

The University of Tokyo Magazine

English
Version

08

March, 2009

淡青

t a n s e i

Tansai aims at sharing the latest developments at the University of Tokyo with everyone interested in education and research worldwide.

feature 1

Life

at the University of Tokyo
for Foreign Researchers
and International Students

feature 2

The Environment

feature 3

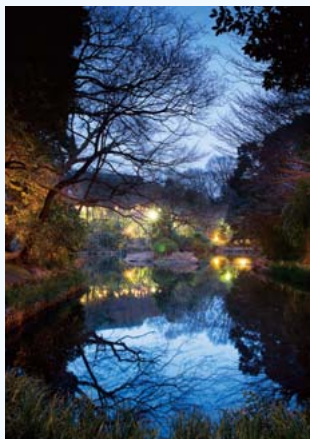
Advanced

Education and Research

Interview:

President Komiyama

Sums Up
Four Years
of Progress



The University of Tokyo Magazine

淡青
t a n s e i

English
Version
08

March, 2009

TANSEI - The school color of the University of Tokyo is light blue ('tansei in Japanese'). It was initially used at the first rowing regatta between the University of Tokyo and Kyoto University in 1920.

The colors of the two universities were determined by drawing lots. Kyoto University drew dark blue and the University of Tokyo light blue. Since then, light blue has been the school color of the University of Tokyo.

Welcome to TANSEI 08. This issue centers on three feature articles and an interview with the President of the University of Tokyo, Hiroshi Komiyama. President Komiyama, whose four-year term will end on March 31, 2009, looks back over his leadership of the university in the period immediately following its incorporation, during which he focused on building "Autonomous and Decentralized yet Cooperative Systems." The feature articles examine areas upon which the University of Tokyo has placed particular emphasis in recent years: the environment, internationalization, and advanced education and research.

Beginning with this issue, the back page will present statistical data on the university, giving readers a quick glimpse of the current state of affairs on campus. We hope you will enjoy this issue of TANSEI.

Hiroyuki TAKEDA Ph.D

Chairperson of the Public Relations Committee,
Professor, Graduate School of Science

CONTENTS

p.03-09

feature 1

Life at the University of Tokyo for Foreign Researchers and International Students

p.10-15

feature 2

The Environment

p.16-19

feature 3

Advanced Education and Research

p.20-23

Interview

President Komiyama Sums Up
Four Years of Progress

p.24-25

UT Forum in Seoul

p.26-27

Invitation to Science

p.28-29

News in Brief

p.30-31

The University of Tokyo by numbers

feature

1

Life at the University of Tokyo for Foreign Researchers and International Students

Among those who have selected Todai (the University of Tokyo) as their place of learning or research are a growing number of people from countries other than Japan. They arrive in this thriving metropolis with a variety of individual dreams and ambitions. In this feature we will introduce you to the academic life of the University of Tokyo as experienced by these researchers and students from other countries.

A Day in the Life of a Foreign Scholar: Daniel Schley

Daniel Schley is a young German specialist in Japanese history. To study Japan's history requires a familiarity with Japanese culture and a good command of the Japanese language. Mr. Schley's academic life is sustained by a deep feeling for Japanese culture.



Daniel SCHLEY

Research fellow at the Historiographical Institute. Born in Hamburg. Enrolled in the doctoral program at the University of Munich, he came to Japan five months ago as a research fellow in the Institute.

This is how I spend my day!

To me, Todai is an inspiring

10:00

Arrive at Todai.
Go to the General Library.



Arriving at Todai in the morning on my bicycle. I live about ten minutes away from campus. In the background you can see the famous Akamon (Red Gate), symbol of the University.

My first stop is the General Library, to prepare for the afternoon's classes. The total number of books in all of the University of Tokyo libraries is about 8.7 million. Of that, some 1.2 million volumes are housed in the General Library. It is a rich collection, and I use it all the time.



Things that make me happy that I came to Todai

Having received a German Academic Exchange Service (DAAD) grant for dissertation research, and thanks to Professor Shigekazu Kondo, I find myself in a very fortunate environment in which to devote myself to pursuing the topic of my dissertation as a foreign researcher at the Historiographical Institute. I am attempting to understand the nature of medieval kingship and its religious aspects in medieval Japan through close reading of a variety of historical sources, and I think the University of Tokyo is the ideal place to be doing this. Being here gives me

the chance to talk shop with faculty and graduate students who are at the cutting edge of historical research, while at the same time having access to the Historiographical Institute with its long tradition of collecting important historical sources, as well as a university library with a world-class collection of academic works—providing me with a splendid situation for conducting my own research. Not only that, we should not overlook the appeal of how easy it is to participate in the symposiums sponsored by the university throughout the year, receiving a variety of inspiration

and the opportunity to get to know other scholars from Japan and abroad. On weekdays I am usually working in the foreign researchers' reading room on the Hongo campus, but once and awhile, for a change of pace, I'll go visit one of the departmental libraries of other faculties or graduate schools.

The reading rooms of the departments of German literature or ethics, for example, have a huge number of quite interesting books in German on philosophical and literary subjects. It's often a nice break for me to go there to read and enjoy the conversations I get

12:30

Lunch at a soba shop.



Today I went to lunch with other foreign researchers at a soba shop near the Akamon. I had a Japanese noodle dish called nabeyaki udon. It really warms you up. I learned how to use chopsticks after I arrived in Japan.



Participating in Professor Kondo's seminar on diplomatics. This seminar is devoted to the study of the original texts of written Japanese historical sources. Professor Kondo is my faculty advisor.



Back to the foreign researchers' reading room to really hit the books. This reading room is home to scholars from a number of countries including the United States, Spain, and Russia. We enjoy each other's company. On this particular day I read very intently until eight in the evening.

place to be a scholar.

13:30

Participate in Professor Kondo's seminar.

15:10

Break at a café on campus.

15:40

Browse used bookstore near campus.

16:15

Return to the reading room for foreign researchers at the Historiographical Institute to continue my research.

19:50

Head for home.



After an hour and a half of this absorbing seminar, I relax with friends at a campus café—a time I really enjoy.



