

New student residences completed

HU has been expanding its facilities to meet the increasing demand for student housing that has accompanied the rise of international students in recent years. In September 2010, HU International House Kita 23 Building 2 was completed as a dormitory for female students. The building has 128 residential rooms (96 international students, 32 Japanese students) and is equipped with a lounge, kitchen, showers, and laundry facility which are used by blocks of eight residents. Free internet access in the residential rooms is also available. In June 2010, 40 rooms were added to HU International House Kita 8 Building 5.

With these new additions, the university now has a total of 443 rooms for international students and researchers. We remain committed to the continued improvement of our accommodations as part of our efforts to further boost international exchanges of students and researchers.



International House Kita 23 Building 2

Useful Links

Official Website of Hokkaido University

General Information, Recent News, etc.
<http://www.hokudai.ac.jp/en/>

International Student Center

Japanese Course, Scholarship, Lodging/Apartment, Studies/Lifestyle Support, etc.
http://www.isc.hokudai.ac.jp/www_ISC/index-e.cgi

Graduate School Website for Prospective International Students

Admission to Graduate Courses
<http://grad.isc.hokudai.ac.jp/cgi-bin/index-e.pl>

Admission Center

Admission to Undergraduate Courses
<http://www.hokudai.ac.jp/bureau/nyu/english/en/>

Beijing Office

Current Students, Prospective Students and Alumni in China
<http://www.hokudai.cn>

Alumni Association in Taiwan

For Alumni in Taiwan
<http://hokudai-taiwan-dousoukai.blogspot.com/>

Access to Campus

Campus Guide Map Including Sightseeing Information (English, Chinese, Korean)
<http://www.hokudai.ac.jp/en/pickup/accesstocampus.html>

Previous Editions

<http://www.hokudai.ac.jp/en/pickup/publicrelations.html>

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HOKKAIDO UNIVERSITY NEWSLETTER

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Emeritus Professor Akira Suzuki wins the Nobel Prize in Chemistry

On October 6, 2010, the Royal Swedish Academy of Sciences announced its decision to award Hokkaido University (HU) Emeritus Professor Akira Suzuki. Dr. Suzuki studied at HU's Graduate School of Science after graduating from the

Hokkaido University (HU) Emeritus Professor Akira Suzuki. Dr. Suzuki studied at HU's Graduate School of Science after graduating from the

School of Science. Upon completion of a Ph.D. course, he became an assistant professor at the Faculty of Engineering, where he dedicated himself to education and research until reaching mandatory retirement age in 1994. The cross-coupling reaction of organic boron compounds (the subject of the research for which the Nobel Prize was awarded) is today globally known as Suzuki coupling, and has facilitated industrial manufacturing in a range of areas including those of medical and pharmaceutical products and liquid crystals. Dr. Suzuki is the first Nobel Prize Laureate from HU and from Hokkaido prefecture.

(continued on P.2)



Akira Suzuki, Emeritus Professor of Hokkaido University, after the Nobel Prize Award Ceremony
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NEWSLINE

Events

04 Sustainability Weeks 2010



05 Joint Symposium with Seoul National University



Research Introduction

06 Prof. Hisayoshi Yurimoto Faculty of Science



08 Development of Innovative Water and Wastewater Treatment System



Alumni, Current Students

12 HU Alumni Today Dr. Ali Awaludin





(from P.1)

The October 6 announcement brought about a drastic change in Dr. Suzuki's life. With a full schedule of media interviews to give and public events to attend, he said with a wry smile at one point that the focus of his work had become meeting and talking with a variety of people rather than doing research. On November 3 he was also recognized with the Order of Culture (Japan's top cultural award), which was presented by the Emperor of Japan in person at a ceremony held at the Imperial Palace. At a pre-ceremony press conference, Dr. Suzuki said, "As a Japanese national, I am happy to receive the nation's highest cultural award."

Dr. Suzuki left for Stockholm to take part in 2010's Nobel Week on December 4, and after arriving, he attended his first official event – a gathering of the 2010 laureates at the Nobel Museum on December 6. Laureates traditionally bring something related their research to donate, and Dr. Suzuki gave a collection of his papers, *Organoboranes in Organic Syntheses* and a model of a large and very complex palytoxin molecule ($C_{129}H_{223}N_3O_{54}$; molecular weight: 2,680). Suzuki coupling has attracted the attention of researchers worldwide since it was used for the total synthesis of palytoxin. Dr. Suzuki also joined other laureates and signed the bottom of a chair at a café in the museum—a custom that has been followed since its opening in 2001.

On December 8, he delivered his Nobel Lecture in the Aula Magna



Donating a model of a palytoxin molecule to the Nobel Museum



Akira Suzuki, Ei-ichi Negishi and Richard F. Heck at Aula Magna, Stockholm University, 2010. © The Nobel Foundation

auditorium at Stockholm University. Under the title *Cross-coupling Reactions of Organoboranes: An Easy Way for C-C Bonding*, he explained in a relaxed manner the advantages of Suzuki coupling which include high stability in water and air as well as high selectivity produced by its efficient synthesis of target compounds. At the end of the lecture, he elicited laughter from the audience saying that everybody can use it as they like since he does not have a patent for it. The lecture attracted a capacity audience of nearly 1,200 students, locals, and other attendees. Afterward, Stockholm University students and others surrounded him for autographs in front of the stage, and he responded with a smile.

On December 10, the Nobel Prize Award Ceremony was held at Stockholm Concert Hall. Dr. Suzuki, smiling widely in a black tailcoat, was on the stage with University of Delaware Professor Emeritus Richard F. Heck and Purdue University Herbert C. Brown Distinguished Professor Ei-ichi Negishi, with whom he shared the Nobel Prize, to receive the gold medal and diploma from Swedish King Carl Gustaf XVI. After the ceremony, he moved to Stockholm City Hall, to attend the Nobel Banquet with 1,300 guests and his family. He appeared to enjoy it, saying that it would be rare to find such an atmosphere in Japan.

