of the global firm, Sony.

Since then, magnetic recording research has progressed from the audio to video magnetic recording tapes, while the hard disk drives and new information storage technologies including optical discs and flash memory became a reality. Nevertheless, the quest in a recording technology promises a smaller recording device, larger storage, and higher signal quality continued, in the line with the pursuit of higher speed and density. Even though, some researchers steadfastly committing themselves to the development of magnetic recording technology: Professor Emeritus Shunichi Iwasaki who succeeded Professor Emeritus Kenzo Nagai, Professor Emeritus Yoshihisa Nakamura; and Professor Hiroaki Muraoka. It was in 1975 that Professor Iwasaki proposed perpendicular magnetization was the optimal approach to achieving high density in magnetic recording. Based on his groundbreaking research results which substantiated this claim, it was thirty years later in 2005, an ultra-small hard disk drive, the size of a 500-yen coin, which achieved the world's highest recording density of 138 Gbits/inch². A realization accomplished under one of the IT Programs sponsored by Japan's Ministry of Education, Culture, Sports, Science and Technology called "Development of Ultra-High Density Small Hard Disk Drive", led by Professor Emeritus Nakamura. This has paved the way for practical application of hard disk drives based on perpendicular magnetic recording.

【Recording Engineering】

Shunichi Iwasaki Professor Emeritus

Born in 1926, Iwasaki graduated from the Japanese Naval Academy and Tohoku University's School of Engineering. In 1964, he became a professor of the Research Institute of Electrical Communication and served as its Director from 1986 to 1989. He is currently President and Chief Director of the Tohoku Institute of Technology.

【Information Storage Systems】

Yoshihisa Nakamura Professor Emeritus

Born in 1940, Nakamura graduated from Morioka Daiichi High School in Iwate Prefecture and Tohoku University's School of Engineering, he also finishing his graduate program there. In 1987, he became a professor of the Research Institute of Electrical Communication and served as Director from 2001 to 2004.

【Information Recording Devices】

Hiroaki Muraoka Professor

Born in 1953, Muraoka graduated from Hakodate La Salle High School in Hokkaido and Tohoku University's School of Engineering, he also finishing his graduate program there. He became a professor of the Research Institute of Electrical Communication in 2000.

**Research Institute of Electrical Communication
Muraoka, Nakamura and Aoi Lab**

<http://www.kiroku.riec.tohoku.ac.jp/>

The President's Special Award Winners

The president commends the staff members who have achieved distinguished results and has significantly contributed to the development of academic culture, and educational research at Tohoku University.



**Awarded on
June 29, 2005**

Hideo Ohno
Professor, Research Institute of
Electrical Communication

Dr. Ohno was awarded the Japan Academy Prize 2005 for his work in Studies on Quantum Control of Electrons by Semiconductor Nanostructures and Ferromagnetism.



**Awarded on
November 26, 2005**

Motoko Kotani
Professor,
Graduate School of Science

Dr. Kotani was awarded the 25th Saruhashi Prize, which honors significant accomplishments by female scientists in the field of natural science, for her work in Discrete Geometric Analysis on a Crystalline Lattice.



**Awarded on
March 24, 2006**

Atsuto Suzuki
Deputy President, Professor,
Graduate School of Science

Dr. Suzuki was awarded the Japan Academy Prize 2006 for his research in the field of antineutrino science.

Award Winners 2005

(April 2005 – March 2006)

Apr. 29, 2005	Yoshio Waseda	Executive Vice President	Medal of Honor with Purple Ribbon in spring 2005
May 28, 2005	Motoko Kotani	Professor, Graduate School of Science	Saruhashi Prize
June 13, 2005	Hideo Ohno	Professor, Research Institute of Electrical Communication	Japan Academy Prize
June 26, 2005	Tatsuo Uchida	Professor, Graduate School of Engineering	The Minister of Education, Culture, Sports, Science and Technology Prize for the Industry-Academia-Government Collaboration Contributor Awards
Jun. 26, 2005	Yoshihisa Nakamura	Professor Emeritus, Research Institute of Electrical Communication	The Minister of Economy, Trade and Industry Prize for the Industry-Academia-Government Collaboration Contributor Awards
Jul. 11, 2005	Hideo Ohno	Professor, Research Institute of Electrical Communication	Agilent Technologies Europhysics Prize
Oct. 21, 2005	Tadao Nakamura	Professor, Graduate School of Information Sciences	Taylor L. Booth Education Award by the IEEE Computer Society
Nov. 02, 2005	Atsuto Suzuki	Deputy President, Professor, Graduate School of Science	Medal of Honor with Purple Ribbon in autumn 2005
Nov. 14, 2005	Fujio Masuoka	Professor, Research Institute of Electrical Communication	Economist Innovation awards 2005
Nov. 22, 2005	Masashi Kawasaki	Professor, Institute for Materials Research	19th Japan IBM Science Award
Nov. 30, 2005	Yoshiaki Nemoto	Professor, Graduate School of Information Sciences	Distinguished Contributions to Satellite Communications Award by the IEEE Communications Society

Topics

“Materials Science” of Tohoku University ranked 2nd in the ISI's list of most cited papers in the world.

Thomson ISI, in the USA, publishes a list of the world's most cited papers. It has become an important database showing how scientific papers are evaluated in the world. In the list for 2005, “Materials Science” of Tohoku University ranked 2nd in its field, while “Physics” and “Chemistry” ranked 13th and 22nd respectively.

2005 (Jan. 1995 – Oct. 2005)

Materials Science of Tohoku University
2nd in the world

Physics of Tohoku University
13th in the world

Chemistry of Tohoku University
22nd in the world

Evolution in education



Associate Prof. Toshiaki Muramoto teaching a Psychology class

President's Education Award honors to two researchers and one working group team

Associate Prof. Toshiaki Muramoto,
Graduate School of Information Sciences
**Outstanding class instruction in the
Subjects Common across Campus**

Associate Prof. Yasuaki Onoda,
Graduate School of Engineering
**Implementation of education classes jointly
designed with American counterparts**

Library

Working Group for Compilation of an Information Research Guide
Compilation of the Guide for Attainment of Information Literacy

President's Award honors to 50 undergraduate and graduate students

Undergraduate

- Yuichi Konno (Faculty of Arts and Letters)
- Suzuka Saeki (Faculty of Arts and Letters)
- Fumie Komatsu (Faculty of Education)
- Ruiko Ando (School of Law)
- Chie Araki (School of Law)
- Yuka Motosugi (Faculty of Economics)
- Tomoe Yoshida (Faculty of Economics)
- Tomooki Shimada (Faculty of Economics)
- Koichi Kaizuka (Faculty of Science)
- Ai Yamakage (Faculty of Science)
- Yoshiyuki Manabe (Faculty of Science)
- Shunsuke Tsuzuki (School of Medicine)
- Ayumi Ito (School of Dentistry)
- Yasuo Uchida (Faculty of Pharmaceutical Sciences)
- Yusuke Miura (School of Engineering)
- Shun Yokoyama (School of Engineering)
- Yuki Okuyama (School of Engineering)
- Belmoubarik Mohamed (School of Engineering)
- Ai Sasaki (School of Engineering)
- Taeo Kim (School of Engineering)
- Tetsuya Kawano (School of Engineering)
- Shiro Kikuchi (School of Engineering)
- Makoto Homma (School of Engineering)
- Ayaka Hoshi (Faculty of Agriculture)
- Mutsumi Fukuda (Faculty of Agriculture)