Browsing at a used bookstore near Todai. This bookstore carries a lot of titles in areas directly relevant to my dissertation topic. I frequently make valuable discoveries here.



Shigekazu KONDO

*Professor
International Center for the Digitization of
Premodern Japanese Sources (concurrently with
Ancient Materials Department)
Historiographical Institute*

A German researcher of Japanese history is a valuable presence

My seminar on diplomatics meets once a week. During the seminar, we read medieval primary source materials such as manuscripts and letters. Mr. Schley is one of four foreign participants in the course, and he has demonstrated that he is a dedicated researcher. Although I am sure that it must be difficult for foreign researchers to read handwritten documents in medieval Japanese, I am pleased that I rarely have had to make

any concessions in the quality level of the seminar due to the knowledge base or linguistic skill of these participants. Mr. Schley's research topic deals with the authority of kingship in medieval Japan. Currently there are few German scholars studying medieval Japanese history, so his work in the field is very valuable. I truly hope that he will return to Germany feeling his time here (at the University of Tokyo) was well spent.

into with the people I meet there. The atmosphere of the reading room is also very important to my daily research work. The other researchers are nice, funny folks from America, Russia, Portugal, and other countries that I made friends with instantly and also spend time with outside the reading room as well. Having grown up in a culture different from Japan's, there are times when I hit a wall trying to understand this one, and at times like that I am deeply aware of how lucky I am to be able to study Japanese history at Todai in such fortunate surroundings.

A Day in the Life of a Foreign Scholar: Alena Neviarouskaya

Ms. Neviarouskaya is a graduate student from Belarus who, along with her Belarussian husband, is here in Tokyo on the path to becoming a scientist.



Alena NEVIAROUSKAYA

First-year doctoral student in the Graduate School of Information Science and Technology. After graduating from the Belarussian State University of Informatics and Radioelectronics, she entered graduate school at the University of Tokyo on a Japanese Government (Monbukagakusho) Scholarship.

In the morning I arrive at my desk in the laboratory. It takes about an hour to commute to campus. This morning, I work all morning at my desk.



I meet my husband Dzmityr for a box lunch beside Sanshiro Pond. I have become very fond of Japanese box lunches. Dzmityr is also a foreign research fellow at Todai.



On my way back to my desk I run into some of my international student friends in the hallway and ask them to watch me practice my research presentation. I am scheduled to present my work in the seminar in the near future, and I want to rehearse it. Naturally, my friends are happy to help me out.



This is how I spend my day!

Studying at the University of Tokyo

My name is Alena Neviarouskaya. Almost four years ago, I came from the European country of crystal blue lakes and white storks, Belarus, to the country of tender sakura blossoms and red-crowned cranes, Japan. I am currently a Ph.D. candidate in the Ishizuka Laboratory, Graduate School of Information Science and Technology, the University of Tokyo. My research topic is textual affect recognition and opinion mining. I decided to come to the University of Tokyo because it is considered one of the world's top-level universities, providing wide educational and research opportunities for enrolled students. My decision to study at the University of Tokyo was motivated by a thirst for new knowledge in information technology, and was inspired by the chance to spend student life in an atmosphere of creativity and freedom of research ideas. Undoubtedly, the high teaching standards of professors

at the University of Tokyo, the modern laboratory facilities provided for students, and access to the literature in various research areas play very important role in successful education. The first months of adapting to my life on Hongo campus were full of vivid impressions from familiarization with Japanese culture. I enjoyed the interactive learning of the Japanese language in the group of foreign students and meeting new friends from all over the world. Now my daily routine includes attending lectures, working on the research topic in the laboratory, reading the books and papers, and preparing presentations for meetings and international conferences. In my research life at the Ishizuka Laboratory I appreciate the opportunities to attend international conferences and to

participate in internship programs (at the end of my master's course I spent two weeks as a visiting student at the IBM Watson Research Center in the United States). Every country I visit leaves pleasant memories in my heart. Also, I like the Japanese tradition of bringing omiyage (sweets) from abroad to my colleagues in the laboratory. International students get great support from the Office of International Students and the Office of International Relations, which help us with on-campus and off-campus formalities and organize trips to interesting places. A bright event that colored my personal life in Tokyo was that on Hongo campus I met another student from Belarus, Dzmityr Tsetserukou, who two years later became my husband. Together we spent our spare time walking around and enjoying

9:30

Arrive at the Graduate School of Information Science and Technology. The morning is occupied by research at my desk.

12:15

Lunch with my husband at Sanshiro Pond.

I came to the University of Tokyo because it is one of the top universities in the world.



In the evening, I participate in the seminar of Professor Katsushi Ikeuchi, a member of the Interfaculty Initiative in Information Studies. The content of Professor Ikeuchi's seminar is very interesting and useful for my research purposes. My faculty advisor is Professor Mitsuru Ishizuka. On this particular day, I return to the Ishizuka lab and continue my research until about half past seven in the evening.



The presentation rehearsal. I use a PowerPoint file I have created to explain my research to my friends.

After the rehearsal we have a little snack in the lab and my friends provide a frank analysis of my presentation's strengths and weaknesses.



I consult with two staff members responsible for assisting international students: Ms. Yoshiko Shiraiishi of Office of International Students (right) and Ms. Kaori Sato of the Office of International Relations (left). They manage and assist international students at the School of Engineering and the Graduate School of Information Science and Technology. Sometime they take international students to Japanese historic and cultural spots.

14:40

Presentation of my current research to other foreign students.

16:30

Critique of my presentation and chatting with my friends in the lab.

17:30

Participate in Professor Ikeuchi's seminar.

19:00

Back to the lab for research

19:30

Head for home

the beautiful places on campus: Akamon (Red Gate), Sanshiro Pond, the main promenade of ginkgo trees. Supporting each other, sharing and discussing research ideas, made our studies more fruitful and easier. After happy celebrations of my Master and Dzmityr's Ph.D. course graduations, we continue to enrich our educational background as a Ph.D. candidate and a Japan Society for the Promotion of Sciences Postdoctoral Fellow at the University of Tokyo. In the future, my first and main step is to successfully complete the Ph.D. program, and then to find a position at a scientific institution. I am deeply grateful to my advisor, Professor Mitsuru Ishizuka, for his kindness and care, encouragement and support during my years of study, and the great opportunity to be involved in the research of his laboratory.