Before departing to return to Japan on the morning of December 12, Dr. Suzuki answered questions from Japanese newspaper reporters at his hotel. He showed off his medal and diploma as



Akira Suzuki delivering his Nobel Lecture on Dec. 8, 2010, at Aula Magna, Stockholm University ©The Nobel Foundation

requested, shared his impressions of Nobel Week, and outlined what he would like to do upon returning to Japan. He arrived at Narita Airport on the evening of December 13 a little later than scheduled due to heavy snow and held his first press conference back in Japan at a conference room in the airport. The comments he made with a smile included, "I was pleased that even strangers congratulated me in Sweden." "It made quite an impression on me to receive the medal from the King," and "It is my responsibility to relay to children the importance of science." When he arrived at New Chitose Airport, he said not only to the media personnel but also to the many locals who had gathered in the arrival lobby to welcome him back, "I'm very pleased that the people of Hokkaido are so delighted for me." Looking back on his stay in Stockholm, Dr. Suzuki said the thing that had left the greatest impression on him was the Nobel

Lecture. He encouraged local students and researchers by saying, "Sapporo has an ideal research environment. I want researchers here to keep working because living in the countryside isn't an excuse for not doing more."

"Don't engage in work that deals with insignificant details; do something that will be written about in textbooks.", "Hopes and desires are not things that you get from others; you have to find them on your own." "Go out and experience the world."—are words of wisdom that following the award of the Nobel Prize Dr. Suzuki has actively given to young people. They not only promote the importance of working hard and honing one's potential by learning with people from various parts of the world;

they also reflect his firm belief, based on his own experience, that we should broaden our horizons through interaction with people who have various ideas and thoughts: not long after becoming an assistant professor of the Faculty of Engineering in 1962, Dr. Suzuki read *Hydroboration* by Professor Herbert C. Brown of Purdue University and the book made such an impression on him that he immediately wrote to Prof. Brown, and the following July he went to Purdue to study under him.

Dr. Suzuki said, "I'd now like to spend time reading new chemistry journals and writing reviews and books. Chemistry is so much fun – I'll never give it up." Few can doubt his endless passion for the subject.



Akira Suzuki receiving his Nobel Prize from His Majesty King Carl XVI Gustaf of Sweden at the Stockholm Concert Hall, 10 Dec. 2010. © The Nobel Foundation

Celebrating Hokkaido's first Nobel Laureate

The news of Emeritus Prof. Akira Suzuki winning the 2010 Nobel Prize in Chemistry was a great cause for celebration not only for HU, but also for the whole country. Dr. Suzuki is a born-and-bred Hokkaidoite – he was born in the town of Mukawa, attended high school in Tomakomai, and studied at HU. His award is a great honor for the people of Hokkaido.

The Nobel Prize was given in recognition of Dr. Suzuki's research on what is now known as the Suzuki cross-coupling reaction. I do not believe many people would have heard of it before the award was announced, but even without knowing exactly what it means, most people can conjecture that it involves joining things together. Many everyday materials, such as medicine, agricultural chemicals, clothing, and plastics, are manufactured from low-molecular-weight organic compounds derived from oil and other materials. Suzuki cross-coupling is a novel approach to coupling organoboronic acids with organic halides using palladium as a catalyst. Dr. Suzuki's paper on this cutting-edge approach was first published in 1979.

The Suzuki cross-coupling reaction has today entered widespread use because it is easier, safer, and more trustworthy than conventional methods.

Its effectiveness is particularly evident in the coupling of aromatic rings – a task that was previously difficult. The approach is used in exploratory research in various fields, including those of biologically active natural products, medicine, and agricultural chemicals. It has also been adopted for the development, medicine and agricultural chemicals.

Use of the Suzuki cross-coupling reaction is widespread because it is easier, safer, and more dependable than conventional methods of cross-coupling, and its effectiveness is particularly evident when utilized to accomplish previously challenging tasks such as coupling aromatic rings. Other examples of utilization are in exploratory research in biologically active natural products and agricultural chemicals. Also, it is used in the development of conductive polymers (e.g., polyphenylene), which have recently generated significant discussion, and π -conjugated materials based on molecular design, such as liquid crystals and organic electro-luminescent media. Beyond these uses, the Suzuki cross-coupling reaction has garnered attention for its utilization in industrial-scale manufacturing, including production of the hypotensive drug Losartan by Merck & Co., Inc., fungicide boscalid

by BASF, and liquid crystals by Merck & Co. and Chisso Corporation.

As a colleague of Dr. Suzuki, I must say that we never thought that things would transpire as they have. The fundamental joy of making new discoveries has had the fortunate effect of leading to this unexpected outcome. It is also gratifying to see these discoveries attracting the attention of other researchers and providing inspiration for future breakthroughs. I deeply appreciate having had the chance to work closely with Dr. Suzuki for more than four decades.

Written by Norio Miyaura,
Specially Appointed Professor,
Faculty of Engineering



Researchers who have studied under Dr. Suzuki (Prof. Miyaura, left of front row) © The 2010 Nobel Media Photo: Fred A. Lewis



Sustainability Weeks 2010



A lively discussion at the Opening Symposium

The fourth annual Sustainability Weeks, proved to be a unique event of unparalleled social contribution and international exchanges, covering a wider range of disciplines and tackling a greater number of challenges than in previous years. It is now growing to be one of the signature events at HU. The main theme for 2010 was *Toward a Society Offering Quality of Life and Human Dignity for All*. Over the two-week period from October 25 to November 7, the gathering followed an intensive program involving 38 individual sessions (47 if including pre- and post-events).

This year's Sustainability Weeks program highlighted humanity in contrast with past Sustainability Weeks events, which focused on natural and social environments. In line with the

main theme, a wide variety of sessions were held daily. In addition to the usual style of events such as international symposiums, public seminars, museum exhibitions, film screenings, debates, and a student research poster contest, there were also unique ways for attendees to contemplate global challenges such as a contest for student ideas, a campus tour to experimental facilities, an Ainu language speech contest, candle night with candles made from waste oil, and operation of Velotaxi cycle rickshaws to help reduce CO₂ emissions.

It is difficult to resolve challenges that threaten the survival of humans (i.e., sustainability) by any one state or region acting alone. Cooperation is needed. To help address these challenges, we have actively encouraged our overseas

partner institutions to participate in the Sustainability Weeks program and jointly host events. For the 2010 program, we invited representatives of universities with which we had concluded partnership agreements in the previous year in order to strengthen these relationships. Representatives from Dalhousie University in Canada, Universiti Sains Malaysia, Technische Universität München in Germany, Sichuan University in China, the AGH University of Science and Technology in Poland, and Yonsei University in South Korea introduced sustainability initiatives taken at their universities. The meeting also allowed students to consider the possibility of short-term study at these universities and faculty members to contemplate possible collaboration in summer programs and other educational courses.