Graduate (Master)

- Katsuyoshi Kubota (Graduate School of Law)
- Momoyo Ogawa (Graduate School of Science)
- Manabu Kanno (Graduate School of Science)
- Shunsuke Yamaki (Graduate School of Engineering)
- Aya Miyazaki (Graduate School of Engineering)
- Francisco Eduardo Arrecis Sosa (Graduate School of Engineering)
- Jinko Sugawara (Graduate School of Educational Informatics, Education Division)

Graduate (Doctor)

- Miho Suzuki (Graduate School of Arts and Letters)
- Xi Chen (Graduate School of Education)
- Wirawan Dony Dahana (Graduate School of Economics and Management)
- Shinya Okabe (Graduate School of Science)
- Jun Muto (Graduate School of Science)
- Asuka Suzuki (Graduate School of Medicine)
- Motoko Maekawa (Graduate School of Medicine)
- Zhiqian Yu (Graduate School of Dentistry)
- Tsuyoshi Mikkaichi (Graduate School of Pharmaceutical Sciences)
- Takashi Yamaguchi (Graduate School of Engineering)
- Mio Sakuma (Graduate School of Engineering)
- Chang-ho Jung (Graduate School of Engineering)
- Hirokazu Kaji (Graduate School of Engineering)
- Takeshi Shimamoto (Graduate School of Agricultural Science)
- Seung Hoon Cho (Graduate School of International Cultural Studies)
- Takehiro Ito (Graduate School of Information Sciences)
- Akira Sato (Graduate School of Life Sciences)
- Giichiro Kawauchi (Graduate School of Environmental Studies)



「Support Program for Distinctive University Education」
"Educational Program for the Development of Human Resources with International Competence"
(FY2003 - FY2006)

Initiation of "Nurturing Natural Understanding and Logical Thinking through Interdisciplinary Scientific Experiments" (FY2005 - FY2008)

The Ministry of Education, Culture, Sports, Science and Technology promotes a "Support Program for Distinctive University Education" which aims to support outstanding educational projects selected from those universities with improved educational systems. In 2003, a successful, educational world-class human resources program proposed by the Graduate School of Engineering and was followed by a major educational, all-campus, science distinctive and experimental program which was then adopted in 2005, and is now presently being carried out.



"Integrated Experiment of Natural Science" An experiment being conducted as a part of the Subjects Common across Campus for freshmen, "Vibration of Strings and Music"

Adoption of "Support Program for University Education" sponsored by the Ministry of Education, Culture, Sports, Science and Technology (2005)

Support program for distinctive university education
Nurturing natural understanding and logical thinking through interdisciplinary scientific experiments
(Center for the Advancement of Higher Education)

Initiative for attractive education in graduate schools

Program for fostering researchers and educators in language
(Graduate School of Arts and Letters)

Program for the development of young internationally-minded researchers
(Graduate School of Science)

Exploring aerospace frontiers through flight testing
(Graduate School of Engineering)

An international educational initiative program for bio-nano electronics
(Graduate School of Engineering)

Support program for professional graduate school formation

Raising the curriculum quality of accounting school's to international levels
(Graduate School of Economics and Management)

Long term internship program for graduate students

Education program for the development of "green steel"
(Graduate School of Engineering)

University Education Internationalization Promotion Program

(Strategic International Cooperation Support Project).

Japan-Euro / Japan-China Joint Educational Programs for the next generation leaders
(International Affairs Department)

University Education Internationalization Promotion Program

(Support project for the practical application of overseas advanced research).

Practical Education Program for Next-generation Software
(Graduate School of Information Sciences)

Establishment of three "Professional Graduate Schools"

Professional Graduate School of Accounting, following the Law and Public Policy School

In 2005, the Accounting School was established subsequently to the Law School for students wishing to become judges, prosecutors and lawyers, and the School of Public Policy for those intending to become civil servants engaged in policy planning and implementation. The Accounting School provides a professional education for students who wish to become certified public accountants and tax accountant experts who are able to work as accounting experts in an international setting.

A class at the Accounting School



A wealth of student activities



The 2005 Sendai City Sports Awards honors the individuals and teams of Tohoku University Students' Association. The triathletes, the track and field athletes, members of the rowing team, members of the Shorinji Kempo, those who excelled at the intercollegiate championship series and international competitions.



In March 2006, members of the Rowing Club were selected for the U23 National Team.



In the 2005 Summer Aichi Exposition, the Graduate School of Engineering, Takahiro Takeda demonstrated dancing with humanoid robots (PBDRs).

Kaori Takahashi, a law student with a pen name of Kizuna Tohdo, was presented the Best Yahoo Japan Award in January 2006. The award is for her book "Asita(Tomorrow)" selected, for its excellence on an internet poll, from novels sent to the Yahoo Japan Novel Contest.



The team of male triathletes and a female triathlete won at the Japan Students' Triathlon Championship Games in September 2005 (intercollegiate championship series).



Concert given by the symphony orchestra (students' association)

Many talented students of Tohoku University enjoy club activities and hobbies during their college days in Sendai, the capital of academia.

Participation in Asia-Pacific Youth Championship of Contract Bridge.
 Participation in the Junior World Championship of Orienteering.
 Hiroaki Tsuchiya, Faculty of Economics, has been Japanese champion at abacus accounting for five consecutive years.
 Kenji Otsu, School of Engineering, received a special honorable award in the Japan New Year's Card Contest.
 A team consisting of graduate students specializing in engineering and science received the Best Design Award in a Satellite Design Contest.
 The International Law Club consisting of law students received the fourth prize in the Asian International Law Mock Trial Contest.
 Rikie Ishii, Graduate School of Engineering, won the Best Prize in the Campus Venture Grand Prix (CGV Tohoku), Speech Contents Market.

Campus scenes



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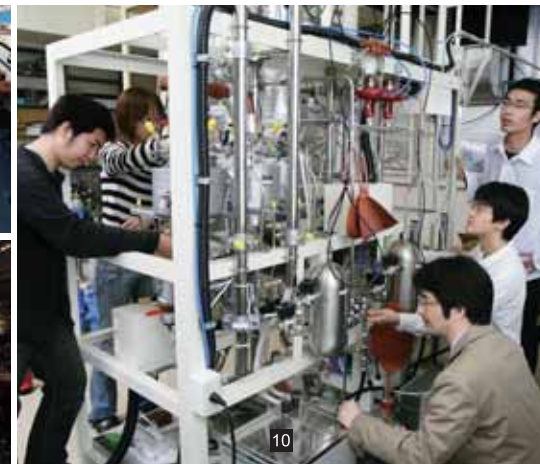
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Topics

Selected as "No.1 University" by Japanese high school teachers

In University Ranking 2006 published by Asahi Shimbun Company, there is a section entitled "Rating of Universities by High School Teachers (Overall Rating)". The newspaper conducted a questionnaire survey of high schools teachers in charge of educational guidance across Japan and compiled the following results.

The teachers were asked the following three questions. "Which university do you recommend to your students?" "In which university do the students enjoy collegiate life including their studies?" "Which university strives for the disclosure of information to students taking entrance examinations, or which university tries to respond appropriately to the inquires of the students?" From overall rating of responses, Tohoku University was ranked top.