Mitsuru ISHIZUKA

*Professor
Graduate School of Information Science
and Technology*

Ms. Neviarouskaya is successfully pursuing independent research

In my lab there are now quite a large number of international graduate students, ten in all (seven of them in the Ph.D. course). Five are from Asia, three from Europe, two from Central and South America. Eight of them are here supported by the Monbukagakusho Scholarships. The other two Europeans are from Austria and France. I have had some students from Europe, and I think, because of their tradition, that they have a very solid academic foundation and their approaches

of engaging in research are also quite sound. Ms. Neviarouskaya is from Belarus. Although I had male students from Poland and Russia previously, she is the first female student from Eastern Europe I have advised. Her personality is quite modest and ladylike, yet she is quite successfully pursuing independent research and has presented her findings overseas four times to date, so she appears to be both ambitious and self-assured as well.

Voices of international students and researchers

That's why I came to Todai!

Todai currently has more than 2,000 international students and more than 3,000 foreign researchers. We asked what drew them to this far-eastern education institute.



Ujin I

*Graduate School of Engineering
Third-year PhD student majoring in architecture
From South Korea*

I came to Todai because Japan is the most advanced on my particular research theme!

When I was doing my master's degree in Korea, I attended a lecture by Associate Professor Takafumi Noguchi (Graduate School of Engineering), who is now my supervisor, and that's what brought me to Todai. I wanted to do my research under Professor Noguchi, who is the leading figure in my area. Todai is great environment for research, but I wish the library was open until later! I started studying Japanese once I arrived in Japan. Because I wanted to engage in in-depth research discussion with my supervisor, I really worked hard at it, even to the extent of cutting back on my sleep. When I was doing my Master's degree, my supervisor told me that money will come and go, but knowledge is a personal weapon that nobody can take away. Rather than being satisfied with what I already know, I need to study more and more! I'm more interested in becoming a great researcher than a prominent academic figure.



Patrick John RAMOS

*Graduate School of Engineering
First-year PhD student majoring in civil engineering
From the Philippines*

I came to Todai to become a policymaker who understands engineers!

I haven't been in Japan very long, but the staff who look after the international students understand English, and even people who don't understand English do their best to get their message across. I love Japanese food too, so I have no problems either with my research or with living in Japan. Sometimes, though, I do wonder whether Todai's English output isn't a little low; there aren't many lectures in English, for example. I think it would be great if more students came from all over—from places on the other side of the globe like Chile, for example. I worked for the Philippine government before I came to Todai, and sometimes when we were tackling infrastructure projects, I would sense a gap between the thinking of government officials and private-sector engineers. So what I want to do is utilize both that experience of working for the government and my current research to become a policymaker who also understands the practical side.



The University of Tokyo's Overseas offices and Global University Network

The Todai-Yale Initiative

In 2007 the University of Tokyo, in cooperation with Yale University, established at Yale the Todai-Yale Initiative, an overseas center for Japanese studies and other Japan-related research in the social sciences and humanities. The Todai-Yale Initiative currently has a permanent staff of three University of Tokyo faculty members working to promote academic exchange. The center's outreach efforts

include holding workshops and symposiums on the Yale University campus. The Todai-Yale Initiative is well on its way to becoming an important overseas center for Japanese studies.

<http://dir.u-tokyo.ac.jp/en/kokusai/yale.html>



Todai Week at Tsinghua

"Todai Week at Tsinghua" was held from May 19 to May 21, 2008, at Tsinghua University in Beijing, China. Organized for the purpose of promoting exchange between the two universities through academic and cultural activities, the three-day event brought together approximately 120 faculty and administrative staff members and 100 graduate students from the University of Tokyo and about 600 faculty members and students from Tsinghua University. Activities



Senglai PATTARAPONG

College of Arts and Sciences
First-year student
From Thailand

I came to Todai because I wanted to study in a non-English-speaking country!

I came to Japan when I was 16 because I wanted to study in a non-English-speaking country. I even graduated from a Japanese high school. Since I've been at Todai, a look at the Todai Action Plan, the number of teachers and alumni, the budget and various other data have really brought home the massive scale of this university. Such a great environment is obviously also very conducive to study. I think that Todai also makes a strong social contribution in the form of its numerous volunteer activities, like the group that cleans up Shibuya. At the same time, Japanese students don't seem to have much interest in politics. In Thailand, not least because of the unstable political situation, students are actively involved in politics. I would like to see Todai students take more of an interest. In the future, I'd like to go home and become a university professor, both researching and teaching in the area of Asia's international relations and politics.



Sonho JUN

College of Arts and Sciences
First-year student
From South Korea

I came to Todai because I stumbled on a program for studying in Japan!

I came to Todai because I happened to find a program for studying in Japan and thought that with Japan and Korea so close to each other, studying Japanese would have to be useful. Because this is the first time I've lived by myself, I don't really know what to do with my time. However, I do study more than when I was in Korea. It's easier for me to understand lectures in Japanese than in English, but because I want to get better at English, I'd like to have more lectures in English. At the moment, if you study abroad while you're enrolled at Todai, you apparently lose your scholarship, and I'd like to see the system changed so that you can keep the scholarship. There are also some compulsory subjects, so it is practically almost impossible for undergraduate students to study abroad while staying enrolled here. I'd like to see the curriculum made more flexible. I'm not really thinking about the future yet, but because Korea has compulsory military service, I'm wondering what to do during that period.



Andre OLTRANI

Graduate Schools for Law and Politics
Second-year Master's student majoring in law and political science
From Italy

I came to Todai because I wanted to study Japan's legal terminology!

I approve of Todai becoming more international. However, if the university goes too far in that direction and English takes over, I wonder if it would seem worth coming to Japan. That's because I'm studying comparative law, looking at Japan and the West with a particular focus on problems of translating legal terminology. Law is language culture. You have to understand history, culture and a whole host of other areas. That's what makes it so challenging. For researchers like me who want to study Japanese, sometimes situations arise where I would prefer that Japanese was used rather than English. Then, if you end up struggling because you don't understand the language, you feel motivated to study harder. There isn't just one road to internationalization. I think there could be other approaches to support for international students too—offering guidance in both Japanese and English, for example.



began on May 18 with "Todai Week at Tsinghua Eve" and a fundraising campaign for victims of the Sichuan earthquake. On May 19 the program began with the opening ceremony and unveiling of a Friendship Gingko Tree, followed by lectures, workshops, symposiums, and other events.

