Graduate School Website for Prospective International Students Opens

A one-stop website called the Hokkaido University Graduate School Information for Prospective International Students has been created to help international students interested in attending Hokkaido University graduate schools to easily obtain the information they need.

A wide range of guidance is available on the site. Information on admissions procedures, entrance examinations, and courses taught in English are available as well as financial data on tuition fees, living expenses, and scholarships. Also provided are resources to help students get a feel of campus life at Hokkaido University. This includes seasonal campus photos and first-hand reports from graduates and current students. An inquiry form on the site also allows prospective students to ask specific questions to the graduate schools they are interested in.

Please come visit the website and check out the useful information!

URL: http://grad.isc.hokudai.ac.jp/cgi-bin/index-e.pl

Your candid views and impressions are welcome as we strive toward continuous improvement to the content. Please contact us in the event that you have changed your e-mail address or wish to unsubscribe.

International Affairs Division, Hokkaido University
TEL +81-(0)11-706-2334
FAX +81-(0)11-706-2095
Email: news@general.hokudai.ac.jp

Please visit our website for recent news: http://www.hokudai.ac.jp/en/
You can also find the previous edition at http://www.hokudai.ac.jp/en/pickup/publicrelations.html
**Anticipating Sustainability Weeks 2009**

I am delighted to announce that the university will host the Sustainability Weeks 2009. This is a promotional week of research and education to help create a sustainable society. For approximately two weeks from November 1, a series of intensive programs, such as international symposia, lectures for citizens, and exhibitions will be held to present the results of the research and education we have implemented to date. This campaign will give us insight into the direction we are heading and the implications of our actions. The invited lecturers from abroad are at the forefront of their fields and are expected to contribute to the program by stimulating discussions that will explore solutions with students, young and veteran researchers as well as the citizens of Sapporo.

The last Sustainability Weeks 2008 coincided with the G8 Summit. During this period, we proudly hosted the G8 University Summit – the first-ever gathering of presidents of major universities in G8 and other nations – which contributed greatly to the adoption of the Sapporo Sustainability Declaration (SSD). The SSD embodied the pledge of 20 overseas universities, 1 UN organization, and 14 Japanese universities to serve as a positive force toward the creation of a sustainable society. The formation of SSD was a means to an end, but a springboard to present solutions based on scientific knowledge at an accelerated pace. Taking this into account, Sustainability Weeks 2009 has evolved into a program that will project our commitment to a sustainable future.

This year marks the third Sustainability Weeks and will focus on the reinforcement of our network with overseas partner institutions and the expansion of student participation. We will welcome researchers from our overseas partner institutions and enable them to present the latest results of their research activities and to engage in discussions. We believe the Weeks will present a valuable opportunity for students to broaden their awareness that they are the recipients of the future, and this will stir them to take a step forward toward the creation of a sustainable society.

As a university that places emphasis on the practical application of research, we are committed to fostering through the platform of Sustainability Weeks 2009, people that are armed with expertise and possessing a vision of the picture that will contribute to the world.

*For more information, please visit: http://www.sustain.hokudai.ac.jp/sw/2009/*  
(as of July 14, 2009)

**Hokkaido University Newsletter**

---

**Hokkaido University – Nagoya University Joint University Days held in Nanjing and Beijing**

Hokkaido University (HU) and Nagoya University (NU) held two Joint University Days in China with the aims of promoting partnerships in research and education between Japan and China, and fostering outstanding individuals with a global perspective and a spirit of innovation. The first event was held jointly with Nanjing University on March 6. The second was held at Tsinghua University in Beijing on March 8.

The purpose of the events was to provide opportunities to come in contact with Japanese and Chinese culture through direct interaction between Japanese faculty members and Chinese students. From Japan, approximately 70 faculty members and students from undergraduate and graduate schools participated, including the presidents of both HU and NU and the vice-presidents in charge of international affairs. When HU President Saeki described Hokkaido’s grand natural environment and HU’s beautiful campus, during a speech, attentiveness peaked due to the widespread popularity of a current Chinese movie that is based in Hokkaido.

Students and university personnel from both countries participated in events and talk sessions by the presidents and alumni of both universities as well as lectures by faculty members. In addition, study-abroad counseling was provided at each event, and the booths of Global COE Programs and graduate schools were filled with students enthusiastically asking questions to faculty members from both universities.

At the Tsinghua University venue, HU’s Minken Wadachi student club performed a folk dance which was a fascinating spectacle to those witnessing it for the first time. After the performance, Minken Wadachi students and Chinese students talked about their cultures and lifestyles.

The total number of participants in both events was about 500. HU will continue to step up its PR efforts abroad to attract increasing numbers of outstanding overseas students and promote international exchanges.