No.1	Tohoku University
No. 2	Ritsumeikan University
No. 3	Kyoto University
No. 4	Keio University
No. 5	University of Tokyo

Data: "University Ranking 2006" published by Asahi Shimbun Company

- (1) Cherry blossoms in Katahira Campus
- (2) First green of spring in Aobayama Campus
- (3) Autumn leaves in Kawauchi Campus
- (4) The Botanical Garden in snow
- (5) Advanced Materials Processing Building, Institute of Multidisciplinary Research for Advanced Materials
- (6) Tohoku University, Graduate School of Medicine & School of Medicine (Seiry Campus)
- (7) Scene of Kawauchi Campus
- (8) "Natural Science General Experiment" for freshmen
- (9) Entrance Ceremony
- (10) Scene of scientific research, Graduate School of Science
- (11) Sheep grazing at Amamiya Campus
- (12) Wild Japanese serows in the Botanical Garden

Outlet events for university's accomplishments



Science Café Program opens as a science communication event for the next generation

The Science Café carries the concept that science is exciting; it is where the participants can enjoy scientific discussions over a cup of coffee. In August 2005, Tohoku University Science Café opened ahead of all the other universities in Japan and holds at Sendai Mediatheque once a month. The researchers engaged in the latest scientific projects, the young people who will shoulder the next generation and the general public, all get together and with the help of graduate students as facilitators freely discuss current scientific topics.



Seminar series commemorating the 100th anniversary of Tohoku University was held with the theme: "What Science can Create in the Next 100 Years"

Tohoku University will be celebrating its 100th anniversary in August of 2007 and a Seminar Project was established to commemorate this auspicious event. As part of this event, January 2005 started the four planned seminars to be held at the Nikkei Hall in Tokyo and since then satellite seminars were held in the major cities of Japan.

[Satellite seminars held]

Satellite seminars were held in Nagoya, Yamagata, Akita, Utsunomiya and Koriyama.



The Open Campus Programs and Events had large varieties of attractions aspiring our young generation and the general public

The Innovation Plaza provides On-Demand-Educational Programs with experimental events for elementary school children.

The children toy with plastic bottle rockets in the on-demand educational program.



The Open Campus Program and the Public Educational Program hold events for the general public.

As part of the Open Campus Program, a tea ceremony was held for the general public by the Faculty of Arts and Letters entitled "Admiring the Autumn Colors."



The Open Campus Program gives the prospective students experience in trial university lectures.

The open campus, is regularly held during the summer time where visitors can enjoy a tour of the facility, attend an explanatory meeting, and receive trial university lectures.





The historians and specialists promote activities in the preservation of Miyagi's historical legacy for the benefit of posterity

Miyagi Historical Document Conservation Network
<http://www.cneas.tohoku.ac.jp/miyagi-shiryounet/>

Researchers in Tohoku University and in the other universities of Sendai, who specialize in Japanese History, put emphasis on the disaster of the July 2003 earthquake in Northern Miyagi to promote their activities in the conservation of historical documents. Center for Northeast Asian Studies set up a secretariat that, with the cooperation of officials in local governments, identifies and compiles ancient documents owned by the citizens to establish a data base sought to be beneficial for future generations.



Area Studies on Socio-Cultural Exchange, Center for Northeast Asian Studies

Professor Arata Hirakawa



Field evaluation and verification test of Advanced Landmine Imaging System (ALIS)

<http://cobalt.cneas.tohoku.ac.jp/users/sato/index-j.html>



Prof. Motoyuki Sato and his research team, specialists in the field of applied electromagnetic wave measurement studies and environmental survey studies, received support from the Ministry of Foreign Affairs of Japan and Ministry of Education, Culture, Sports, Science and Technology; to conduct field evaluation in Afghanistan in December of 2004 and also held verification tests in Croatia in February of 2006. They recognized the compelling needs for making laborious tasks in the removal antipersonnel landmines from the war ridden lands. Though efficient application of scientific technology, they developed the Advanced Landmine Imaging System (ALIS); a portable hand-held landmine detection sensor which consisting of a metal detector and ground penetration radar (GPR). The sensor can differentiate a landmine from other objects, without the task of digging them out, by utilizing the reflection of electromagnetic waves for imaging the landmines. It is certain that this application of subsurface measurement technology will continue to make further advancements and broaden into various similar fields.

Center for Northeast Asian Studies
 Professor Motoyuki Sato



An Exhibition held in The University Library "Food Culture in the Edo Period: Tracing the Roots of Slow Food"

In November of 2005, as a project commemorating the 100th Anniversary Events of Tohoku University, the library held an exhibition and a memorial lecture meeting program. The exhibition theme, "Food Culture in the Edo Period: Tracing the Roots of Slow Food" consisted of four parts: (1) a history of Japanese Cuisine, (2) popular meals of the common people during the Edo Period, (3) sake and sweets of the Edo Period, and (4) food and specials products of the Sendai Domain.



Traditional sweets that were popular among the Edo citizens according to the recipes were prepared by Siromatsu Ga Monaka Honpo, Ltd. This well-established confectionary of Sendai City, prepared the sweets, provided the good topics and sold their products in the exhibition hall.

Topics

"HAGIMARU" is an original sake made by the staff, Faculty of Agriculture at Tohoku University The HAGIMARU is distributed as Tohoku University brand sake and commemorates the 100th anniversary of its founding

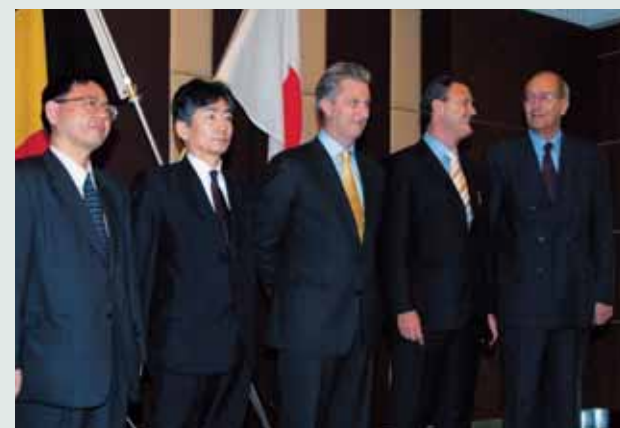
HAGIMARU was produced in February 2006, it is a high quality brewed sake made from only the finest rice, to commemorate the 100th anniversary in the founding of Tohoku University. A graduate of the Faculty of Agriculture, the current Vice Director of Miyagi Prefecture Furukawa Agricultural Experiment Station and other graduates bred and grew the brewer's rice in the Field Science Center, Graduate School of Agricultural Science. The professor, Division of Bioscience and Biotechnology for Future Bioindustries selected the rice malt; and a sake brewer, a graduate of the Graduate School of Agricultural Science helped the staff make the domestic sake. This new sake is an original creation; a product produced only by the staff of the Faculty of Agriculture. The co-op shop of the Faculty of Agriculture, Tohoku University, governs the right of its distribution.





Dr. Ahmed H. Zewail, who was awarded the Nobel Prize in Chemistry, was appointed as a University Professor, Tohoku University.

Tohoku University concludes Academic Exchange Agreement with the Belgian Nuclear Research Center (SCK CEN) followed by other notable International Institutions; a total of 13 institutions



The signing ceremony was held in the presence of the Prince of Belgium, HRH Prince Philippe (center), to establish a cooperative agreement between Tohoku University and Belgian Nuclear Research Centre (SCK CEN), developing a friendly and long lasting relationship.