Sustainability Weeks 2011 starts on October 24, and contributors from 2010 will be given a chance to present their research achievements and activity results from the past year. Through the participation of new proponents, HU views Sustainability Weeks as providing a platform and impetus to further the message of sustainability on a global scale.

For more information, please visit <http://www.sustain.hokudai.ac.jp/sw>



Velotaxi cycle rickshaws to help reduce CO₂ emissions



Commemorative photo at the award ceremony for the student research poster contest

13th HU-Seoul National University Joint Symposium

The 13th HU-Seoul National University Joint Symposium was held at the Keio Plaza Hotel Sapporo and on HU's Sapporo Campus from November 25 through November 27, 2010.

The Plenary Session on November 25 began with a greeting by HU President Hiroshi Saeki, followed by a special address from SNU Executive Vice-President & Provost Myung-Jin Park. Keynote speeches were tied into the theme *The Function of Higher Education in the 21st Century – Gap between Asia and the West: Classes Taught in English and the Credit Transfer System* –, and were given by Prof. Toshihisa Honma from HU's Graduate School of Information Science and Technology, who explained educational models based on the Knowledge Management Concept, and Associate Prof. Shin, Jung-Cheol of the Department of Education, SNU, who elaborated on the relationship between education and research and the current status of higher education with reference to statistical data from various countries. After the keynote speeches, a stage performance was put on by EN, a Yosakoi Soran dance team of HU students.

This year, a total of 12 Satellite Sessions, including three before the Plenary Session, were held in a range of fields including science, medicine, engineering, pharmacy, and pedagogy. During these sessions, presentations on research achievements and research exchange sessions for graduate students, etc. were held. Some Satellite Sessions were attended by participants from overseas universities other than



Commemorative photo after the Plenary Session

Seoul National University, and gave the event a stronger international flavor than usual.

The symposium this year welcomed more than 80 faculty members and students from SNU, and a total of 630 people from HU and SNU joined the Plenary Session and Satellite Sessions. The Joint Symposium serves as a prime forum for young researchers and students to present their research achievements and also acts as the driving force behind enhanced exchanges between the two universities. It is hoped that HU and SNU will continue to foster further partnerships and cooperative relationships through these joint symposiums.

HU Exchange Days held in Changchun, China

HU held two exchange events at Jilin University on November 11 and at Northeast Normal University on November 12 to promote cooperation in education and research between Japan and China and to develop individuals with a global viewpoint and a spirit of innovation.

The events introduced HU's history, current status, and cutting-edge academic research achievements to Chinese students, and promoted researcher-student exchanges between the universities through direct communication with Japanese faculty members and students, and at the same time enabled the Chinese students to appreciate the differences between Japanese and Chinese cultures. The events were attended

by approximately 30 faculty members and students including Executive and Vice President Takeo Hondoh from HU.

Participants involved individuals in university education in Japan and China as well as students. Jilin University Deputy President Zhao Ji, Changchun University of Science and Technology, Vice President Sun Weizhi (both HU alumni) and Northeast Normal University President Shi Ningzhong were among those that listened to an introduction to HU departments and divisions, a lecture by Prof. Bunshi Fugetsu of HU's Faculty of Environmental Earth Science and other presentations.

Additionally, HU graduate schools with close ties to the Chinese institutions hosted research exchange seminars with their counterparts. On November 11, the HU Graduate School of Law and the Jilin University Law School held a seminar at which students from both institutions actively exchanged opinions. Another seminar was held the following day between HU Graduate School of Science's Department of Mathematics and Northeast Normal University's School of Mathematics and Statistics.

At both venues, faculty members with experience of studying at HU also made presentations to students from both universities. Study-abroad counseling sessions were attended by students interested in studying at HU, and they actively asked questions to faculty members of HU and the Beijing Office staff. These events attracted a combined total of about 350 visitors. HU remains committed to its continued efforts to publicize itself and its achievements and to promote international exchanges of students and researchers.



Executive and Vice President Takeo Hondoh delivers an address



Researchers Introduction Series ③

Prof. Hisayoshi Yurimoto

Where did water on the moon come from? Prof. Hisayoshi Yurimoto of the Faculty of Science answered this intriguing question. In January 2011, his research team analyzed rocks brought back from the Apollo mission and concluded that lunar water may have originated from comets which smashed into the moon billions of years ago. Prof. Yurimoto has attracted worldwide attention as a leading expert on cosmochemistry which attempts to shed light on the formation and evolution of the solar system. More recently, he has been involved in the *Hayabusa space probe* – the world's first spacecraft to return from a celestial body other than the moon – and has played an important role in analyzing particles brought back from the asteroid on which it landed. These studies have been made possible by the world's first isotope microscope which was developed by Prof. Yurimoto and makes it possible to reproduce and observe isotopic distribution of matter in three dimensions. Because isotope abundance ratios vary on each planet, investigating the isotopes of materials can shed light on their roots – the planets where they originated – and allow us a glimpse into the unknown history of the universe and the time from before the formation of the solar system.

Prof. Yurimoto worked as a senior researcher at the South Dakota School of Mines and Technology in the U.S.A. for a year in his early 30s. Although he was not good at English, he was able to enjoy himself because of his optimistic nature, and therefore had no major problems living in a small town where there were no other Japanese people. Contrarily, he was able to observe American society close-up. The family gatherings of his colleagues and other parties he attended impressed on him the importance Americans put into socializing. This free interaction with a broad spectrum of people led him to believe that as long as he has a grasp of the problem at hand, socializing can lead to unexpected solutions. For example, when he ran into a problem with a key component on the isotope microscope, he was able to resolve it after running into a friend at a high school reunion that happened to be an engineer. His own endeavors as well as through his encounters with people lead



Prof. Yurimoto with his isotope microscope

to the development of the isotope microscope after more than a decade of work.

Prof. Yurimoto's laboratory is located in the Creative Research Institution Sousei (CRIS). This institute houses researchers specializing in the sciences, engineering, agriculture, and life sciences, and allows them to interact with people outside their specialties. Prof. Yurimoto finds the environment intellectually stimulating because he can investigate other disciplines such as the life sciences and nanotechnology instead of only the distant universe through his isotope microscope.