<http://dir.u-tokyo.ac.jp/en/topics/seika.html>



International Alliance of Research Universities (IARU)

The International Alliance of Research Universities (IARU) is a strategic alliance of ten of the world's leading research universities that share a similar vision and commitment to educating future leaders. The IARU consists of the University of Tokyo, Australian National University (ANU), National University of Singapore (NUS), Peking University, Swiss Federal Institute of Technology Zurich (ETH Zurich), University of California, Berkeley, University of Cambridge, University of Copenhagen, University of Oxford, and Yale University. These

institutions are collaborating on projects in seven areas: Energy, Resources and Environment; Campus Sustainability; Regional Perspectives on Global Security; Movement of People; Longevity and Health; Women and Men in Globalizing Universities; and Graduate and Undergraduate Education. The IARU promises to provide an important platform for efforts to enhance the University of Tokyo's global presence.

<http://dir.u-tokyo.ac.jp/en/kokusai/iaru.html>



the Environment

feature 2

The twenty-first century is being called the Century of the Environment, and at the University of Tokyo a variety of research and educational efforts are directed toward protecting the global ecosystem. In order to develop new social models based on environmental awareness, the campus is being used in a variety of ways as a kind of laboratory for social experimentation. Here, we will introduce a few of these activities.

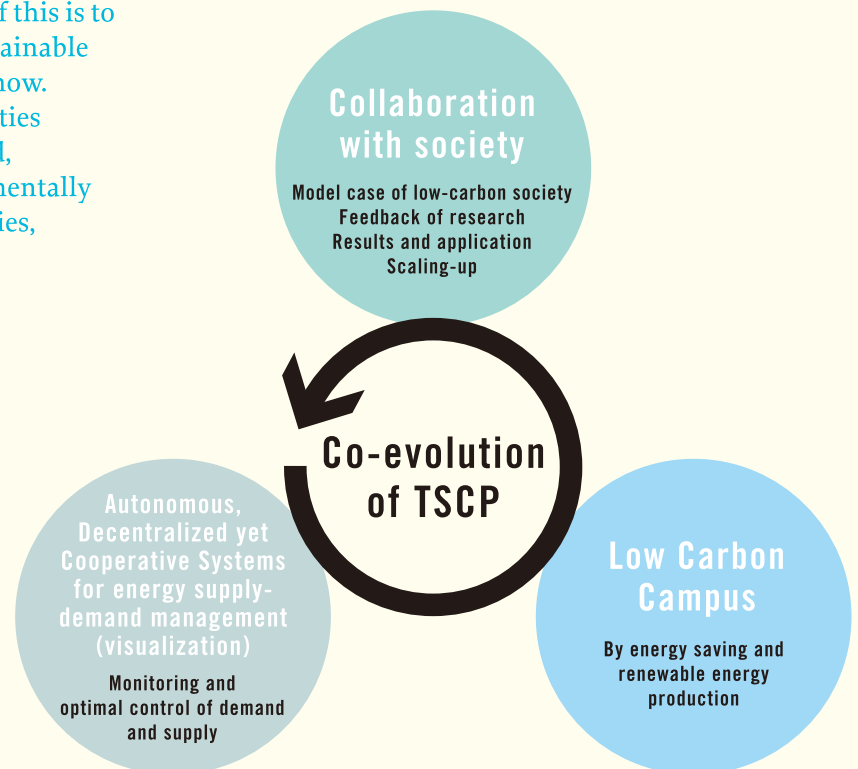
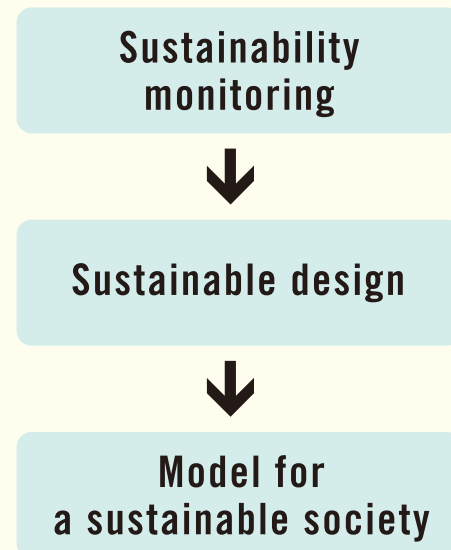
Todai Sustainable Campus Project (TSCP)

The University of Tokyo aims at being one of the leading universities of our time. One aspect of this is to blaze the trail toward the realization of a sustainable society through our own behavior, here and now. In this Century of the Environment, universities have the duty of playing a leadership role and, through practicing sustainable and environmentally harmonious research and educational activities, provide new social models centered upon environmentally friendly economic activity.

The University of Tokyo has initiated proactive measures toward achieving a sustainable campus that fully utilizes our existing intellectual resources and invigorates research and education at the university by launching the university-wide Todai Sustainable Campus Project (TSCP). There are a diverse variety of subjects that might be addressed under the rubric of sustainability, but TSCP has placed its most urgent priority on reduction of greenhouse gas emissions, setting emissions reduction targets for the entire university. In order to achieve a low carbon-footprint campus through emissions reductions, various campus organizations and faculty members must work together to achieve an optimal balance of energy supply and demand for the university as a whole, creating "Autonomous and Decentralized yet Cooperative Systems." Moreover, from both the standpoint of rational use of

resources and of working to arrest global warming, investigation is required of concrete measures not only for energy conservation, but also for energy creation. These efforts should not stop at the borders of the campus, but should be expanded to create a global movement by actively sharing information via a

network of academic institutions at home and abroad and among industry, academia, and government. Through the ongoing implementation of TSCP, the University of Tokyo hopes to contribute to the achievement of a sustainable society.