The Tohoku University concluded the Academic Exchange Agreement with the SCK CEN in June of 2005, with the 13 Institutes in FY2005, the university now collaborates with a total of 94 universities and institutes in 24 different countries and regions.

2005	
June	Belgian Nuclear Research Centre (SCK CEN) (Belgium) Xiamen University (China)
July	University of Bordeaux I (France)
August	National Cheng Kung University (Taiwan)
October	Changwon National University (Korea) Huazhong University of Science and Technology (China)
December	National Chiao Tung University (Taiwan)
2006	
January	Tampere University of Technology (Finland)
February	Ecole Centrale de Lille (France) Ecole Centrale de Lyon (France) Ecole Centrale de Marseille (EGIM) (France) Ecole Centrale de Nantes (France) Ecole Centrale de Paris (France)

Global Operations Centre (GOC) was established for the promotion of international strategies

Tohoku University established Global Operations Centre (GOC) in June of 2005, as its focal point for promotion in its international strategies. GOC contributes to collaborate with the overseas institutions for the implementation of academic exchange agreements and the establishment of Double Degree Programs.



France, the signing ceremony of the Memorandum on Double Degree Program with 5 schools of the Ecole Centrale Group.

November 2005	INSA-Lyon	(France)
March 2006	Ecole Centrale Group (5 schools)	(France)
	Ecole Centrale, de Lille	
	Ecole Centrale, de Lyon	
	Ecole Centrale, de Marsille (EGIM)	
	Ecole Centrale, de Nantes Ecole Centrale, de Paris	
	Tsinghua University	(China)

In November of 2005, Tohoku University signed its first Double Degree Program Memorandum with the Institut National des Sciences Appliquées de Lyon (INSA-Lyon, France) and now, as many as seven overseas institutions are included in this prestigious program

A Double Degree Program is defined as a program in which the exchange student simultaneously obtain a degree from each, Tohoku University and its partner school. Tohoku University signed Memorandums on the Double Degree Programs with three overseas institutions in FY2005, and presently has a total of 7 elite schools participation in this exchange program.

Promoting of projects in international exchange



The department that provided support for foreign exchange was reorganized in April 2005 as the Center for International Exchange. The Centers aims to provide educational programs in motivating the participating students to learn and study in international environments and to take interest in the Japanese language and culture of Japan. The Center also promotes exchange programs for the Japanese and foreign students to enhance international relations and offers them educational advice. Both Japanese and international students, with interest in these activities, can enjoy the opportunity of participating in various in-and-off campus events, traditional festivals and student get-togethers in the Sendai areas.

An International Symposium on Lu Xun – His Starting Point and Memories in Sendai was held in Beijing to commemorate the 100th anniversary of Lu Xun’s studied at Tohoku University

Lu Xun was a great Chinese writer, the Father of Modern Chinese Literature, who studied medicine from 1904 to 1906 at the Sendai Medical College; which is the precedence the School of Medicine at Tohoku University. A numbers of events were held to commemorate the 100th anniversary of his studied at Tohoku University and in September 2005, an international symposium was held for him in Beijing, China.



The “Tohoku University Professor Fujino Award” was presented to Mr. Sun Yi, Director of Beijing Lu Xun Museum

In his short story titled “Fujino Sensei (Professor Fujino)”, Lu Xun wrote about Prof. Genkuro Fujino under whom he had studied while at Tohoku University. As part of the project commemoration the 100th anniversary of Lu Xun’s enrollment, the University decided to establish the Prof. Fujino Award and to be presented to prominent Chinese individuals and groups for contributing to the advancement of education and research at Tohoku University.



Tohoku University Professor Fujino Award Winner
Mr. Sun Yi (Director, Beijing Lu Xun Museum)

The “Tohoku University Professor Fujino Incentive Award” was presented to Chinese graduate students

Tohoku University Professor Fujino Incentive Award Winners

- Rina Sa (Graduate School of Arts and Letters)
- Guangyu Jin (Graduate School of Economics and Management)
- Hongmei Dai (Graduate School of Medicine)
- Zhiqian Yu (Graduate School of Dentistry)
- Chen Lu (Graduate School of Engineering)



Various international conferences and symposiums were held or organized by the university

Many international conferences and symposiums are held in Sendai each year; the university research departments, research institutes and laboratories organize or play an important role, as a secretariat to them, at those academic meetings. Sendai, which is not only an academic city but also a “City of Greenery”, enjoys an excellent reputation as a venue for those international and domestic conventions.

The Graduate School of Medicine organizes Workshops on Quality Improvement Healthcare in July 2005

The Division of International Health held a workshop entitled “A Training of Trainers Course on Quality Improvement of District Health Services” for eight countries in Mesoamerica.



The health teams of Mexico, Guatemala, El Salvador, Nicaragua, Honduras, Costa Rica, Panama and the Dominican Republic participated in the JICA’S training course entitled “Quality Improvement of District Health Services in Mesoamerica” reported activities to solve problems in order to improve quality of health services.

Symposium organized in September 2005 by Graduate School of Law

The 21st Century COE Program Gender Law and Policy Center held an international symposium to promote gender equality and affirmative action in Paris.



The 21st Century COE Program Gender Law and Policy Center, Tohoku University, and French Comparative Legislation Association jointly hosted their first international symposium.

International Academic-Industrial Alliance Exchange Meeting in Lyon, November 2005

Tohoku University held an International Academic-Industrial Alliance Exchange Meeting in collaboration with INSA-Lyon and Ecole Centrale, Lyon. The attendants made presentations, participated in discussions, exchanged information and displayed related materials.

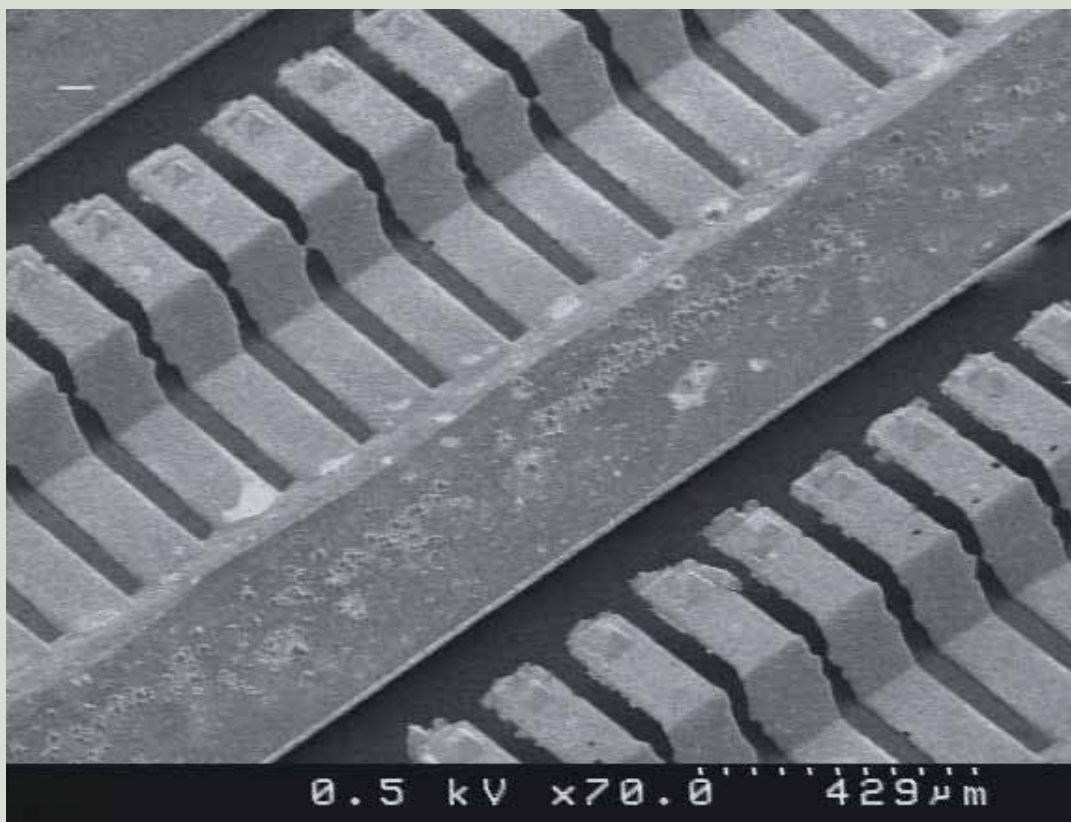


International Frontier Center of Advanced Materials (IFCAM), In December 2005, Institute for Materials Research held an international conference