---

<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 4 - Oct. 7</td>
<td>2009 Asia Pacific Signal and Information Processing Association Annual Summit and Conference (APSPAC-2009)</td>
</tr>
<tr>
<td>Nov. 4 - Nov. 5</td>
<td>Graduate Symposium of the G8 Summit: The G8 Debates Competition, School of Economics and Business Administration</td>
</tr>
<tr>
<td>Oct. 30 - Nov. 1</td>
<td>CIAIR THEATER 2009</td>
</tr>
<tr>
<td>Nov. 1</td>
<td>Seminar on Climate Change Policy</td>
</tr>
<tr>
<td>Nov. 2</td>
<td>Sustainability Weeks 2008 Opening Symposium</td>
</tr>
<tr>
<td>Nov. 3</td>
<td>Huashan University-Hokkaido University Joint Symposium – “Sustainable Development – Recommendation for Tackling the Challenges of Global Sustainability.”</td>
</tr>
<tr>
<td>Nov. 4 - Nov. 14</td>
<td>Joint University Days in China with the aims of promoting partnerships in research and education between Japan and China</td>
</tr>
<tr>
<td>Nov. 15</td>
<td>Int’l Symposium on Environmental Economics: The Role of Universities in Sustaining the Environment</td>
</tr>
<tr>
<td>Nov. 16 - Nov. 17</td>
<td>Joint Japanese-Korean Seminar on Northern Environmental Research</td>
</tr>
<tr>
<td>Nov. 18</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
<tr>
<td>Nov. 19</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
<tr>
<td>Nov. 20</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
<tr>
<td>Nov. 21</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
<tr>
<td>Nov. 22</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
<tr>
<td>Nov. 23</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
<tr>
<td>Nov. 24</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
<tr>
<td>Nov. 25</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
<tr>
<td>Nov. 26</td>
<td>Joint Japan-China Seminar on “Sustainable Development of Society and the Mission of Education”</td>
</tr>
</tbody>
</table>

**S: Symposium  M: Museum Exhibit  P: Public Lecture  O: Other Event**
Anticipating Sustainability Weeks 2009

I am delighted to announce that the university will host the Sustainability Weeks 2009. This is a promotional week of research and education to help create a sustainable society. For approximately two weeks from November 1, a series of intensive programs, such as international symposia, lectures for citizens, and exhibitions will be held to present the results of the research and education we have implemented to date. This campaign will give us insight into the direction that we are heading and the implications of our actions. The invited lecturers from abroad are at the forefront of their field and are expected to contribute to the program by stimulating discussions that will explore solutions with students, young and veteran researchers as well as citizens of Sapporo.

The last Sustainability Weeks 2008 coincided with the G8 Summit. During this period, we proudly hosted the G8 University Summit – the first-ever gathering of presidents of major universities in G8 and other nations – which contributed greatly to the adoption of the Sapporo Sustainability Declaration (SSD). The SSD embodied the pledge of 20 overseas universities, 1 UN organization, and 14 Japanese universities to serve as a positive force toward the creation of a sustainable society. The formation of SSD was not a means to an end, but a springboard to present solutions based on scientific knowledge at an accelerated pace. Taking this into account, Sustainability Weeks 2009 has evolved into a program that will project our commitment to a sustainable future.

This year marks the third Sustainability Weeks and will focus on the reinforcement of our network with overseas partner institutions and the expansion of student participation. We will welcome researchers from our overseas partners and enable them to present the latest results of their research activities and to engage in discussions. We believe the Weeks will present a valuable opportunity for students to broaden their awareness that they are the recipients of the future, and this will stir them to take a step forward toward the creation of a sustainable society.

As a university that places emphasis on the practical application of research, we are committed to fostering through the platform of Sustainability Weeks 2009, people that are armed with expertise and possessing a vision of the picture that will contribute to the world.

* For more information, please visit: http://www.sustain.hokudai.ac.jp/sw2009/ (as of July 14, 2009)

---

Hokkaido University – Nagoya University Joint University Days held in Nanjing and Beijing

Hokkaido University (HU) and Nagoya University (NU) held two Joint University Days in China with the aims of promoting partnerships in research and education between Japan and China, and fostering outstanding individuals with a global perspective and a spirit of innovation. The first event was held jointly with Nanjing University on March 6. The second was held at Tsinghua University in Beijing on March 8.

The purpose of the events was to provide students in China with information on current academic research programs at Japanese universities as well as the histories and present situations of HU and NU. A further objective was to provide opportunities to come in contact with Japanese and Chinese culture through direct interaction between Japanese faculty members and Chinese students.

From Japan, approximately 70 faculty members and students from undergraduate and graduate schools participated, including the presidents of both HU and NU and the vice-presidents in charge of international affairs. When HU President Saeki described Hokkaido’s grand natural environment and HU’s beautiful campus, during a speech, attentiveness peaked due to the widespread popularity of a current Chinese movie that is based in Hokkaido.

Students and university personnel from both countries participated in events and talk sessions by the presidents and alumni of both universities as well as lectures by faculty members. In addition, study-abroad counseling was provided at each event, and the booths of Global COE Programs and graduate schools were filled with students enthusiastically asking questions to faculty members from both universities.

At the Tsinghua University venue, HU’s Minken Wadachi student club performed a folk dance which was a fascinating spectacle to those witnessing it for the first time. After the performance, Minken Wadachi students and Chinese students talked about their cultures and lifestyles.

The total number of participants in both events was about 500. HU will continue to step up its PR efforts abroad to attract increasing numbers of outstanding overseas students and promote international exchanges.
Hokkaido University – Mahidol University Joint Symposium

The Creative Research Institution Sousei and the Faculty of Advanced Life Science welcomed 10 young researchers from Mahidol University in Thailand for a short-term study program from March to May 2009 with the support of the Japan Society for the Promotion of Science (JSPS) Exchange Program for East Asian Young Researchers – Invitation from EAS Member Countries. As part of this program, the Hokkaido University – Mahidol University Joint Symposium was held at the Sousei Building from May 12 to 13 under the initiative of Specially Appointed Assistant Professor Yoshikazu Tanaka.