Phase I (April 2008–March 2013)

TSCP-2012:

Cut CO₂ emissions 15 percent by 2012

During the first five-year phase of the project—TSCP-2012—between FY 2008 and FY 2012, we aim to reduce CO₂ emissions from non-experiment activities by 15% by FY 2012 from the FY 2006 level (13% in terms of total CO₂ emissions at the university).

1

Monitoring & feedback

Installation of power meters (visualization) to control the increase of emissions caused by the expansion of educational and research activities.



2

Support for switching to energy-saving equipment

Equipment will be replaced if the cost recovery period is less than half the replacement period, or where the ratio of CO₂ reduction to initial cost is very high. Initial investment support will be considered for equipment where the recovery period exceeds four years. Estimated annual CO₂ reductions achievable through such support are 6.3% through replacement of large-scale heat-source systems (initial investment: 510 million yen) and 7.1% through replacement of lighting, air conditioning, refrigeration and other equipment (initial investment: 2.6 billion yen).



3

Development of a model of introduction and dissemination of energy-saving equipment based on large-volume procurement

Contain costs through large-volume procurement and develop model for dissemination of energy-efficient equipment that can be promoted in society at large.



4

Development of agenda for reducing CO₂ emissions by 50 percent by 2030

Following TSCP-2012, TSCP-2030, the second phase of the project slated to end in FY 2030, will begin. The goal of TSCP-2030 is to reduce CO₂ emissions by 50% from the FY 2006 level, and we will formulate a specific plan for doing this by 2012.

Phase 2 (April 2013–March 2031)

TSCP-2030:

Cut CO₂ emissions 50 percent by 2030

At present, we are planning to replace ageing equipment, including that which is not subject to replacement during TSCP-2012, with higher efficiency models, introduce technologies that are not feasible during TSCP-2012 due to high costs or other reasons, and commence full-scale energy creation (photovoltaic power generation, etc.).

TSCP Initiatives That Have Already Begun

Conversion to High-Efficiency Lighting (Hongo, Komaba, Nakano, Shirokane campuses)

In the field of lighting, the appearance of high frequency (Hf) fluorescent lighting fixtures making use of inverter technology has made it possible to achieve the same level of brightness with considerably less energy. Of some 200,000 light fixtures on the University of Tokyo's

campuses, approximately 80 percent had already been converted to higher energy efficiency fixtures. The remaining 20 percent (some 38,000 fixtures) have recently been replaced, simultaneously reducing the carbon footprint and lowering energy costs.

Conversion to a High-Efficiency Electric Chiller (Hongo: The University of Tokyo Hospital)

In the field of air conditioning, heat-pump technology has made rapid progress, making it possible to dramatically lower the amount of energy needed to generate an identical amount of heat. By replacing the large-scale heat source equipment at the University of Tokyo Hospital with a heat-recovery

electric turbo chiller, production of cold water has been made much more efficient, and the heat recovery technology now allows simultaneous production of both cold and hot water. This has led to major reductions in both the carbon footprint and energy costs.

Clean Development Mechanism (CDM) in partnership with private-sector industry

A domestic carbon-credit system is being implemented as one practical method for reduction of the carbon footprint, and as an educational and research institution the University of Tokyo would like to lead the way in promoting and expanding the system. The company, which will

act as the credit purchaser in this CDM project, is a company already operating convenience stores on our campuses that are included in the total carbon dioxide emissions count for the university.

University Corporate Relations Council

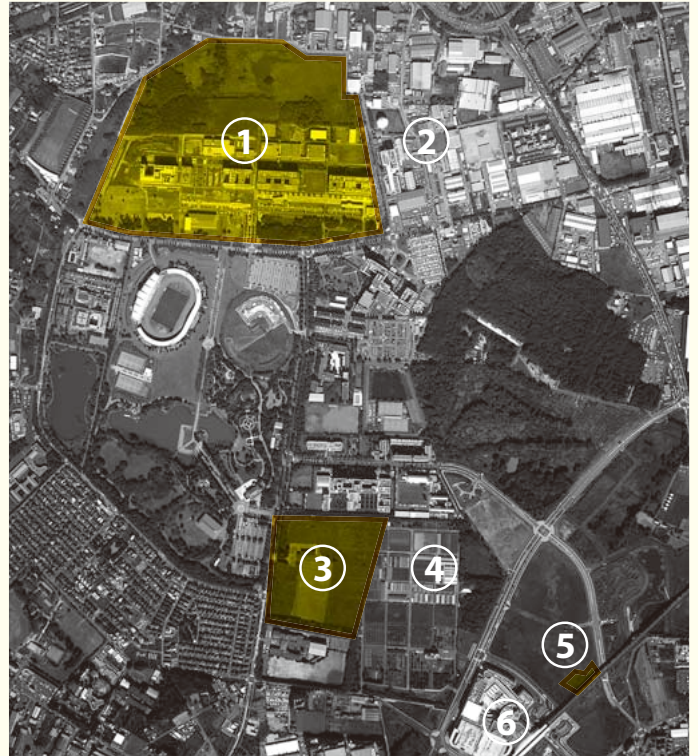
The University of Tokyo, with the many types of buildings and facilities housing its science and humanities programs, the University Hospital, and other medical treatment centers, presents a diverse pattern of energy consumption. The University Corporate Relations Council aims

at utilizing information held by private-sector industry and by the university to develop guidelines that can be applied both within and outside the university, meanwhile providing a social model for collaboration between industry, academia, and government.

The Kashiwa Campus

A Proposal for the Environmentally Conscious Academic City of the Future

The University of Tokyo's Kashiwa Campus was established in Kashiwa City, Chiba Prefecture in 1999. Since then seven of the University's graduate schools, research centers and institutes have relocated to the new campus. The campus is the focus of the Kashiwa International Campus Project, which welcomes a large number of foreign researchers each year. This is part of the Kashiwanoha International Campus Town Initiative, an experiment in urban planning under which, in partnership with Chiba University, Kashiwa City and Chiba Prefecture, a model environmentally conscious academic city for the future is gradually taking shape. Here we introduce some examples of projects that have already begun.