"The basic aim of researchers should be to meet new challenges without fear of error. Just give it a go. Even if it is a weird idea from a student, try it. The achievements I have made so far have resulted in lots of unexpected results. Researchers should remember to enjoy their work." Prof. Yurimoto's eyes still sparkle with the ambition he had as a boy astronomer, and his new challenges of analyzing the asteroid particles brought back by the *Hayabusa*, promoting the *Hayabusa-2 Project* as Chair of the Science and Technology Assessment Committee, and engaging in collaborative research projects with specialists from different fields are all tasks that he looks forward to starting.

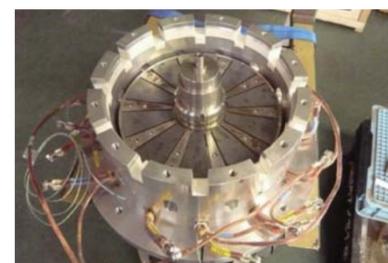
Written by Yohei OZUKA / Master's Course 1st year
Graduate School of International Media &
Communication, and Tourism Studies

Motor Developed that Frees Hybrid Vehicle Dependence from Rare-Earth Minerals

A research team led by Prof. Satoshi Ogasawara and Associate Prof. Masatsugu Takemoto of the Graduate School of Information Science and Technology together with the New Energy and Industrial Technology Development Organization (NEDO) has developed a hybrid-vehicle motor that does not require the use of rare-earth minerals.

Ordinarily, ferrite magnets made from iron oxide and other materials have

less magnetic power than conventional motor magnets made using rare-earth minerals; however, the redesigned motor using ferrite magnets can achieve a level of output comparable to that of rare-earth motors. New technologies using inexpensive ferrite magnets will allow independence from unreliable sources. This new technology will in fact enhance Japan's edge in the increasingly competitive field of next-generation vehicle development.



A prototype of the motor

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2010 Daiwa Adrian Prize awarded to Prof. Shigeki Takeuchi of the Research Institute for Electronic Science



Award ceremony at The Royal Society (Prof. Takeuchi: left)

Prof. Shigeki Takeuchi of the Research Institute for Electronic Science and Prof. Jeremy O'Brien from the UK's University of Bristol received the 7th Daiwa Adrian Prize for their joint research on photonic quantum information science and technology, and the development of new technologies based on harnessing quantum mechanics – a fundamental branch of physics theory relating to behavior on a microscopic scale. Daiwa Adrian Prizes are given on a triennial basis in recognition of significant scientific collaborations between Japanese and British research teams. Awardees are selected by the Trustees consisting of Fellows of the Royal Society. On December 2, 2010, six prizes, including the one received by Prof. Takeuchi and colleagues, were awarded to Japanese

and British research teams at the award ceremony held at the Royal Society.

The world of quantum mechanics is a microscopic world in which atoms, the basic units of matter, and photons, the minimum units of light, are governed by rules that differ from the world of classical mechanics that we experience everyday. The new quantum mechanics technologies are expected to lead to the development of quantum computers capable of solving questions that stump currently available machines. These technologies are also expected to help develop quantum cryptography technologies based on physical laws that would be able to guarantee safe communication.

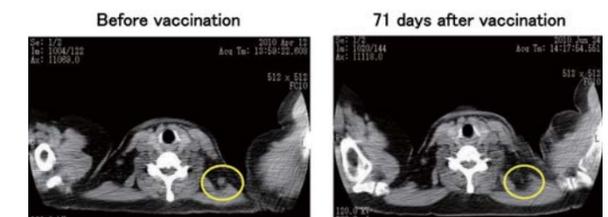
The research teams led by Prof. Takeuchi and Prof. O'Brien developed an optical quantum gate device for single-photon operation, and developed one of the world's largest optical quantum circuits capable of filtering a certain state of quantum entanglement through a process of combining the gates in 2009. In 2007, they also succeeded in beating the standard quantum limit in optical phase measurements using an interferometer with four entangled photons. This achievement was recognized with the 2007 *Scientific American 50 Award* as opening the way for the future development of highly sensitive optical sensors.

The award of the Daiwa Adrian Prize is expected to boost their current research and further develop exchanges between HU and the UK scientific world, including the University of Bristol.

A novel cancer vaccine therapy with artificial helper/killer hybrid epitope long peptide (H/K-HELP)

A research team led by Prof. Takashi Nishimura of the Institute for Genetic Medicine carried out an initial clinical research for cancer vaccine therapy with artificial helper/killer hybrid epitope long peptides (H/K-HELP) that can activate both T-helper (Th) cells and cytotoxic T lymphocytes (CTL). The team ascertained that the H/K-HELP vaccination completely eliminated recurrent and metastatic breast cancer cells in the cervical lymph nodes that had previously shown resistance to both anticancer drugs and radiotherapy. The vaccine also succeeded in suppressing colorectal cancer metastasis to the lung.

Th cells play a commanding role in the body's fight against nonself antigens such as tumors by working on CTL, which directly kill tumors. Conventional vaccines have focused on activating only CTL, but Prof. Nishimura focused on type1 Th (Th1) cells and developed a novel H/K-HELP vaccine that simultaneously activates both Th and CTL by synthesizing 40 amino acids artificially.



Complete remission of breast cancer by the vaccination

In addition to this vaccine, Prof. Nishimura is planning tumor-vaccine cell therapy involving the concurrent use of tumor-antigen specific Th1 cells with the aim of developing improved tumor immunotherapy.

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Development of Innovative Water and Wastewater Treatment System for Sustainable Urban Water Metabolism



Research Director
Prof. Satoshi Okabe



The Membrane BioReactor (MBR) research station at Souseigawa River wastewater treatment, Sapporo

Prof. Satoshi Okabe of the Faculty of Engineering is the leader of the *Development of Innovative Water and Wastewater Treatment System for Sustainable Urban Water Metabolism* research project. The project started in October 2009 and is sponsored by the Japan Science and Technology Agency (JST). It is one of the JST's *Core Research for Evolutionary Science and Technology* (CREST) umbrella programmes and has the goal of solving critical water problems and enhancing water management reliability in megacities using innovative technology and integrated water resource management techniques.

Sustainable and adequate supplies of safe water are essential for human well-being, and to increase the sustainability of a safe water supply, it is necessary to depart from the conventional unidirectional flow of usage and disposal. Such an autonomous and decentralized water-recycling system in which diverse

water resources are created, conserved, and utilized effectively will support the idea that water should be used efficiently multiple times in a cascading rank of high to low quality priority.