The symposium focused on the presentation of research results by graduate students and young researchers from Japan and abroad, and they had the opportunity to discuss the latest trends in life science studies.

Three guests delivered lectures in the Plenary Lecture session held on the morning of May 12. Dr. Marc-Michael Blum (Blum-Scientific, Germany) spoke about his research in the mechanisms of enzymatic reactions at the atomic level based on crystal structure analysis using neutron rays and X-rays; Dr. Koki Makabe (Okazaki Institute for Integrative Bioscience, Japan) lectured about his studies involving clarification of the mechanism behind beta-sheet formation in proteins using a protein-engineering approach; and Dr. Sarin Chimnaronk (Mahidol University, Thailand) expounded on his research that clarified the reaction mechanism of various RNA modifying enzymes.

During the Students' Presentation session in the afternoon, eight graduate students from both universities made oral presentations and vigorous discussions on a wide range of topics in biological science research such as protein science, computational science, and biomaterial chemistry ensued. A total of 43 young researchers from the two institutions also made poster presentations, which was followed by a spirited exchange of opinions concerning ongoing research programs.

The Young Researchers' Presentation session on May 13 featured seven young Japanese researchers reporting on their research. Among them was Dr. Koichi Matsuo (Hiroshima University), who talked about applications and prospects for synchrotron radiation circular dichroism spectroscopy, and Dr. Ryutaro Asano (Tohoku University), who outlined research trends toward the medical application of antibody molecules. Through their lectures participants were able to expand their knowledge in a wide range of areas encompassing technological development, molecular analysis, and medical application.

The symposium came to a successful end and proved to be very valuable not just as a place for sharing the latest research results but also as a forum for exchanging opinions and allowing interaction among young researchers to take place. Exchanges between the two universities and the network of related researchers are expected to further thrive in the future.

Core University Program's Japan – Korea Joint Seminar on Fisheries Sciences held in Hakodate

The Faculty of Fisheries Sciences hosted the Core University Program's Japan – Korea Joint Seminar on Fisheries Sciences at the Hakodate-Onuma Prince Hotel on December 18 and 19, 2008. Twenty-eight people from South Korea and forty-two people from Japan.

The seminar is held as part of the Bilateral Cooperative Research Program within the Japan Society for the Promotion of Science's Core University Program. Hokkaido University (HU) serves as the core university in Japan, and our Korean counterpart is Pukyong National University – HU's partner institution based on an Inter-university Exchange Agreement. The two institutions hold the seminar every year on a reciprocal basis.

This year marks the eighth anniversary of this ten-year program’s initiation. The exchanges have continued with approximately 100 researchers taking part in collaborative research programs and seminars every year. Participants include not only university faculty members and researchers, but also graduate students, who are expected to play important roles in this field in the future.

Based on reports of research results by eight joint research groups encompassing four fields (the environment, fisheries, food use and propagation, fish breeding), this seminar featured enthusiastic discussions on the theme of the fusion of joint research activities to strengthen partnerships and collaboration among those engaging in joint research activities with the ultimate goal of achieving the program’s objectives. On the morning of the first day, each joint research group summed up its research results, and during a plenary session in the afternoon, the representatives of joint research activities between Japan and Korea presented the outcomes of their work over the past three years. On the second day, the participants were divided into four subcommittees, in which they summed up their joint research activities to date and discussed research plans for the following year and thereafter. The seminar was concluded with another plenary session characterized by enthusiastic discussions on how joint research activities should be used to help realize zero-emission fisheries, which is the theme of the program.

Despite the tight conference schedule, the two days provided an invaluable experience for the participants in terms of promoting cross-cultural understanding, learning about the current situation regarding fisheries and oceanography and considering future directions of research. The level of interaction among young researchers – the leaders of the next generation – is also expected to be enhanced in the form of initiatives such as short-term exchange programs for graduate students.
Hokkaido University – Mahidol University Joint Symposium

The Creative Research Institution Sousei and the Faculty of Advanced Life Science welcomed 10 young researchers from Mahidol University in Thailand for a short-term study program from March to May 2009 with the support of the Japan Society for the Promotion of Science (JSPS) Exchange Program for East Asian Young Researchers – Invitation from EAS Member Countries. As part of this program, the Hokkaido University – Mahidol University Joint Symposium was held at the Sousei Building from May 12 to 13 under the initiative of Specially Appointed Assistant Professor Yoshikazu Tanaka.

The symposium focused on the presentation of research results by graduate students and young researchers from Japan and abroad, and they had the opportunity to discuss the latest trends in life science studies. Three guest delivered lectures in the Plenary Lecture session held on the morning of May 12. Dr. Marc-Michael Blum (Blum-Scientific, Germany) spoke about his research in the mechanisms of enzymatic reactions at the atomic level based on crystal structure analysis using neutron rays and X-rays; Dr. Koki Makabe (Okazaki Institute for Integrative Bioscience, Japan) lectured about his studies involving clarification of the mechanism behind beta-sheet formation in proteins using a protein-engineering approach; and Dr. Sarin Chimnaronk (Mahidol University, Thailand) expounded on his research that clarified the reaction mechanism of various RNA modifying enzymes.

During the Students’ Presentation session in the afternoon, eight graduate students from both universities made oral presentations and vigorous discussions on a wide range of topics in biological science research such as protein science, computational science, and biomaterial chemistry ensued. A total of 43 young researchers from the two institutions also made poster presentations, which was followed by a spirited exchange of opinions concerning ongoing research programs.