Two winners of the Nobel Prize in Physics, Dr. Heinrich Rohrer (1986) and Dr. Robert B. Laughlin (1998), were invited to the international conference the theme “Frontiers of Materials Science.”



Strengthening industry-academia-government collaboration



MEMS conductor for wafer test.

MEMS-Core Co., Ltd., established as a Tohoku University based nanotechnology venture company, commercialized a next-generation microsystem



A joint research and development center was established by the Institute for Materials Research in the heart of Osaka to promote partnerships with the local industries of metal processing and parts manufacturing in Japan

Results of “MEMS Park Consortium”

Department of Nanomechanics, Graduate School of Engineering



Prof. Masayoshi Esashi

The demand in Micro Electro Mechanical System (MEMS) is rapidly increasing for development of key component instruments in microsensors and microstructures. The production of integrated systems in highly functional devices of micromachining and nanomachining technology is made possible by the utilization of micro fabrication technology. Prof. Masayoshi Esashi and his research team developed sensors and microstructure by using a glass feed-through and supplied this technology to MEMS-Core Co., Ltd. (Taihaku-ku, Sendai City). The company is striving to commercialize MEMS devices such as probe card for LSI testing and wafer level packaging. Prof. Esashi also plays a leading role in the MEMS Park Consortium, which was established as an intellectual cluster creation project promoted by industry, academia and government sectors which is the collaboration of Tohoku University and Sendai City. MEMS-Core Co., Ltd. is a Tohoku University based Micro/Nanotechnology Venture Company financed by researchers including Prof. Esashi; the achievements of this industry-academia alliance are promoted by Tohoku University as reflected in this project. <http://www.mems.mech.tohoku.ac.jp/>



New plant, MEMS-Core Co., Ltd.



Products/products manufactured by MEMS Core Co., Ltd. at the request of clients

The Osaka location was selected by Prof. Akihisa Inoue, a foremost researcher in the field of non-equilibrium materials.

Director of Institute for Materials Research



Prof. Akihisa Inoue

The Institute of Materials Research announced in January of 2006, the establishment of a research institute in Osaka. It is the collaboration of Osaka Prefecture University, Creation Core Higashi Osaka and the Technology Research Institute of Osaka Prefecture, with aims to promote practical applications of nanotechnology and to meet the needs of local industries. The new research center will be set up as the “Institute for Materials Research, Tohoku University, and Affiliated Laboratory Osaka Center” in 2006, at the Osaka Prefecture University. The areas of the eastern Osaka Prefecture are prominent centers in the metal processing industry and part manufacturing industry in Japan which now face an urgent need to enhance their business in global competitiveness. Prof. Akihisa Inoue, Director of the Institute for Materials Research, decided to foster this Industry-Academia-Government Collaboration Project in the best possible environment for establishing a world leading Institute for Materials Research and Development.



Appearance of metallic glass pressure sensor element



Appearance of finished in-car pressure sensors

Fortifying industry-academia-government collaboration



Attracting the attention of industry leaders to advanced technology in Tohoku University Innovation Fair

In February 2006, Office of Research Promotion and Intellectual Property (Currently, Office of Cooperative Research and Development), arranged an event in Akasaka Prince Hotel (Tokyo), to explain the advanced technology developed by Tohoku University. The University, which has built and fostered cooperative relationships with industry and local communities, held lecture meetings titled "Development of New Medicine by Utilizing Molecular Imaging" and "Dream Materials: Future-oriented Practical Raw Materials." The results of latest scientific studies conducted by the University research staff were displayed and related presentations were made in the Fair.



In expectation of promotion of joint research projects and mutual exchanges in the fields of electricity/information, materials and mechanics

The University concluded an organizational collaboration agreement for research and development and cultivation of human resources with Hitachi, Ltd.



In expectation of promotion of joint research projects in the fields of the environment, materials, information communication and electronics

The University concluded an agreement for organizational partnership and cooperation with the National Institute of Advanced Industrial Science and Technology.



In order to develop highly specialized human resources contributing to molecular imaging studies using positron emission tomography (PET)

The University concluded an agreement with the National Institute of Radiological Sciences.

Enhancement of cooperative relationship with companies and steady progress of joint research and development projects

In collaboration with Yamatake Corporation, Prof. Takafumi Aoki, Graduate School of Information Sciences, and his research team developed the world's most advanced iris verification system.



Starting a scientific advisory system to assist companies

In 2005, ahead of other universities, Tohoku University launched a project to provide scientific advice to companies. At the requests of companies, the departments and institutes dispatch their research staff to companies, who gave scientific instructions or advice for an hourly fee. A total of 50 companies used this system.



Kawauchi Keyaki Nursery, Open for the office and teaching staff of Tohoku University



The Sawayanagi Prize is awarded for Gender Equality Encouragement and Promotion

Tohoku University was the first national university to adopt the "Open-Door" policy, by its first president Masataro Sawayanagi, and also the first to accept female students in 1913. Since 2003, for the encouragement of gender equality, the University awards the "Sawayanagi Prize" yearly, by commending studies and activities that significantly promotes gender equality.



Research Category

Emi Yano
21st Century COE, Gender Law and Policy Center Fellow, Graduate School of Law

Swedish Policies to Combat Domestic Violence - A Perspective on Domestic Violence and the Pursuit of Gender Equality

Activity Category

Masahiro Ishigaki
Research Associate, Graduate School of Economics and Management

Organizing and Expanding a Dad's Network to Encourage the Father Involvement in Family Education

Project Category

Masato Hatakeyama
Doctoral Student, Graduate School of Economics and Management

A Survey Study Involving the Rural Women, their Growth and Advancements Learned through the Process of Entrepreneurial Activity

Project Category (Special Award)