In such a system, non-potable water—such as industrial and recreational water—which comprises the majority of total demand could be replaced with high-grade reclaimed wastewater that has undergone rigorous physical, chemical, and microbiological quality testing. It is the main concern when using reclaimed wastewater in a domestic setting that the health risks are associated with the existence of pathogens and toxic chemical compounds that are usually present in low concentrations.

Therefore, in order to implement a sustainable water usage system, first tools must be developed to assess the impact of thousands of trace chemicals on our bodies, and then water and wastewater treatment technologies that are cost-effective and energy-efficient

must be explored and implemented. To this end, this project strives to develop membrane technology for cutting-edge advanced water and wastewater treatment methods for autonomous and decentralized water-recycling systems. In addition, it is also aimed to establish a novel multi-endpoint bioassay to assess the health risks of micropollutants through the application of toxicogenomics and proteomics to determine the microbiological risks of pathogenic bacteria and viruses which are assessed using molecular based techniques. After these first steps have been cleared, the final step is to test the feasibility and reliability of the water and wastewater treatment systems and comprehensively evaluate them by constructing demonstration plants.

The water quality we envision achieving by our proposed cutting-edge technologies will dramatically improve conventional water treatment systems, by making it possible to recycle and reuse water at different levels. This concept of autonomous and decentralized water-recycling systems is applicable not only in Japan, but also in developing countries because it does not require high-tech infrastructures such as systematic sewer networks.

The global market for water businesses is projected to reach 100 trillion yen within the next fifteen years. This research project will support Japanese industry by increasing their international competitive power.

10th Meeting of Asian Association of Veterinary Schools

The 10th Meeting of the Asian Association of Veterinary Schools (AAVS) was held at the Graduate School of Veterinary Medicine on September 21 and 22, 2010.

AAVS was established in 2001 with the aim of sharing information on and solving problems facing veterinary schools in Asia. This year's meeting welcomed 34 participants, including deans of major veterinary schools in Japan as well as those from East Asia and Southeast Asia. Under themes including zoonoses, food safety, animal

welfare, and environmental toxicology, participants made presentations on the current status, problems, and future prospects of veterinary medical education in their countries and actively exchanged views and opinions.

They also observed the Graduate School of Veterinary Medicine, its affiliated Veterinary Teaching Hospital, and the Research Center for Zoonosis Control. The successful event came to a close with participants saying that the meeting had been both effective and productive.



A lively discussion

International Summer School in Environmental Science held

From June 19 to July 1, the *Establishment of the Center for Integrated Field Environmental Science* Global COE Program hosted the International Summer School 2010 at the Field Science Center for Northern Biosphere's Akkeshi Marine Station and on the Sapporo Campus. The aim of the school was to support students in doctoral programs in acquiring the skills needed to become full-fledged researchers with the ability to lead international/interdisciplinary research projects in the future. This year was the second time for the program and welcomed a total of 21 graduate students from 16 countries through international recruitment, including students from Graduate School of Environmental Science and the Graduate School of Agriculture. Held under the title of *Cascading interactions among ecosystems*, this year's program focused on inter-ecosystem connections such as interaction between terrestrial and marine ecosystems and the impact of land use on ecosystems in downstream areas.

The summer program made optimal use of the university's field facilities, long-term ecosystem monitoring system, and support structure for education and research programs by allowing the participants the opportunity to hone their skills in field surveying and monitoring, poster presentation, and methods of selecting and planning research themes. More specifically, field sessions were held on various topics related to terrestrial and marine ecosystems—particularly those in forests and wetlands in the Bekanbeushi river basin, Lake Akkeshi, and Akkeshi Bay—and the participants learned about

ongoing research activities and the methods of surveying and monitoring in each of these ecosystems.

On the last day, a group discussion was held at the Sapporo Campus's Enyu-Gakusha building; and participants took advantage of the opportunity to engage in discussions with each other and give constructive feedback on one another's research. The Summer School allowed the participants to improve their communication skills by providing the opportunity to engage in group discussions, make presentations, and debate in English, and had the effect of creating relationships based on mutual trust. These exchanges are expected to continue and lead to the development of future international cooperation and joint research in field environmental science.



Participants collect organisms from the lake bottom aboard a small training vessel

Borderlands Forum in Tsushima Island



Presentation by Prof. Emmanuel Burnet-Jailly of the University of Victoria The Borderlands Roundtable at the Cultural Center

The Slavic Research Center held the 4th Borderlands Forum on November 12 and 13, 2010 under the joint auspices of its "Reshaping Japan's Border Studies" Global COE Program and the "Establishment of Japan's Network on International Border Studies" project, as supported by the Sasakawa Peace Foundation. The forum took place at the Tsushima City Cultural Center in Nagasaki Prefecture. The event was intended to allow representatives of local governments located

in borderland areas and experts in border studies at home and abroad to present and discuss specific challenges facing local governments from local perspectives and search for solutions through global comparative viewpoints.

On day one, experts from Denmark, Canada, France, and South Korea highlighted the present state of border issues in their countries. On day two, representatives from local governments in Tsushima, Nemuro, Ogasawara, and Yonaguni and other speakers explained their respective current borderland situations. The Borderlands Roundtable on proposals for local initiatives was also held, with Slavic Research Center Prof. Akihiro Iwashita serving as the moderator. Students from the seminar taught by Associate Prof. Yuki Asaba of the Yamaguchi Prefectural University also outlined their survey results in a presentation entitled *Mental maps in Tsushima – Perceptions of local high school students on Korea and Koreans*. The two-day event concluded successfully, and drew nearly 300 participants.

On the sidelines of the forum, an itinerant exhibition called the "Unknown Tales of Japanese Borders" was held at the Cultural Center gallery to introduce research results to the locals. It showcased a replica stone marker indicating the border between Japan and Russia that had been installed in Sakhalin, materials with connections to the border between Yaeyama and Taiwan, and other exhibits. Related DVD videos were also shown.



International symposium hosted by the Research Faculty of Media and Communication

On June 26 and July 2, 2010, the Research Faculty of Media and Communication hosted a public symposium in the Enyuu Gakusha building on the Sapporo Campus and at HU's Tokyo Office on *Supranational Frameworks, Standardisation, Networking: Organised Diversity Management in Europe, Japan, and Africa*. The symposium examined extra-governmental approaches to systematically organize elements of social diversity such as linguistic, cultural, ethnic, religious, and nationality differences through examples from Europe, Japan, and Africa. The speakers from the Research Faculty were Prof. Satoshi Hashimoto, Associate Prof. Takako Nabeshima, and Associate Prof. Jun Kaneyama. Dr. Werner Stuessler, President and Chairman of the European Academy of Bozen/Bolzano (EURAC) based in the South Tyrol region of northern Italy was the guest lecturer and spoke on the *Organised Diversity Management in Europe and the Case of South Tyrol*.