The Young Researchers’ Presentation session on May 13 featured seven young Japanese researchers reporting on their research. Among them was Dr. Koichi Matsuo (Hiroshima University), who talked about applications and prospects for synchrotron radiation circular dichroism spectroscopy, and Dr. Ryutaro Asano (Tohoku University), who outlined research trends toward the medical application of antibody molecules. Through their lectures participants were able to expand their knowledge in a wide range of areas encompassing technological development, molecular analysis, and medical application.

The symposium came to a successful end and proved to be very valuable not just as a place for sharing the latest research results but also as a forum for exchanging opinions and allowing interaction among young researchers to take place. Exchanges between the two universities and the network of related researchers are expected to further thrive in the future.

Core University Program’s Japan – Korea Joint Seminar on Fisheries Sciences held in Hakodate

The Faculty of Fisheries Sciences hosted the Core University Program’s Japan – Korea Joint Seminar on Fisheries Sciences at the Hakodate-Onuma Prince Hotel on December 18 and 19, 2008. Twenty-eight people from South Korea and forty-two people from Japan.

The seminar is held as part of the Bilateral Cooperative Research Program within the Japan Society for the Promotion of Science’s Core University Program. Hokkaido University (HU) serves as the core university in Japan, and our Korean counterpart is Pukyong National University – HU’s partner institution based on an Inter-university Exchange Agreement. The two institutions hold the seminar every year on a reciprocal basis.

This year marks the eighth anniversary of this ten-year program’s initiation. The exchanges have continued with approximately 100 researchers taking part in collaborative research programs and seminars every year. Participants include not only university faculty members and researchers, but also graduate students, who are expected to play important roles in this field in the future.

Based on reports of research results by eight joint research groups encompassing four fields (the environment, fisheries, food use and propagation, fish breeding), this seminar featured enthusiastic discussions on the theme of the fusion of joint research activities to strengthen partnerships and collaboration among those engaging in joint research activities with the ultimate goal of achieving the program’s objectives. On the morning of the first day, each joint research group summed up its research results, and during a plenary session in the afternoon, the representatives of joint research activities between Japan and Korea presented the outcomes of their work over the past three years. On the second day, the participants were divided into four subcommittees, in which they summed up their joint research activities to date and discussed research plans for the following year and thereafter. The seminar was concluded with another plenary session characterized by enthusiastic discussions on how joint research activities should be used to help realize zero-emission fisheries, which is the theme of the program.

Despite the tight conference schedule, the two days provided an invaluable experience for the participants in terms of promoting cross-cultural understanding, learning about the current situation regarding fisheries and oceanography and considering future directions of research. The level of interaction among young researchers – the leaders of the next generation – is also expected to be enhanced in the form of initiatives such as short-term exchange programs for graduate students.
This project was adopted as a Global COE Program in FY 2008 based on the outcomes achieved through its predecessor, the Prediction and Avoidance of an Abrupt Change in the Bio-geosphere System 21st Century COE program, and is being executed by all divisions in the Graduate School of Environmental Science and the Division of Environmental Resources at the Graduate School of Agriculture. The previous program demonstrated the existence of regions that show vulnerability to the influence of human activity (such as global warming), and aimed to monitor changes in the natural environment through field observation over a 100-year time period to elucidate the mechanism behind such changes through modeling. Specific regions covered by the program include Mongolia, where grassland degradation and desertification have progressed due to reduced precipitation and overgrazing, and Indonesia, a country that is becoming prone to tropical peatland fires due to drying caused by a reduction in the groundwater level and unchecked development.

These problems are not caused solely by worldwide environmental changes such as global warming; they are also intricately linked to environmental changes stemming from local human activity that accompanies economic development. Against such a backdrop, this program aims to produce leaders that can tackle the various environmental problems facing humanity on a multiple of fronts by utilizing science, government, education, and corporate activities to establish a system for long-term field observation.

Interdisciplinary research will be carried out by making the best of expertise accumulated through Hokkaido University’s past observations in research covering a wide range of fields in both the ecological and earth sciences, as well as knowledge gathered in the development of atmospheric, oceanic, and land models. In addition, efforts to elucidate the impact of humanity’s social activities will be strengthened through a partnership with the National Institute for Environmental Studies – a world-leading organization in the development of models with social-scientific dimensions.

This program aims to foster individuals that will become the heirs of developing the next generation of Earth System Science. Integrated field environmental science begins with the effort of carefully analyzing data obtained through field observations and by extracting and elucidating important processes unique to the respective regions. Understanding these findings and formulating theories based on models that encompass sociological viewpoints will help clarify behavior of the Earth System and lay the foundations for solutions and countermeasures.

The details of this research are available in the April 6, 2009 e-version of the science journal, Nature Methods.
### COE Program Series 11

**Establishment of the Center for Integrated Field Environmental Science**

This project was adopted as a Global COE Program in FY 2008 based on the outcomes achieved through its predecessor, the Prediction and Avoidance of an Abrupt Change in the Bio-geosphere System 21st Century COE program, and is being executed by all divisions in the Graduate School of Environmental Science and the Division of Environmental Resources at the Graduate School of Agriculture. The previous program demonstrated the existence of regions that show vulnerability to the influence of human activity (such as global warming), and aimed to monitor changes in the natural environment through field observation over a 100-year time period to elucidate the mechanism behind such changes through modeling. Specific regions covered by the program include Mongolia, where grassland degradation and desertification have progressed due to reduced precipitation and overgrazing, and Indonesia, a country that is becoming prone to tropical peatland fires due to drying caused by a reduction in the groundwater level and unchecked development.