Rumi Matsuzaki
Doctoral Student, Graduate School of Arts and Letters

The pre-modern Samurai Society's Gender System and the Women's Role

Divisions	Main achievements or topics
Graduate School/ Faculty of Arts and Letters	A nation-wide survey and international comparative study (with Korea and Taiwan) of social stratification and social mobility were conducted. A Program for Training Language Researchers and Language Education Specialists (targeted on non-native speakers of Japanese) was adopted as one of the Initiatives for Attractive Education in Graduate Schools. "Mountain and God : An East-Asian Perspective", an international symposium organized by the Research Institute of Tohoku Culture was held.
Graduate School / Faculty of Education	An international symposium commemorating the 100th anniversary of the founding of Tohoku University titled "Creation of New Human Images and Liberal Arts Education in the Globalized Age" was held. An international symposium commemorating the 100th anniversary of the founding of Tohoku University titled "Academic Climate of Tohoku University from the Aspect of Asia" was held.
Graduate School / School of Law	An international symposium titled "Promotion of Gender Equality and Positive Action" was held in Paris. The 21st Century COE Program "Law and Policy of Gender-equal Society, Gender Law and Policy Center," Tohoku University, supported the 3rd Meeting of the Japan Association of Gender and Law. At the symposium, sponsored by the Embassy of Canada in Japan, a lecture was given on the international child abduction.
Graduate School of Economics and Management/ Faculty of Economics	The Tohoku University Accounting School was established to train the world-class accounting specialists. The Regional Innovation Research Center was established to improve the Tohoku district's ability to innovate, and to promote regional industry and economic growth. Prof. Akio Nishizawa received the Association of University Technology Managers (AUTM) Bayh-Dole Award for his remarkable activities related to intellectual property.
Graduate School / Faculty of Science	Neutrinos emitted by the earth were detected for the first time in the world. An event pursuing the excitement of inspirational science, "Let's Experience the Process of Creating New Geometry," was held. Prof. Kira, who specializes in chemistry, received the Wacker Silicone Award which was established to honor scientists who have made significant contributions to organosilicon chemistry. Promotion of the on-demand educational program and participation in the project of Sendai Science Museum titled "World Year of Physics 2005. "In cooperation with the Office for Assistance, Support and Information in the School of Science, the school and the faculty office provides various services including a General Counseling Room to provide appropriate support for students.
Graduate School / School of Medicine	Establishment of Educational Developmental Center for Local Medicine and Department of Local Medical Systems (sponsored by Miyagi Prefecture). Establishment of Medical School Student Award. Initiation of noninvasive extracorporeal shockwave therapy for severe ischemic heart disease. Clarification of new roles of oncogenes ("involvement of oncogene family in congenital abnormality"). Discovery of the regulatory role of neural signals emitted by visceral fat on appetite ("Possibility of application in the treatment of obesity/diabetes").
Graduate School/ School of Dentistry	The proceedings of "The International Symposium for Interface Oral Health Sciences" held under the sponsorship by the Graduate School in 2005 were published (in English). The Graduate School organized the new system "Regional Oral Health Promotion Network" as a framework to foster the oral health, dental treatment and welfare in the Tohoku district. In 2005, the Department of International Oral Health was established as the first of its kind in Japanese dental schools to conduct the research/education in the field of international dental healthcare.
Graduate School of Pharmaceutical Sciences / Faculty of Pharmacy and Pharmaceutical Sciences	The Graduate School held the 126th annual meeting of the Pharmaceutical Society of Japan in Sendai, which attracted approximately 8,000 attendees. The Master of Clinical Science (MCS) course exclusively for medical specialists was established. The Graduate School held a public lecture meeting on pharmaceutical sciences, and 538 citizens participated in the meeting.
Graduate School/ School of Engineering	Development of robot system for information gathering in disaster areas (Prof. Kazuya Yoshida, G). Development of new Co-base High Temperature Alloy (Prof. Kiyohito Ishida, G). Open experiment of virtual window (Prof. Tatsuo Uchida). Development of a support system for seismic retrofit of urban structures considering the geological environment (Prof. Masato Motosaka). Development of highly efficient and safe biofuel cell (Generation of electric power by blood will soon be possible) (Prof. Matsuhiko Nishizawa). World's first successful trial production of 10-layer stacked 3-D LSI (Prof. Mitsumasa Koyanagi, G). World's first successful development of novel biodiesel fuel production technology using ion-exchange resin as heterogeneous catalyst (Prof. Toshikuni Yonemoto, G).
Graduate School of Agricultural Science/ Faculty of Agriculture	Completion of Koji-mold genomic analysis by Prof. Katsuya Gomi and Associate Prof. Keietsu Abe. Prof. Eimei Sato received the Japan Prize of Agricultural Science and Yomiuri Agricultural Award. The Graduate School held a ceremony to introduce the new Tohoku University brand of sake named "HAGIMARU." The Graduate School concluded an agreement on local cooperation with Miyagi Prefecture.
Graduate School of International Cultural Studies	The Graduate School held an open international exchange program titled "Introduction to Korean Culture." The Graduate School published the 13th Journal of the Graduate School of International Cultural studies.
Graduate School of Information Sciences	The Graduate School held an international symposium titled "GSIS Symposium on Information Sciences in the New Era: Brain, Mind and Society." Prof. Tadao Nakamura received The Institute of Electrical and Electronics Engineers (IEEE) Computer Society's Taylor L. Booth Education Award in 2004. Prof. Yoshiaki Nemoto received the IEEE Communication Society's Satellite Communications Contribution Award.

Divisions	Main achievements or topics
Graduate School of Life Sciences	Prof. Makoto Sasaki received The Chemical Society of Japan Award for Creative Work for 2005. Discovery of the gene required for a creeper plant to climb a pole. Estimation of arm movement from the brain activity (successful experiment using monkeys).
Graduate School of Environmental Studies	The Graduate School launched Graduate Course in Strategic Environmental Management and Sustainable Technology Solutions as a program for cultivating human resources in new fields funded by JST. Geosphere environmental informatics and its national-scale application.
Institute for Materials Research	Successful fundamental understanding of Hund's rule. Establishment of a joint research center in the Institute for Materials Science and Engineering, Dalian University of Technology. Establishment of a joint materials research and development center in Osaka. First successful observation of the Fermi surface of plutonium compound.
Institute of Development, Aging and Cancer	Discovery of the protein regulating meiotic division of germ cells. World's first successful invention of "multifunctional stent with anticancer effect and peristaltic function (artificial internal organ)."
Institute of Fluid Science	The Institute held the 2nd International Conference on Flow Dynamics (563 participants). The Institute signed an agreement on the promotion of joint research in the field of ultra-high-speed computing with the Japan Atomic Energy Agency.
Research Institute of Electrical Communication	Prof. Hideo Ohno received Japan Academy Prize in 2005. Prototyping production of compact perpendicular magnetic recording HDD. The Tokyo Forum was held to celebrate the 70th anniversary of the Research Institute of Electrical Communication, Tohoku University.
Institute of Multidisciplinary Research for Advanced Materials	Establishment of Materials Science & Basic Technology Research Center for Industrial Creation as a cooperative organization of the Institute of Multidisciplinary Research for Advanced Materials, Tohoku University and The Institute of Scientific and Industrial Research, Osaka University. The Institute held the 5th Study Meeting of the Institute of Multidisciplinary Research for Advanced Materials, Tohoku University. The Institute held a symposium commemorating the 100th anniversary of the founding of Tohoku University titled "Application and Development of GaN Crystal Technology by Industry-Academia Alliance." The Institute held the Tohoku University Special Science Café titled "Observation of Annular Eclipse."
Center for Northeast Asian Studies	The Center developed a landmine detector and conducted field trials. The Center provided special support for "Exhibition of Altaic Great Assets" held in the Sendai City Museum.
New Industry Creation Hatchery Center (NICHe)	Prof. Hiroyuki Yokoyama succeeded in bioimaging by means of an ultra-short pulse light source semiconductor laser. "Establishment of Basic Technology of Ball SAW Sensor" by Prof. Kazushi Yamanaka. Demonstration of usefulness of ball SAW sensor by the development of high-speed wide-range hydrogen sensor. Practical application of the technology to various sensors.
Tohoku University Library	The Library received the JANUL Award from the Japan Association of National University Libraries in 2005. The Library received the 3rd President's Education Award.
Tohoku University Hospital	Establishment of the Tohoku University Local Healthcare Support Organization.
Biomedical Engineering Research Organization (TUBERO)	The Organization held the TUBERO 2nd Symposium titled "Fusion of Medical Science and Engineering to provide patients with the most effective medical treatment." Associate Prof. Kanzaki gave a lecture in the 4th, the 100th Anniversary Seminars of Tohoku University entitled "Great Advancement in the Quality of Life : Advanced Science for the New-Generation of Medical Treatment."