South Tyrol is the seat of EURAC and is a region where three languages – German, Italian and Ladin – are spoken. It is known as a successful example of an area with minority self-government. Due to its multi-bordered location, and regional characteristics, EURAC actively develops research projects in a wide range of fields, including those related to minorities, the media, ICT-applied multilingual education, corporate culture, and tourism studies. The institution is a leading center for research on minority issues in Europe. As EURAC shares many institutional characteristics with the Research Faculty of Media and Communication and the Graduate School of International Media, Communication, and Tourism Studies, development of collaborative relationships is expected in the future.

The symposiums in Sapporo and Tokyo both attracted capacity audiences and concluded successfully.



EURAC President and Chairman Dr. Stuessler delivers his lecture



Sapporo venue

Wrap-up workshop for the JSPS Exchange Program for East Asian Young Researchers held in Thailand

On August 26, 2010, the Faculty of Fisheries Sciences hosted a wrap-up workshop on *Cultivating the Next Generation of Southeast Asian Women Researchers in Marine Sustainability* at Thailand's Kasetsart University.

The events were coordinated by Prof. Katsutoshi Arai for his project selected by the Japan Society for the Promotion of Science (JSPS) *Exchange Program for East Asian Young Researchers – Invitation from EAS member Countries*. It promoted research exchanges by inviting 14 young women researchers from four partner institutions: Kasetsart University and the Asian Institute of Technology, Walailak University, and the Southeast Asian Fisheries Development Center.

The wrap-up workshop was attended by approximately 60 people, including HU faculty members, invited Thai researchers, and individuals from the partner institutions. Young Thai researchers invited to the workshop presented their research outcomes, and open discussions on the future of inter-university collaboration in fisheries between Japan



Group photo

and Thailand were held. Representatives of the institutions summed up the program, and although the workshop marked the end of the JSPS Exchange Program, future opportunities for research exchange is expected due to the success of the program.

Graduate School Introduction Series 14

Graduate School of Dental Medicine and School of Dental Medicine

The School of Dentistry was established in 1967 and was followed by the establishment of the Graduate School of Dental Medicine in 1974. Currently, the Graduate School of Dental Medicine has one course of Oral Medical Science and three divisions: Oral Functional Science, Oral Health Science, and Oral Pathobiological Science. It also has a Cooperation Chair (Section of Stomatognathics) and a Collaborative Chair (Section of Geriatric Oral Science). The graduate school is a vibrant place with an academic atmosphere that transcends the framework of its different divisions. This distinctive culture produces a variety of research achievements that help to shape the world of dental science.

The Graduate School of Dental Medicine has 93 faculty members, who teach students in the four-year doctoral degree program and engage in research. In addition to its conventional Researcher and Educator Training Course, the school has also established the Advanced Clinical Dentistry Training Course to foster professionals with advanced specialized skills who are equipped with both the abilities and the research mentality required for dental

practice. The school further makes efforts to develop researchers who will play active roles in interdisciplinary and multidisciplinary fields rather than in dentistry alone, and also strives to actively enroll students from various faculties – not only those from faculties of dentistry. Currently, the school has 151 students.

The Graduate School of Dental Medicine is also an ardent proponent of international cooperation among universities. It has concluded international exchange agreements with six overseas faculties and graduate schools of dentistry. As continued expansion of the international exchange program is expected, the school has established a support office for international students. Eight international students are currently enrolled, and the graduate school offers courses in English throughout the year.

The School of Dental Medicine includes the Department of Dentistry, which admits 53 students every year to a six-year program divided into three parts: Basic Education for one year, Professional Education for three years, and Integrated Education for two years. After completing the program,

students take the National Board Dental Examination to become certified dentists. The Department actively enrolls internationally, and currently has 348 students, including three from abroad.

Join us at the vibrant Graduate School of Dental Medicine and School of Dental Medicine in our pursuit of excellence in dental education, practice, and research.



Clinical training for students



Tooth brushing lecture for local people in Bangladesh

International student gatherings

The Graduate School of Law and the Graduate School of Economics and Business Administration held parties with their international students on October 28, 2010. Of the combined ninety-nine international students of the Graduate School of Law, School of Law, and the HU Public Policy School (HOPS), sixty international students, Japanese students, and faculty members attended the gathering. The event began with a video letter from Dean Teruki Tsunemoto, and was emceed by an international student and a Japanese student with experience studying abroad. Participants had a great time introducing themselves in a unique fashion and playing bingo.

International students account for about half of the master's degrees students in the Division of Modern Economics and Business Administration. The annual increase in the number of international students attests to the high turnout at the third gathering for international students. One hundred people attended: international students of the graduate and undergraduate schools, their tutors/supporters, Japanese students with an interest in international exchanges, and faculty members connected to the graduate school. A Japanese first year MA student and a

second-year undergraduate student from Kyrgyzstan emceed the event which featured quizzes and other forms of entertainment and created a congenial atmosphere.



Gathering (Graduate School of Law)



HU Alumni Today—Dr. Ali Awaludin, Assistant Professor of Gadjah Mada University, Indonesia



Assistant Prof. Ali Awaludin

When I was a Master's degree student in Chulalongkorn University in Thailand, my study program gave me the opportunity to invite a professor in Japan to enrich my research work. After sending some e-mails to Japan, a HU professor replied to me, and this was the beginning of my interest in HU and prompted me to find out more about Sapporo— its culture, lifestyle, education and climate. Since I can not see snow in Indonesia, I thought that going to Sapporo would be a very special journey. After my Master's degree program, I was granted a scholarship by the AUN/SEED-Net for doctoral study in Japan and I decided to apply to HU. I arrived at HU in September 2005.

I joined the Built Environment Division of the English Engineering Education (e3) program of the Graduate School of Engineering, and I found a very good academic atmosphere and formed warm friendships with other students. As a doctoral student, it is true that research and papers are the first priority all

through the week and over the weekend, and I found it challenging to prepare for the regular meetings with my professors and study Japanese at the same time. When I had to communicate with the laboratory staff, we communicated by a combination of drawings and simple Japanese phrases. My Japanese skills gradually improved, and during my tenure as the chair of the Indonesian Student Association of Hokkaido and vice-president of HUISA (HU International Student Association) I further progressed because I participated in gatherings with friends which also relieved my homesick feeling.