These problems are not caused solely by worldwide environmental changes such as global warming; they are also intricately linked to environmental changes stemming from local human activity that accompanies economic development. Against such a backdrop, this program aims to produce leaders that can tackle the various environmental problems facing humanity on a multitude of fronts by utilizing science, government, education, and corporate activities to establish a system for long-term field observation.

Interdisciplinary research will be carried out by making the best of expertise accumulated through Hokkaido University’s past observations in research covering a wide range of fields in both the ecological and earth sciences, as well as know-how gathered in the development of atmospheric, oceanic, and land models. In addition, efforts to elucidate the impact of humanity’s social activities will be strengthened through a partnership with the National Institute for Environmental Studies – a world-leading organization in the development of models with social-scientific dimensions.

This program aims to foster individuals that will become the heirs of developing the next generation of Earth System sciences. To this end, in addition to the investigative activities at research centers to be established overseas, students will be recruited locally by offering the preparatory Admissions Office entrance examination, and Hokkaido University’s past observations in research covering a wide range of fields in both the ecological and earth sciences, as well as know-how gathered in the development of atmospheric, oceanic, and land models. In addition, efforts to elucidate the impact of humanity’s social activities will be strengthened through a partnership with the National Institute for Environmental Studies – a world-leading organization in the development of models with social-scientific dimensions.

### Successful development of an ultramarine fluorescent protein (Sirius) with the world’s shortest emission wavelength

Professor Takeharu Naga’s research group in the Laboratory for Nanosystems Physiology at Hokkaido University’s Research Institute for Electronic Science has developed a fluorescent protein that emits the shortest-wavelength of fluorescence known in the realm of these proteins.

The protein named *Sirius* (a protein that fluoresces ultramarine – an intermediate color between purple and blue) was developed by replacing amino acids that form the chromophore of fluorescent proteins and amino acids involved in the emission of fluorescence. This development has exceeded prior short emission wavelengths for fluorescent proteins for the first time in 15 years.

Unlike conventional fluorescent proteins, *Sirius* fluoresces stably in all pH conditions – a characteristic that enables the previously difficult observation of protein movement in acidic environments. Because of this characteristic, the substance is expected to be used initially for histological observation in acidic environments such as the stomach, and for monitoring cancer cells in living bodies.

The details of this research are available in the April 6, 2009 e-version of the science journal, *Nature Methods*.

### The development of one of the world’s largest optical quantum circuits, representing a step toward the realization of quantum computers

A group led by Professor Shigeki Takeuchi of Hokkaido University’s Research Institute for Electronic Science (also serving as an invited professor at Osaka University’s Institute of Scientific and Industrial Research) developed one of the world’s largest photon-based optical quantum circuits. Photons (elementary particles of light) are considered important as an information conveyance medium for quantum computers and quantum communication. As one of the functional optical quantum circuits, the group proposed an entanglement filter that extracts only pairs of photons that exist in a state of specific quantum entanglement. However, the circuit was so complicated that realization was very difficult.

The research group finally produced an entanglement filter that allows for the extraction of pairs of photons in cases when they are in a specific state by devising an optical interference device with unique, partially polarizing beam splitters. The optical quantum circuit is one of the world’s largest in terms of both the number of quantum gates and classical interferences. This achievement indicates the potential for the development of various optical quantum circuits, and is expected to lead to highly significant developments in quantum computers and long-distance quantum cryptography.

The results of this research were published in the journal, *Science*, on January 23, 2009.

*An entanglement filter makes it possible to extract only pairs of photons in a state of specific quantum entanglement.*

*The nucleus of a human cell (the blue portion in the middle) colored using *Sirius***

*Field observation in Yakutsk, Siberia*
HU Alumni’s Today – Dr. López Zavala Miguel Ángel

Dr. López Miguel, a professor at the Water Center for Latin America and the Caribbean (part of the Monterrey Institute of Technology and Higher Education (ITESM) in Mexico), came to Hokkaido University (HU) in 1998 supported by a Ministry of Education Scholarship. Before beginning his studies at HU he served as the head of the Irrigation Units Department at the Mexican Ministry of Agriculture. In his country, despite the availability of sewage lines, and due to a lack of wastewater treatment facilities, only 38.3% of municipal wastewater is treated, the rest is discharged directly into rivers, streams and other water bodies. This condition is what prompted him to study urban and environmental engineering in Japan – a nation with advanced environmental research and cultural aspects that interested him.

While working on his master’s degree, he experienced a turning point in his research. He conceived a simple but ingenious method of managing wastewater by discharging and treating household wastewater from kitchens, bathrooms, and toilets separately instead of discharging them together as is the common practice. His research was supported by the Japan Science and Technology Agency and expanded globally through the cooperative involvement of Japanese universities as well as institutions from Indonesia, China and the Philippines. Accordingly, he established an extensive network of personal connections and his project produced more than 100 dissertations which gave him authority as a researcher.

A very significant event took place when he was a doctoral candidate – the birth of his daughter. Although he was concerned about his wife giving birth abroad because of the language barrier and cultural differences, the doctor in charge and the hospital staff were very kind and were able to allay his concerns. He named his daughter Midori (midori in Japanese is associated with life, so he used this Japanese word to name his child. The relationships that he formed in Sapporo still exist, and he maintains a close friendship with the members of a Japanese family who volunteered to teach his wife Japanese, and played with his daughter. He feels that the warmth and kindness of the people is part of what made living in Hokkaido so attractive.