1. Todai Kashiwa Campus 2. Tokatsu Techno Plaza Todai Kashiwa Venture Plaza 3. Todai Kashiwa Campus II 4. Center for Environment, Health and Field Science, Chiba University 5. Todai Kashiwanoha Station Campus (provisional name) 6. Kashiwanoha Campus Station

Sustainability Science Research Column

Structuring knowledge to create sustainability science

The importance of sustainability issues, environmental problems included, has received wide recognition, with various initiatives underway from the government through to the individual level. And, as evidenced by the 2007 receipt of a Nobel Peace Prize by the Intergovernmental Panel on Climate Change (IPCC), expectations are high as to the role that scientists and universities might play in addressing sustainability issues.

The establishment of sustainability science as a new academic field will demand a departure from the increasing segmentation of academic disciplines that has accompanied scientific progress, instead rebuilding and integrating knowledge in a form that will benefit society. The narrow focus on CO₂ emission reductions must be replaced by a holistic examination of the interlinkages among global, social and human systems. Scientists at the Integrated Research System for Sustainability Science (IR₃S) are taking a transdisciplinary approach to the realization of a sustainable society.

Sustainability Science Education Column

The Graduate Program in Sustainability Science trains safe hands for the Earth's future

Global sustainability will rest on the shoulders of future generations, and as such, it is absolutely incumbent upon universities to foster human resources able to understand the diverse, international and transdisciplinary nature of sustainability and act to realize sustainable societies

In 2007, with the cooperation of IR₃S, a Graduate Program in Sustainability Science (Master's program) was launched as an interdisciplinary program among five departments in the Division of

Environmental Studies within the Graduate School of Frontier Sciences. In addition to the acquisition of a wide range of knowledge and concepts, the program places particular emphasis on exercises and projects. The aim is for students from many different specializations and cultural backgrounds to stimulate each other intellectually as they engage with sustainability issues through these exercises, and as a result, to acquire practical knowledge and skills.

What makes a sustainability professional?

Ability to communicate

Systems-thinking approach

Ability to take an overarching view

Appreciation of diversity

Where sustainability professionals will work

- ➔ On the front line in international cooperation and development assistance
- ➔ In international institutions, resolving conflicts of interest
- ➔ Handling CSR and environmental matters within firms
- ➔ Serving as facilitators on environmental issues in local governments, NGOs, etc.

Kashiwanoha velo taxis

The Kashiwanoha campus city area surrounding Kashiwanoha Station on the Tsukuba Express line will see a new form of transportation—the velo taxi—tried on its roads as of October this year. “Velo” means bicycle in Latin. Velo taxis are basically three-wheeled bicycles with roofs, developed in the German capital of Berlin in 1997 as a people- and eco-friendly means of transportation. They will not just supplement public transport like trains and buses, but are also expected to help address environmental issues and problems associated with a graying society, as well as stimulating the local economy. Kashiwanoha Park, the Chiba University campus and the University of Tokyo’s (Todai) Kashiwa campus have also been included within the trial area.



VELO TAXI in Kashiwanoha

Urban Design Center Kashiwanoha (UDCK)

UDCK was established in November 2006 to explore the possibilities for cities, the environment and lifestyles geared to a new era. Using Kashiwanoha as its field, the UDCK serves as a forum for discussing urban design and also provides support for field trials. Professor Takeru Kitazawa from Todai’s Graduate School of Frontier Sciences heads the center, while the UDCK steering committee draws members from Todai, Chiba University, Kashiwa City, the Tanaka Area Community Council, the Kashiwa Chamber of Commerce and Industry, the Metropolitan Intercity Railway Company and Mitsui Fudosan. The UDCK is home to the “UDCK Open College on Community Development” which trains urban design leaders, Todai’s Urban Space Design Studio, and K Salon, casual meeting of residents, business people and experts.



External view of Urban Design Center Kashiwanoha

Totsubo Gyms

Established as a collaborative effort between the Research Center for Total Life Health and Sports Sciences within Todai’s Graduate School of Frontier Sciences and Kashiwa City, each Totsubo Gym comprises a space of approximately 30m² containing various training machines for health workouts. The cognitive motor training machine developed by Todai Emeritus Professor Kando Kobayashi uses gentle motion to stimulate the muscles and the brain so that even elderly people can exercise safely. The first Totsubo Gym opened in October 2006 and seven were in operation as at May 2007, while in Phase II, 20 will be established to supplement the main gyms. Ultimately, 40 gyms are planned for the town.



A Totsubo Gym

Elements of the Kashiwanoha Campus City Project in action



Security cameras on telephone poles around Kashiwanoha Station

Independent movement support program

The specified non-profit organization Kashiwanoha Campus-city Information Technology Consortium (KACITEC), which Todai played a key role in establishing, seeks to research, develop and commercialize next-generation IT-based lifestyle and industry support systems through an organic industry-academia-government partnership. KACITEC has been conducting various field trials in the vicinity of Kashiwanoha Station. One of these is the independent mobility support program spearheaded by Professor Takashi Chikayama from Todai’s Graduate School of Frontier Sciences. Comprising five sub-projects, the program aims to realize a safe and secure urban environment ensuring universal design. Professor Chikayama hopes to build a security system using multi-camera tracking to constrain crime and provide 24-hour safety as people move around town.



On-demand bus experiment

On-demand bus system

On-demand buses are mass-transit buses that can be booked by passengers over the Web or their mobile phones, specifying where they want to board and what time they want to arrive at their destination. Users are immediately notified as to whether their reservations have been accepted. The field trials which Professor Hiroyuki Yamato from Todai’s Graduate School of Frontier Sciences conducted in Kashiwa and Unzen convinced him of the system’s commercial feasibility. In 2007, he looked at improving communication with passengers using mobile phones with GPS functions, aiming to make the system even more responsive to individual needs. With no need for fixed bus stops and reservations able to be made using voice recognition, this system is also convenient for elderly and physically disabled passengers.