I lived apart from my wife and daughter for my first two years in Sapporo because I knew that I would not be able to devote time for them during my doctoral studies. In May of 2006, a big earthquake hit Yogyakarta, the city where my family lives and I was not able to contact them immediately. After I finally got in touch with them, I found out that they were fine and they encouraged me to focus on my studies. Their understanding enhanced my study spirit. For some weeks afterward, I worked day and night doing experiments and also going around Sapporo with some other Indonesian students to gather donations for the quake victims.

After I finished my doctoral studies I stayed on at HU as a post-doctoral fellow for two more years sponsored by the Japan Society for the Promotion of Science (JSPS), and in the middle of September 2010, I returned safely to my home country after five years. During my tenure as a post-doctoral fellow I was honored to receive the 2009 JWRS Progress Award from the Japan Wood Research Society for my scientific papers.

Presently I work as an assistant professor at Gadjah Mada University. My students and I are examining timber species planted in some villages. We are trying to improve their value by identifying their best possible use since they are not as strong or durable as trees grown naturally in the forest. I am also planting trees in villages to help raise the villager's incomes and to keep the environment green.

Certificate Presentation Ceremony held for the HU Scholarships

A ceremony was held on October 22 for two events awarding scholarships to international students; the President's Fellowship and the Special Grant Program for International Students. Both of these scholarships are aimed at privately funded foreign students with outstanding academic performance and a deep interest in the university's education and research programs.

Advisory professors and others involved with the scholarships presided at the ceremony and Vice President Hondoh presented scholarship certificates to 10 students. In his address following the presentation, he encouraged students to emulate Nobel Prize winner Emeritus Prof. Akira Suzuki in his work method.

The detailed information about the scholarships, please refer to the website linked below.

http://www.isc.hokudai.ac.jp/www_ISC/index-e.cgi



Vice President Hondoh presents scholarship certificates

International Students' Voices

Lin Hengli (from Taiwan), Graduate School of International Media, Communication, and Tourism Studies, PhD 2nd year

In April 2007, I enrolled in HU as a master's course student in the Graduate School of International Media, Communication, and Tourism (IMCTS). Currently I am continuing my study and research in a PhD course at IMCTS. My major is language communication, Japanese language teaching, and Japanese linguistics.

Before coming to Japan, I faced a big problem that many students face, — choosing a university. There are many universities in Japan, and every university has its own characteristics. When I was agonizing and worrying about this, my professor at my home university told me: "HU is a very good university. Not only can you study but you can also enjoy the natural environment there." By chance, I got to know a professor in the International Student Center (ISC) of HU, and it was then that I decided to think no more about other universities on the main island of

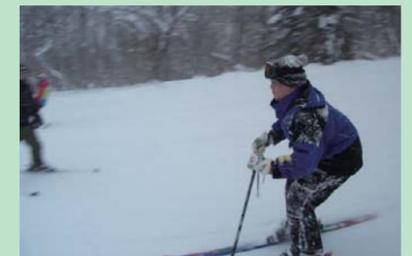
Japan, but to just think about HU.

I still remember that the first time I came to Sapporo it was snowing. The Japanese phrase "Yuki ga hutte-iru." became my "experience", not just "knowledge" anymore. I grew up in a southern island, and I knew that it would not be easy to adapt to life here. A Japanese friend told me, "Believe in the adaptability of human beings!" and this phrase helped me. Another friend told me, "Although the winter period is long it allows you to stay indoors and study more". In addition to my studies, I volunteer as a teacher of Japanese to non-native children. In my free time I try to get to know new friends, contact old ones, and take a walk when it is sunny.

After I complete my PhD, I want to continue my research in grammatical phenomenon in modern Japanese — are there similarities or differences between Japanese and other languages? How do

Japanese learners or Chinese learners communicate in their second languages? There is not only one answer, so this will be a lifelong research theme.

Finally, I would like to say that life is short and the opportunity to study abroad usually comes around only once in a life time. Since your time is valuable, I encourage you to think about what you can do right now, and what you can do in the future. Your experiences in Hokkaido will be your lifelong treasure.



First time skiing in Sapporo Kokusai Skiing Resort

Mai Abo El-fadle (from Egypt), Graduate School of Letters, MA 1st year



Hiking at Soranumadake Mountain, Sapporo

Hello everyone, my research themes are social problems in Japan, like low birth rates and the nuclear family and its effect on children's behaviour. I graduated from the department of Japanese language and literature at Cairo University.

I enrolled in HU as a research student in April 2009, and then as a master student in April 2010. This is not my first time in Japan or Hokkaido. The first time I came to Sapporo was in September 2005 to participate in an international student exchange programme of the Hokkaido University of Education.

My first visit to HU was that same year when I went to the university festival. I saw how big and beautiful the HU campus was and I was determined to do my master's there. Studying in Japan was my first experience living outside of Egypt, and I was quite worried and anxious because I was just 18 years old, but the second time, I was much more confident and anxious for the new experiences that I would have at HU. One of the experiences that I have had is the opportunity to interact with not only Japanese people but also many people from other countries which has helped me to improve my Japanese and English at the same time.

One of the big obstacles in coming to Sapporo for people from very warm countries is the very cold winter. Strangely enough, I did not have any problems and I was able to deal with the snow from my first experience with it. Since I have been at HU, I have had many chances to introduce my culture and my country, and I have become

acquainted with many kinds of winter sports and other activities that I could have never experienced in my country like snow boarding, skiing, rafting, and hiking. I have had the opportunity to visit other places in Japan like Tokyo, Osaka, Kyoto, and Nara. Each of these places has its own special atmosphere — from the very active and fast paced Tokyo to the historical spiritual Kyoto — and highlights the great variety of expression of Japan.

Studying at HU, I was quite unfamiliar with the Japanese system of seminars because we do not have such a system at my university back home. However, I find that having discussions in class is competitive and motivates me to study more especially because I take classes given in Japanese with Japanese and Chinese students. Finally, I am grateful to HU for most of the new wonderful experiences I have had during these past few years of my life. I can say that I am absolutely in love with HU and life in Hokkaido.