After returning home in 2005, he was inaugurated as a professor at ITESM, and he currently teaches environmental engineering and hydraulics to approximately 100 undergraduates and students in the master’s degree program. He is also involved in a wide range of activities in various capacities, including a role as an evaluator at the National Council of Science Technology and as a referee for scientific journals. He has also obtained domestic and international patents on a bio-toilet system that formed part of his studies.

His ambition as a researcher is to develop an inexpensive, sustainable wastewater treatment method to tackle the costly existing techniques that make it difficult to improve sewerage coverage rates. He also hopes to consolidate students and faculty exchange programs between HU’s Graduate School of Engineering and ITESM and to polish his students with a period of study at HU, where he believes high quality research is conducted by professors who offer excellent academic opportunities for ambitious foreign students. It may be that in the near future researchers who carry on Dr. López Miguel’s dream will be nurtured at HU.

2008 welcome and farewell party held for international students

A party was held to welcome international students admitted to Hokkaido University from April 2008 and to celebrate those who completed their studies or research programs in March 2009 before returning to their home countries. The get-together, hosted by the university president, took place at the Keio Plaza Hotel Sapporo on February 13.

The event was attended by 420 people – far more than an average year – including international students, representatives of foreign diplomatic missions in Sapporo and organizations providing support for international students, university deans, supervisory instructors, and members of international student-related committees.

The party began with an address by President Hiroshi Saeki, followed by a speech on behalf of the guests by Consul General Donna Welton from the U.S. Consulate General in Sapporo.

Next, representing those who were admitted to the university, Chapuis Hugo Jean from France (a participant in the Hokkaido University Short Term Exchange Programme (HUSTEP)), shared his impressions after arriving in Sapporo. Shocked by the cultural differences he encountered, he was initially concerned as to whether he would ever get used to living in Japan. However, he was able to readily make friends with other international students from various countries as well as Japanese students, and is now having a great time.

Next, Akhil Ranjan Baruah from India (in the latter period of doctoral degree program at the Graduate School of Agriculture) shared his experiences on behalf of those who were returning to their home countries. He told how he was confused by a number of things during the first phases of living in Japan. For example, he could not tell salt from sugar at the supermarket. He also shared his aspirations to contribute to the prosperity of his country by making use of the knowledge and experience he had acquired at the university.

After the speeches by the representative students, Vice-president Minoru Yokita made a toast, which was followed by friendly interaction among the international students, instructors and staff from the university, and people from international student support organizations.

The party was brought to a successful close with some words of encouragement and a toast by Takeo Hondoh, Vice-president and Director of the International Student Center.
HU Alumni’s Today – Dr. López Zavala Miguel Ángel

Dr. López Miguel, a professor at the Water Center for Latin America and the Caribbean (part of the Monterrey Institute of Technology and Higher Education (ITESM) in Mexico), came to Hokkaido University (HU) in 1998 supported by a Ministry of Education Scholarship. Before beginning his studies at HU he served as the head of the Irrigation Units Department at the Mexican Ministry of Agriculture. In his country, despite the availability of sewage lines, and due to a lack of wastewater treatment facilities, only 38.3% of municipal wastewater is treated, the rest is discharged directly into rivers, streams and other water bodies. This condition is what prompted him to study urban and environmental engineering in Japan – a nation with advanced environmental research and cultural aspects that interested him.

While working on his master’s degree, he experienced a turning point in his research. He conceived a simple but ingenious method of managing wastewater by discharging and treating household wastewater from kitchens, bathrooms, and toilets separately instead of discharging them together as is the common practice. His research was supported by the Japan Science and Technology Agency and expanded globally through the cooperative involvement of Japanese universities as well as institutions from Indonesia, China and the Philippines. Accordingly, he established an extensive network of personal connections and his project produced more than 100 dissertations which gave him authority as a researcher.

A very significant event took place when he was a doctoral candidate – the birth of his daughter. Although he was concerned about his wife giving birth abroad because of the language barrier and cultural differences, the doctor in charge and the hospital staff were very kind and were able to allay his concerns. He named his daughter Midori (in Japanese) is associated with life, so he used this Japanese word to name his child. The relationships that he formed in Sapporo still exist, and he maintains a close friendship with the members of a Japanese family who volunteered to teach his wife Japanese, and played with his daughter. He feels that the warmth and kindness of the people is part of what made living in Hokkaido so attractive.

After returning home in 2005, he was inaugurated as a professor at ITESM, and he currently teaches environmental engineering and hydraulics to approximately 100 undergraduates and students in the master’s degree program. He is also involved in a wide range of activities in various capacities, including a role as an evaluator at the National Council of Science Technology and as a referee for scientific journals. He has also obtained domestic and international patents on a bio-toilet system that formed part of his studies.

His ambition as a researcher is to develop an inexpensive, sustainable wastewater treatment method to tackle the costly existing techniques that make it difficult to improve sewerage coverage rates. He also hopes to consolidate students and faculty exchange programs between HU’s Graduate School of Engineering and ITESM and to polish his students with a period of study at HU, where he believes high quality research is conducted by professors who offer excellent academic opportunities for ambitious foreign students. It may be that in the near future researchers who carry on Dr. López Miguel’s dream will be nurtured at HU.