TX Cycle Fiesta in Kashiwanoha Station area

Rental cycle system

Efforts are underway in the vicinity of Kashiwanoha Campus Station to highlight bicycle transportation as an essential element of town development. As part of the TX Cycle Fiesta held on 19 May 2007, Assistant Professor Eiji Hato from Todai’s Graduate School of Frontier Sciences held a workshop on cycle-based urban design. City residents, students, government officials, researchers and even high school students took part, coming up with various ideas on the necessary facilities for cycle-based urban design, cycle-friendly roads and a pleasant cycling environment. Concrete investigations are currently underway toward creating a Kashiwanoha cycle map and introducing a public bicycle system.



Taikan OKI

Professor
Institute of Industrial Science

The “Wisdom of Water” (Suntory) Corporate Sponsored Research Program was established in April 2008 by the University of Tokyo and Suntory Ltd. for education and research on “water.” This program aims to promote (1) structuring and delivering “Wisdom of Water,” (2) raising social concerns on water, and (3) resolving water-related problems and forming an affluent water environment.

The features of this program

“Wisdom of Water” (Suntory) Corporate Sponsored Research Program

are as follows: we cover socio-cultural aspects as well as natural science and expand our activity from scientific research to communication with society. The “Wisdom of Water” created by the

University of Tokyo and Suntory Ltd. will be indispensable “Wisdom” for the success of humanity in the twenty first century.

Major research topics of “Wisdom of Water”

Accumulating and delivering “Wisdom of Water”

01 Adaptation to hydrological cycle and water availability under population growth and climate change

02 Building and spreading a method of life cycle assessment (LCA) with respect to water

03 Delivering cutting edge knowledge on water through lecture services

Realizing water environment for health and culture

01 Science for forest conservation and headwater management

02 Monitoring and risk management of pollutants in urban water environments

03 Case studies toward the realization of integrated water resource management



Hiroko AKIYAMA

Professor
Program of Gerontological Research
Organization for Interdisciplinary
Research

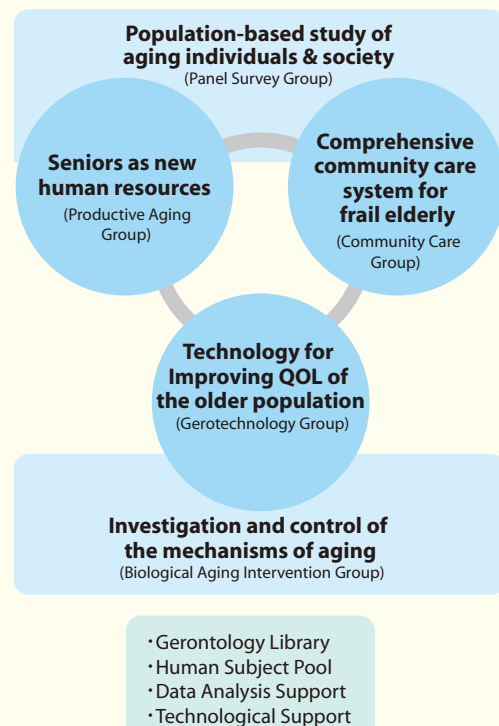
Gerontology is an interdisciplinary science with the goal of attaining a safe and active long-lived society. In the latter half of the 20th century, Japan attained a remarkable extension of life span and the world’s highest longevity. Now we face a dramatic increase of the old-old population (age 75+). During the next 20 years, this segment of the population is expected to double, resulting in an increase of 11 million old-olds. The current social institutions, consumer products and services, which were designed for a society dominated in number by younger people, can not adequately meet the needs of such a highly aged society. Population aging has become a major health, economical and social issue in Japan well in advance of the same situation arising in other countries. The issues affecting the aged society are multifaceted. Examples of problems include the increased ratio of dependent individuals (i.e., those who are no longer in the

Program of Gerontological Research

labor force), as well as the desperate need to organize health care for frail elderly and those suffering from dementia. On the other hand, elderly people could potentially be a social resource, both as a potential source of labor in the face of labor shortages in the near future and as a driving force for creating new silver industries.

Interdisciplinary collaboration is urgently needed to combine the knowledge from different academic fields to effectively grasp and solve the complex issues of the aged society. The Program of Gerontological Research was created under the President’s Office in 2006 by donations from three corporations: NISSAY, SECOM and Daiwa House. The Program aims to conduct interdisciplinary research and train young researchers who not only excel in their own academic specialties but also are capable of playing active roles in multiple areas of the aged society. The program will be expanded and renamed the Institute of Gerontology in April, 2009, and will serve as a core center for academic exchange in gerontology between Asian countries.

Research Program



Education Program

Researcher Education Program

1. Course work (certificate program)
2. Interdisciplinary research
3. Independent research support system
4. International activities support system

Career Path Support

- Research collaboration
- Symposia / seminars
- Internship



Akira MORITA

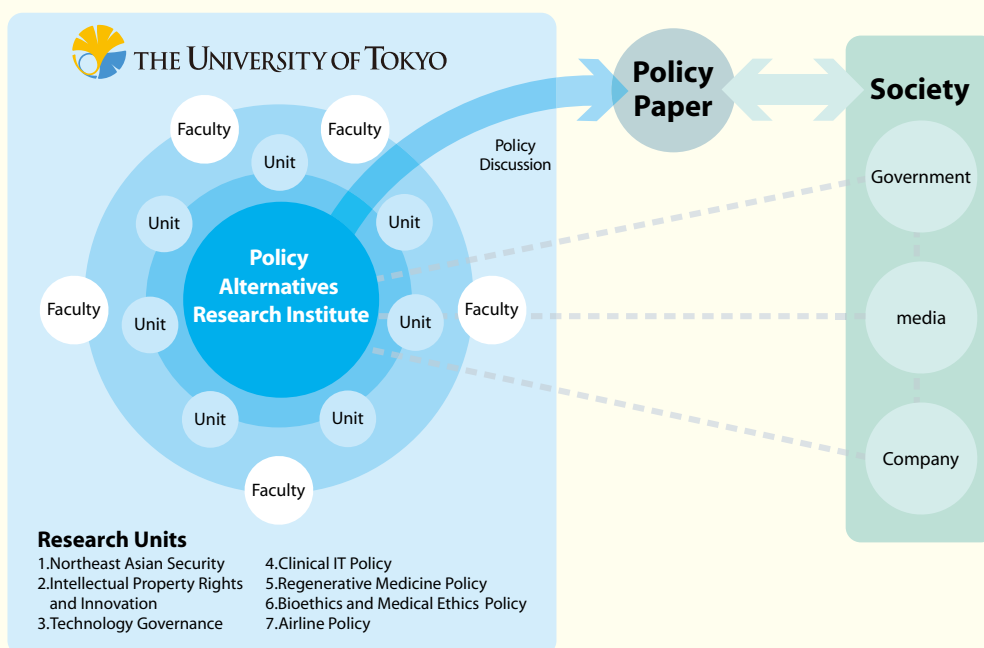
*Professor, Graduate School of Public Policy
Director, Policy Alternatives Research Institute*