A Delegate from HU attended World Student Environmental Summit 2010

My name is Sebastian Charchalac, I am a student of Environmental Engineering in the English Engineering Education (e³) program of the Graduate School of Engineering and also a student in the HUIGS program at the Center for Sustainability Science. I took part in the World Student Environmental Summit (WSES) as one of two delegates from HU. The other delegate, a Japanese student, Ms. Aoi, and I attended the Summit from September 20 to 26 in Tübingen, Germany.

As delegates from HU, we met with 63 other students from 25 countries for 6 days to discuss sustainability issues and the role of young people in environmental activism. We participated in lectures and heard speeches from experts in the key fields of economics, science, politics, and civil society. The workshops and discussions resulted in an Outcomes Report and a proposal that was relayed to the COP 16 committee by Doshisha University's president. Each team of delegates was encouraged to make a sustainability proposal to

their own university too. The event was organized to be eco-friendly and we were isolated and so felt free to discuss world issues that concern our generation. There was a contest to show the best projects on sustainability by different each University, and in our presentation on Sustainability Weeks we had the chance to introduce the ideas, philosophy and initiatives of HU.

Personally, I found it really interesting to meet young leaders from different parts of the world that are also aware of the importance of student involvement and incorporating sustainability as a way of life and not a just as a study subject. I was supported fully by HU and I am very satisfied and happy to see that HU supports foreign students' participation in such events. It is remarkable how important studies on Sustainability are for HU. Through activities such as Sustainability Weeks and many other initiatives, HU is doubtlessly one of the leading educational centers in this field. I am not only thankful for the support I received, but I am also proud of the role

HU in seeks for a better world.

I hope that HU students will also take part in the WSES 2011, which will be held in May 16 to 20 in Sweden (Blekinge Institute of Technology).

*Written by Sebastian Ignacio Charchalac Ochoa/
Master's Course 2nd Year,
Graduate School of Engineering*



Poster Presentation

2010 HU Summer Session Program held

The 2010 HU Summer Session Program was held over a four-week period from June 21 to July 16, 2010. This program has been held every other year since 1978 as part of an effort to promote student exchanges between HU and its partner institutions in the US and Canada. This year was the seventeenth time for the program and twenty-five students and three directors from the University of Massachusetts, Portland State University, and the University of Alaska Fairbanks participated.

During the program, participants attended Japanese language lessons, and English lectures on subjects ranging from Japanese economics, politics, language, education, to science and technology. There were also opportunities for learning first-hand about aspects of Japanese culture with lessons in flower arranging, ink painting, traditional bon dancing, and buckwheat noodle making. Participants also went on a campus tour, a city tour (Mt. Okura and Hokkaido Shrine), visited a local elementary school, went on an excursion to Otaru and Noboribetsu Date Jidaimura (a history theme park focusing on Japan's Edo Period), and attended a student exchange program hosted by the Sharing All Cultures and Languages Association (SACLA) international exchange club.

The program ended with a completion ceremony and farewell party on July 16. Research Faculty of Agriculture Associate

Prof. Tatsuhiro Ezawa presented completion certificates to all the participants, and representatives of the participating universities delivered speeches in English and in Japanese on their memories of their experiences in Hokkaido. Three students that showed particular mastery of their Japanese lessons demonstrated their progress and were favorably received by all the participants — the host families with whom the students had spent four weeks, HU students who befriended them, and other people involved with the program — and the party progressed in a friendly atmosphere as pleasant memories were revisited from the program participant's stay.



Experience of a terakoya private elementary school at Noboribetsu Date Jidaimura

Update on the activities by Office of International Affairs: Peer-Consultation Meeting on ESD with Overseas Universities



Peer-consultation meeting at HU

HU organized the peer-consultation meeting under a theme of "Campus Sustainability Initiatives" on November 5 on the Sapporo campus. Experts from UNU-IAS (United Nations University Institute for Advanced Studies), UNU-IIST (United Nations University International Institute for Software Technology) and 4 leading universities on Education for Sustainable Development (ESD) in the Asia-Pacific region acted as consultants. In order to realize a sustainable society, HU is committed to act as a role model for sustainability by interacting with stakeholders through education and research as well as by inspiring society through the community engagement. The initiative includes the development of environmentally conscious campus and the promotion of the concept of "sustainability" on and off campus to involve as many stakeholders as possible in its engagement.

In addition to Prof. Minoru Wakita, the Executive and Vice President for Education and Prof. Takeo Hondoh, the Executive and Vice President for International Affairs/Facilities, HU representatives from the Office of Sustainable Campus, the Creative Research Institution, the Center for Sustainability Science, the Graduate School of Environmental Science's Facilities Division, and the Office of International Affairs participated as clients.

The session started with a brief presentation from HU on its campus sustainability activities based on the previously compiled report, and was followed by comments in the areas of: governance, education, research and outreach from the representatives of the consulting universities. HU will receive a report from the consultants based on their findings at a later date.

The peer-consultation meeting was held as part of an initiative by the Alternative University Appraisal (AUA) Project, a joint project of ProSPER.Net (Promotion of Sustainability in Postgraduate Education and Research), an Asia-Pacific academic alliance that is conducted under the auspices of UNU-IAS. As Secretariat of the AUA project, the Office of International Affairs is actively committed to its development.

This project aims to create a learning community as a viable alternative to existing university ranking systems, in order to further promote ESD at universities.

The AUA project will continue to organize opportunities for peer-consultation to create a basis for a learning community.

For details, please visit the following website.

<http://www.sustain.hokudai.ac.jp/aua/>

Japanese Language Pedagogical Workshop

The Japanese Language Pedagogical Workshop was held at the International Student Center (ISC) from July 19 to 23.

The workshop, which began in 2008, has become an annual event and was initiated with the aim of improving Japanese language education at HU's partner institutions and to promote exchange between the instructors. This year, 10 instructors from China, South Korea, France, and Estonia attended.

The opening ceremony began with introductions, and ISC Director Takahiko Nitta delivered a welcome speech which touched on the importance of Japanese language education abroad and HU's exchanges with partner institutions. The workshop afforded the ISC instructors and their overseas counterparts many opportunities to exchange information and opinions through lectures and extracurricular events. Campus and city tours allowed the overseas participants a chance to observe campus facilities and the living environment of international students as well as other aspects of life at HU.

The event was brought to a successful close by a summation of the workshop by Prof. Yoshitaka Yamashita (a coordinator of the event) and the presentation of completion



Group photo

certificates to all attendees. The participants expressed their hope to build on their achievements from the course and build on their relationships forged during their time at HU.