2008 welcome and farewell party held for international students

A party was held to welcome international students admitted to Hokkaido University from April 2008 and to celebrate those who completed their studies or research programs in March 2009 before returning to their home countries. The get-together, hosted by the university president, took place at the Keio Plaza Hotel Sapporo on February 13.

The event was attended by 420 people – far more than an average year – including international students, representatives of foreign diplomatic missions in Sapporo and organizations providing support for international students, university deans, supervisory instructors, and members of international student-related committees.

The party began with an address by President Hiroshi Saeki, followed by a speech on behalf of the guests by Consul General Donna Welton from the U.S. Consulate General in Sapporo.

Next, representing those who were admitted to the university, Chapuis Hugo Jean from France (a participant in the Hokkaido University Short Term Exchange Programme (HUSTEP)), shared his impressions after arriving in Sapporo. Shocked by the cultural differences he encountered, he was initially concerned as to whether he would ever get used to living in Japan. However, he was able to readily make friends with other international students from various countries as well as Japanese students, and is now having a great time.

Next, Akhil Ranjan Baruah from India (in the latter period of doctoral degree program at the Graduate School of Agriculture) shared his experiences on behalf of those who were returning to their home countries. He told how he was confused by a number of things during the first phases of living in Japan. For example, he could not tell salt from sugar at the supermarket. He also shared his aspirations to contribute to the prosperity of his country by making use of the knowledge and experience he had acquired at the university.

After the speeches by the representative students, Vice-president Minoru Yokota made a toast, which was followed by friendly interaction among the international students, instructors and staff from the university, and people from international student support organizations.

The party was brought to a successful close with some words of encouragement and a toast by Takeo Hondoh, Vice-president and Director of the International Student Center.
Graduate School Introduction Series 11
Hokkaido University Public Policy School

Hokkaido University Public Policy School (HOPS) was established as a professional graduate school in April 2005. Traditionally, graduate schools have primarily sought to nurture researchers, but HOPS aims to produce professionals with high levels of expertise to formulate and implement public policies. Specifically, the school has turned out graduates who shape public policies covering a wide range of fields in their capacities as national and local government employees, international civil servants, journalists, NPO members, and employees of private enterprises. Another characteristic of HOPS is that it admits a significant number of adults that want to continue their education; including public servants, local assembly members, and individuals, working in private businesses.

The most salient aspect of HOPS is its guiding concept of fusing humanities and sciences. Namely, students systematically learn what is necessary for the formulation and implementation of public policy beyond the boundaries of the humanities and sciences. To this end, HOPS’s curriculums are structured on a cooperative framework of three graduate schools – the Graduate School of Engineering, the Graduate School of Economics and Business Administration, and the Graduate School of Law.

The second aim of HOPS is to integrate the fields of policy formulation and implementation with centers of academic excellence as well as to merge conceptual skills with the ability to realize those ideas. Hence, its faculty includes not only professors from the aforementioned graduate schools, but also individuals operating at the forefront of various fields (including central government ministries and agencies, governmental institutions and the mass media) to work as instructors that have the most recent knowledge and experience in their fields of specialty. A variety of instructors of this caliber offer lessons that enable students to consider real policy challenges and speak to society about ideal ways to formulate and implement public policy today.

As a characteristic of its educational system, HOPS offers a unique range of subjects in line with its aim of providing students with the opportunity to learn about public policies. Specifically, not only are a variety of subjects offered, but also case studies are discussed with guests invited from the forefront of various policy areas to hold discussions, and externship programs are offered to students so they can gain hands-on experience. Last, but not least, policy-paper writing skills are also studied to improve the ways policy is proposed and structured.

Graduate School of Dental Medicine celebrates the adoption of Japan International Cooperation Agency's (JICA) grassroots technical cooperation project in Bangladesh

Following the informal decision on August 31, 2007 that Hokkaido University was to be entrusted with the Model Project for Improvement on Oral Health Care in Rural Area in Bangladesh (a support-type grassroots technical cooperation project of JICA), the acceptance of the project by the Government of Bangladesh was recently finalized, and a ceremony to mark this adoption was held at the Graduate School of Dental Medicine on February 10, 2009.

The ceremony began with an address by Prof. Kawanami (Dean of the Graduate School of Dental Medicine), followed by an outline of the grassroots technical cooperation project from Mr. Ishii (Director of the Partnership Program Division, JICA). Associate Prof. Takinami then explained the execution of the preventive dentistry model project for health promotion in Bangladesh.

In preparation for the commencement of the project, staff members visited Bangladesh at the end of February for discussions with local officials.

As this is Hokkaido University’s first opportunity to implement such an initiative, the Graduate School of Dental Medicine is committed to providing support for it in close cooperation with the JICA Sapporo International Center.

Suguru Ishiguro of the Faculty of Engineering wins first prize in the Sendai Design League 2009 Contest

Suguru Ishiguro, a fourth-year student on the Course of Architecture at the Faculty of Engineering’s Department of Socio-Environmental Engineering, won first prize in the Sendai Design League 2009. The competition, which aims to find Japan's best graduation project, was held at the Tohoku University Centennial Hall's Kawauchi Hagi Hall on March 6.

The competition selects the nation’s best work submitted by recent graduates from across Japan. Screening was performed through a process of open review by renowned Japanese architects representing a broad spectrum of architectural style.

Ishiguro’s residential landscape is based on spatial reconstruction at the once urban area of Muroran (Hokkaido) and employs a design approach that involves cutting out units of space measuring 10 m² and re-assembling them in a kind of re-editing process.