Graduate School / Faculty of Arts and Letters	General Affairs Section Tel.+81-22-795-6002 http://www.sai.tohoku.ac.jp/
Graduate School / Faculty of Education	General Affairs Section Tel.+81-22-795-6103 http://www.sed.tohoku.ac.jp/index-e.html
Graduate School / School of Law	General Affairs Section Tel.+81-22-795-6173 http://www.law.tohoku.ac.jp/english/
Graduate School of Economics and Management/Faculty of Economics	General Affairs Section Tel.+81-22-795-6263 http://www.econ.tohoku.ac.jp/econ/english/
Graduate School / Faculty of Science	General Affairs Section Tel.+81-22-795-6346 http://www.sci.tohoku.ac.jp/english/
Graduate School / School of Medicine	General Affairs Section Tel.+81-22-717-8005 http://www.med.tohoku.ac.jp/index-e.html
Graduate School / School of Dentistry	General Affairs Section Tel.+81-22-717-8244 http://www.dhd.tohoku.ac.jp/index-e.html
Graduate School of Pharmaceutical Sciences / Faculty of Pharmacy and Pharmaceutical Sciences	General Affairs Section Tel.+81-22-795-6801 http://www.pharm.tohoku.ac.jp/index-e.html
Graduate School / School of Engineering	General Affairs Section Tel.+81-22-795-5805 http://www.eng.tohoku.ac.jp/english/
Graduate School of Agricultural Science/ Faculty of Agriculture	General Affairs Section Tel.+81-22-717-8604 http://www.agri.tohoku.ac.jp/index.html
Graduate School of International Cultural Studies	General Affairs Section Tel.+81-22-795-7541 http://www.intcul.tohoku.ac.jp/index-e.html
Graduate School of Information Sciences	General Affairs Section Tel.+81-22-795-5813 http://www.is.tohoku.ac.jp/index-e.html
Graduate School of Life Sciences	General Affairs Section Tel.+81-22-217-5702 http://www.lifesci.tohoku.ac.jp/english/

Graduate School of Environmental Studies	General Affairs Section Tel.+81-22-795-7414 http://www.kankyo.tohoku.ac.jp/en/
Graduate School of Educational Informatics Research Division, Education Division	Education Affairs Division Tel.+81-22-795-6105 http://www.ei.tohoku.ac.jp/en/
Institute for Materials Research	General Affairs Section Tel.+81-22-215-2181 http://www.imr.tohoku.ac.jp/Eng/
Institute of Development, Aging and Cancer	General Affairs Section Tel.+81-22-717-8442 http://www.idac.tohoku.ac.jp/index.php
Institute of Fluid Science	General Affairs Section Tel.+81-22-217-5302 http://www.ifs.tohoku.ac.jp/index-e.html
Research Institute of Electrical Communication	General Affairs Section, General Affairs Group, Administration Office Tel.+81-22-217-5420 http://www.riec.tohoku.ac.jp/index-e.html
Institute of Multidisciplinary Research for Advanced Materials	Administrative Section Tel.+81-22-217-5204 http://www.tagen.tohoku.ac.jp/
Center for Northeast Asian Studies	General Affairs Section Tel.+81-22-795-6009 http://www.cneas.tohoku.ac.jp/index-e.html
New Industry Creation Hatchery Center (NICHe)	General Affairs Section Tel.+81-22-795-7527 http://www.niche.tohoku.ac.jp/en/
Center for the Advancement of Higher Education	Student Affairs Division, Education and Student Support Department Tel.+81-22-795-7537 http://www.he.tohoku.ac.jp/
Tohoku University Library	General Affairs Section Tel.+81-22-795-5911 http://www.library.tohoku.ac.jp/
Tohoku University Hospital	General Affairs Section Tel.+81-22-717-7007 http://www.hosp.tohoku.ac.jp/
Biomedical Engineering Research Organization (TUBERO)	Public Relations Room Tel.+81-22-717-8595 http://www.tubero.tohoku.ac.jp/

Information for international students

Student Exchange Division, International Affairs Department
Phone: +81-22-795-7776
<http://www.bureau.tohoku.ac.jp/ryugaku/>

Information about the entrance examination

Admission Division, Education and Student Support Department
Phone: +81-22-795-4802
<http://www.tohoku.ac.jp/english/>

For general inquiries

International Exchange Division, International Affairs Department
Phone: +81-22-217-5019 Fax: +81-22-217-4846
E-mail: kokusai@bureau.tohoku.ac.jp
<http://www.tohoku.ac.jp/>

Number of students (as of May 1, 2006)

	School enrollment	Number of international students included
Undergraduate students	10,815	126
Graduate students (Master course, Master's Program, Profession Degree Program)	4,175	301
Graduate students (Doctoral Program)	2,870	477
Attached school	39	0
College	20	0
Research students, etc.	601	290
Total	18,520	1,194

Number of personnel (as of May 1, 2006)

President	1
Executive Vice Presidents	7
Auditors	2
Teaching staff	2,645
	Professors
	Associate professors
	Lecturers
	Research associates
Administrative / Technical staff	2,408
Total	5,063

Agreements on academic exchange (as of March 31, 2006)

Agreements on the University Level	24 countries & regions	94 institutions
Agreements on the Department Level	42 countries & regions	241 institutions

Overseas offices (as of March 31, 2006)

Liaison offices	8 countries	11 centers
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Number of visiting research fellows from overseas (FY 2005)

	66 countries	1,069
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Endowed chairs and research divisions (as of March 31, 2006)

Endowed chairs	11 chairs
Endowed research divisions	8 divisions

Balance sheet (as of March 31, 2006)

(Unit: 100 million yen)

Assets	3,358	Liabilities	1,380	Equity	1,978
(Fixed assets)		(Long-term liabilities)		Capital	1,803
Land	1,337	Accumulated depreciation	453	Capital surplus	128
Buildings, etc.	1,081	Long-term debt, etc.	563	Retained earnings	47
Machinery and equipment	300	(Current liabilities)			
Books and collections, etc.	256	Main liabilities	115		
(Current assets)		Current portion of long-term debt	35		
Cash and cash equivalents	330	Accounts payable, etc.	214		
Accounts receivable, etc.	54				

Income statement (April 1, 2005-March 31, 2006)

(Unit: 100 million yen)

Ordinary expenses		Ordinary revenue	
Labor cost	511	Operating grants	511
Education, research and medical expenses	486	Tuition and fees, etc.	104
General administrative cost	60	Sales of University Hospital	234
		External funding	134
Total	1,057	Others	96
		Total	1,079
Current gross profit			22