The concept and potential of the spatial reconstruction method as epitomized by the work’s title (Re-edit) was highly praised by the judging panel.
Graduate School Introduction Series 11
Hokkaido University Public Policy School

Hokkaido University Public Policy School (HOPS) was established as a professional graduate school in April 2005. Traditionally, graduate schools have primarily sought to nurture researchers, but HOPS aims to produce professionals with high levels of expertise to formulate and implement public policies. Specifically, the school has turned out graduates who shape public policies covering a wide range of fields in their capacities as national and local government employees, international civil servants, journalists, NPO members, and employees of private enterprises. Another characteristic of HOPS is that it admits a significant number of adults that want to continue their education; including public servants, local assembly members, and individuals, working in private businesses.

The most salient aspect of HOPS is its guiding concept of fusing humanities and sciences. Namely, students systematically learn what is necessary for the formulation and implementation of public policy beyond the boundaries of the humanities and sciences. To this end, HOPS’s curriculums are structured on a cooperative framework of three graduate schools – the Graduate School of Engineering, the Graduate School of Economics and Business Administration, and the Graduate School of Law.

The second aim of HOPS is to integrate the fields of policy formulation and implementation with centers of academic excellence as well as to merge conceptual skills with the ability to realize those ideas. Hence, its faculty includes not only professors from the aforementioned graduate schools, but also individuals operating at the forefront of various fields (including central government ministries and agencies, governmental institutions and the mass media) to work as instructors that have the most recent knowledge and experience in their fields of specialty. A variety of instructors of this caliber offer lessons that enable students to consider real policy challenges and speak to society about ideal ways to formulate and implement public policy today.

As a characteristic of its educational system, HOPS offers a unique range of subjects in line with its aim of providing students with the opportunity to learn about public policies. Specifically, not only are a variety of subjects offered, but also case studies are discussed with guests invited from the forefront of various policy areas to hold discussions, and externship programs are offered to students so they can gain hands-on experience. Last, but not least, policy-paper writing skills are also studied to improve the ways policy is proposed and structured.

Graduate School of Dental Medicine celebrates the adoption of Japan International Cooperation Agency's (JICA) grassroots technical cooperation project in Bangladesh

Following the informal decision on August 31, 2007 that Hokkaido University was to be entrusted with the Model Project for Improvement on Oral Health Care in Rural Area in Bangladesh (a support-type grassroots technical cooperation project of JICA), the acceptance of the project by the Government of Bangladesh was recently finalized, and a ceremony to mark this adoption was held at the Graduate School of Dental Medicine on February 10, 2009.

The ceremony began with an address by Prof. Kawanami (Dean of the Graduate School of Dental Medicine), followed by an outline of the grassroots technical cooperation project from Mr. Ishii (Director of the Partnership Program Division, JICA). Associate Prof. Takinami then explained the execution of the preventive dentistry model project for health promotion in Bangladesh.

In preparation for the commencement of the project, staff members visited Bangladesh at the end of February for discussions with local leaders.

As this is Hokkaido University’s first opportunity to implement such an initiative, the Graduate School of Dental Medicine is committed to providing support for it in close cooperation with the JICA Sapporo International Center.

Suguru Ishiguro of the Faculty of Engineering wins first prize in the Sendai Design League 2009 Contest

Suguru Ishiguro, a fourth-year student on the Course of Architecture at the Faculty of Engineering’s Department of Socio-Environmental Engineering, won first prize in the Sendai Design League 2009. The competition, which aims to find Japan’s best graduation project, was held at the Tohoku University Centennial Hall’s Kawauchi Hagi Hall on March 8.

The competition selects the nation’s best work submitted by recent graduates from across Japan. Screening was performed through a process of open review by renowned Japanese architects representing a broad spectrum of architectural style.

Ishiguro’s residential landscape is based on spatial reconstruction at the once urban area of Muroran (Hokkaido) and employs a design approach that involves cutting out units of space measuring 10 m² and re-assembling them in a kind of re-editing process.

The concept and potential of the spatial reconstruction method as epitomized by the work’s title (Re-edit) was highly praised by the judging panel.
Graduate School Website for Prospective International Students Opens

A one-stop website called the Hokkaido University Graduate School Information for Prospective International Students has been created to help international students interested in attending Hokkaido University graduate schools to easily obtain the information they need.

A wide range of guidance is available on the site. Information on admissions procedures, entrance examinations, and courses taught in English are available as well as financial data on tuition fees, living expenses, and scholarships. Also provided are resources to help students get a feel of campus life at Hokkaido University. This includes seasonal campus photos and first-hand reports from graduates and current students. An inquiry form on the site also allows prospective students to ask specific questions to the graduate schools they are interested in.

Please come visit the website and check out the useful information!

URL: http://grad.isc.hokudai.ac.jp/cgi-bin/index-e.pl

HOKKAIDO UNIVERSITY

Your candid views and impressions are welcome as we strive toward continuous improvement to the content. Please contact us in the event that you have changed your e-mail address or wish to unsubscribe.

International Affairs Division, Hokkaido University
TEL +81-(0)11-706-2334
FAX +81-(0)11-706-2095
Email: news@general.hokudai.ac.jp

Please visit our website for recent news: http://www.hokudai.ac.jp/en/
You can also find the previous edition at http://www.hokudai.ac.jp/en/pickup/publicrelations.html