The 21st Century Center of Excellence Program (COE Program) in progress

Future Medical Engineering based on Bio-nanotechnology	Masaaki Sato
Unexplored Chemistry: Giant Molecules and Complex Systems	Yoshinori Yamamoto
International Center of Research & Education for Materials	Akihisa Inoue
System Construction of Global-Network Oriented Information Electronics	Tatsuo Uchida
Strategic and Education Center for an Integrated Approach to Language and Cognition	Kaoru Horie
Center for Innovative Therapeutic Development for Common Diseases	Kazuo Sugamura
Exploring New Science by Bridging Particle-Matter Hierarchy	Osamu Hashimoto
Advanced Science and Technology Center for the Dynamic Earth	Eiji Ohtani
The Exploration of the Frontiers of Mechanical Science Based on Nanotechnology	Tetsuo Shoji
International COE of Flow Dynamics	Shigenao Maruyama
Center for the Study of Social Stratification and Inequality	Yoshimichi Sato
Gender Law and Policy in the Gender Equal Society	Miyoko Tsujimura
Comprehensive Research and Education Center for Planning of Drug Development and Clinical Evaluation	Yutaka Imai

Program for Promoting the Establishment of Strategic Research Centers

Biomedical Engineering Research Organization TUBERO (Tohoku University Biomedical Engineering Research Organization)	Makoto Tamai, Director of TUBERO
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[PICTURES] Graduate School / Faculty of Science (p.35-36)

Toward the New Centenary

Tohoku University will celebrate its 100th Foundation Day Anniversary on the 22nd of June in 2007.

The University reconfirms its achievements of the past 100 years, and as a research oriented university contributing its accomplishments to the world and to the local community; it continues to further in progress while observing the traditions. In expectation of future developments, the University has launched the following four major projects to mark this auspicious occasion by establishing: 1) a Tohoku University Foundation, 2) publication of a Centenary History Book, 3) a 100th Anniversary Hall (tentative name) and 4) commemorative events (100th anniversary campaign). The four projects of the 100th anniversary campaign will be fully underway in and after 2006.

Schedule marking the Main Projects of the 100th Anniversary Events

[2006]

- April 5: Seminar for New Students of Tohoku University (Tohoku University Memorial Auditorium)
- May 18: The 100th Anniversary Lecture of Tohoku University "The ICQC 2006 Satellite Symposium in Sendai" (Hotel Taikanso) / Graduate School of Science
- June 12: The 100th Anniversary, Lecture on French Culture "Franco-Japonais Cultural Exchange: Its Economic Dimension" (Kawauchi Campus) / Graduate School of International Cultural Studies (GSICS)
- June : Distribute Tohoku University brand sake "HAGIMARU" / Graduate School of Agricultural Science
- June 22: University Founding Anniversary Day and Tohoku University Pre-Centenary Event
- August 2: The 100th Anniversary Seminar of Tohoku University (Tokyo)
- September 29: The 100th Anniversary Public Symposium of Tohoku University on "Leading Edge of Metabolism, Nutrition and Physiology Sciences: in Expectation of Integration of Sciences with the Poultry Industry" (Forest Sendai) / Graduate School of Agricultural Science
- November 3-14: Special Exhibition: "Plays in Edo Period: Interesting Eco-leisure" (Sendai Mediatheque) / Tohoku University Library
- November 29: The 100th Anniversary Seminar of Tohoku University (Nagoya)
- December 3: The 100th Anniversary Seminar of Tohoku University (Sendai)
- January 13: The 100th Anniversary Seminar of Tohoku University (Tokyo)
- January : The 2nd, 100th Anniversary Mechanical Engineering Seminar of Tohoku University (Student Lobby, Graduate School of Engineering) / Graduate School of Engineering
- February 8-9: "International Forum for Joint Anniversary: Lyon-Tohoku, Teaming for the Future"(Lyon, France)



The 100th Anniversary Hall to be established (CG image)

[2007]

- April 4: Seminar for New Students of Tohoku University (Sendai)
- June : Distribute Tohoku University brand sake "HAGIMARU" / Graduate School of Agricultural Science
- June 22: University Founding Anniversary Day, Establish the official Tohoku University Flag and Color
- July : The 100th Anniversary Seminar of Tohoku University (Tokyo)
- July in late: Open International Exchange Program / Graduate School of International Cultural Studies
- July 28-29: Tohoku University Katahira Festival (Katahira Campus)
- July-September : The 100th Anniversary Science Exhibition (Museum of Natural History, Tohoku University) / Graduate School of Science
- August 20-24: The 100th Anniversary Public Science Lecture / Graduate School of Science
- August 20-24: The 100th Anniversary COE Outreach Café (Green Hall, Graduate School of Science) / Graduate School of Science
- August 20-31: The 100th Anniversary, International Symposium of the 15th Anniversary of the Academic Exchange Agreement between Tohoku University and Siberian Branch Russian Academy of Sciences (Sendai International Center etc.) / Center for Northeast Asian Studies.
- August 25-26: Tohoku University Centenary Anniversary Festival (Katahira Campus)
- August 26: Centenary Anniversary Garden Party (Katahira Campus)
- August 26: The 100th Anniversary Public Concert (tentative name) (Miyagikenminkaikan)
- August 27: Centenary Anniversary Ceremony and Reception (Sendai International Center etc.)
- August : The 100th Anniversary Lectures and Exhibition / Graduate School of Science
- August : Agricultural Science Public Lecture Series / Graduate School of Agricultural Science
- August : International Symposium / Graduate School of Agricultural Science
- August-October : The 100th Anniversary Special Exhibition "History of the City: Samurai-centered to Academia - Sendai, the City of Greenery and Tohoku University (tentative name)" (Edo-Tokyo Museum)
- September 1: Commemorative Celebration (Tokyo)
- September 8: Commemorative Celebration (Osaka)
- September 14-17: The 100th Anniversary Events Special Program "The Dawn and Development of Modern Physics" / Graduate School of Science
- October 5-7: Tohoku University Homecoming and the 100th Anniversary Seminar of Tohoku University (Sendai)
- October 7: Commemorative Symposium for the Tohoku University Student's Friendship Association Sports Department / (Sports Department of the Student's Friendship Association)
- November : The 100th Anniversary Special Exhibition "History of the City: Samurai-centered to Academia - Sendai, the City of Greenery and Tohoku University (tentative name)" (Sendai City Museum)
- December : International Forum for Joint Anniversary (Tokyo)
- December : International Forum for Joint Anniversary (Sendai)



The 100th anniversary wrapping bus



New Aobayama Campus Plan

The New Aobayama Area is found in the western part of Central Sendai, with well known panoramic view of Hirose River, down-town Sendai and of the Pacific Ocean. Aobayama is where Date Masamune, the head of the first domain in Sendai, built his castle 400 years ago. The Kawauchi Campus and Aobayama Campus of Tohoku University are located in the beauty of this natural environment.

The University has long wanted to acquire the large perfectural land adjacent to Aobayama campus and to then reorganize and centralize its institutes and facilities. In 2005, a great step forward was made towards attaining this plan ; the policy for establishing an environment-friendly campus which includes a science park and the land utilization plans has been approved. The project will be launched in 2007, along with the 100th anniversary of the University's founding. Tohoku University will then have three major campuses; **Aobayama-Kawauchi Green Campus, Katahira Urban Campus and Seiryō Medical Campus**. The campus locations which are located in areas including Hirose River and Aobayama, will become the symbols of Sendai, the city of academia.



The locations and shapes of orange buildings are expressed as tentative images and will be changed based on future discussions.