In order to resolve the various social problems arising in the contemporary world, policy formulation utilizing the results of advanced research is required. Up to now, faculty members of the University of Tokyo have contributed to the process of policy making on an individual basis. But today, when universities are increasingly called upon to contribute to society at large, the University of Tokyo believes that making available the intellectual resources needed for policy formulation and articulating policy alternatives is one of the roles it should play. Thus, on July 8, 2008, the Todai Policy Alternatives Research Institute was established under the Office of the President. The institute is a small organization comprising just seven members, but as the hub for policy research on campus, it will act as an organization for disseminating policy alternatives

Todai Policy Alternatives Research Institute

to society, based on its own policy proposals as well as the ideas it gleans from the research results of a variety of other departments and institutions within the university. It also hopes to establish networks with government agencies, corporations, mass media, and other organizations outside the university, seeking a mutual exchange of ideas and the invigoration of policy studies. This

academic year it will inaugurate policy research units on security in Northeast Asia, intellectual property and innovation, technology governance, and healthcare policy. As its research progresses, it will share the results with society at large through a broad spectrum of media from published materials and its website to public symposiums and other events.



Shinichi ARAI

*Project Researcher
Integrated Research System for Sustainability Science (IR3S)*

As Japan prepared to host the G8 Hokkaido Toyako Summit in the summer of 2008, the leaders of thirty-five major universities from the G8 countries and six other nations came together for the G8 University Summit, convened in Sapporo, Hokkaido, from June 29 to July 1, 2008. They came to engage in scholarly and nonpartisan debate regarding the universities' responsibility to contribute to the achievement of global sustainability and the specific measures they need to undertake

G8 University Summit

to fulfill that responsibility. It signaled a historic attempt by the academic world to promote and contribute to an international undertaking. The G8 University Summit was organized around the theme of "global sustainability and the role of universities." Its outcome was an affirmation of the universities' role in achieving sustainability through research and educational efforts, including the creation of a global "network of networks" (NNs) linking the existing research networks, such as IR3S. Participants also pledged to work toward sustainability at the campus level. In addition to the foregoing, the Sapporo Sustainability Declaration adopted by the G8 University Summit called on leaders participating in

the G8 Hokkaido Toyako Summit to adopt scientifically appropriate policies to tackle climate change and other global problems. The declaration was submitted to then-Prime Minister Yasuo Fukuda by the University of Tokyo's President Komiyama, chairman of the G8 University Summit. Agreement has been reached to convene a second G8 University Summit in Italy, where the G8 Summit is scheduled to be held in 2009. At the University of Tokyo, we will be following up on the achievements of the G8 University Summit in our capacity as provisional secretariat for the aforementioned network of networks, as well as by pursuing our own sustainable campus initiative and other efforts consistent with the Sapporo Sustainability Declaration.

Komaba Active Learning Studio

KALS: In pursuit of the ideal educational space

One of the major problems facing modern university education in Japan is early specialization. To address this, the University of Tokyo is striving to enhance its liberal arts programs within the framework of the College of Arts and Sciences. This is the motivation behind the KALS initiative, with which Todai has created a new space for liberal arts education.



Takashi NAGATA

Professor, Graduate School of Arts and Sciences
Member, Komaba Organization for Educational Development (KOMED)

The Komaba Active Learning Studio (KALS) was established on Todai's Komaba campus in May 2007. Aimed at achieving Todai's goal of "ideal liberal arts education," KALS was created as a space for the practical application of new forms of education. While classrooms have traditionally been used in a lecture style featuring blackboards and notebooks, KALS is an education space that supports active learning. Students there engage in reading, critical writing, and debate, and they analyze, integrate, and evaluate data, information, images, and other forms of input that they then synthesize into a final output. Classes held at KALS also use collaborative learning "in situ" to encourage active class involvement by all students.

Consisting of a 140m² studio and a 70m² waiting room, KALS is equipped with innovative desks that can be easily moved and recombined to suit the style of the class. But the most important feature of KALS is the use of state-of-the-art information and communications technology (ICT) to optimize the results of active learning. Projector screens have been set up on all four walls so that lecture materials and students' work can be shared with everyone regardless of where they are sitting. The facility also has 40 tablet computers with wireless LAN connections for individual student use, supporting learning activities such as data searches, image viewing, simulations, critical writing, and "mind-mapping." This ICT-based active learning is designed to encourage students to work independently to sort

Advanced Education and Research

feature 3

The University of Tokyo, while continually pursuing the ideals of education, is at the same time equally committed to world-class research. The Komaba Active Learning Studio (KALS) and the Institute for the Physics and Mathematics of the Universe (IPMU) are two excellent examples of this commitment.

complex information, identify the key issues that need to be dealt with, and tackle the issues from various angles. The goal of this initiative is to foster human resources who can deal with issues from a broad perspective. For example, the Critical Writing Program has used KALS' ICT environment to implement real-time writing and peer review that improves the students' English academic writing ability. Other classes held in KALS include a contemporary society course using the rich store of visual materials in the NHK archives, and life science active learning that incorporates the results of recent research, such as protein data and molecular dynamics simulators. A joint education project conducted by the College of Arts and Sciences, the Center for Research and Development of Higher Education, and the Interfaculty Initiative in Information Studies, KALS epitomizes the ideal liberal arts education that Todai offers as a model to society. It also serves as a case study for the "Ideal Home for Education," a new classroom and educational complex planned for the Komaba campus.



Four-sided array of wireless projector screens

Wireless projector screens are set up on all four walls of the studio, with a different image able to be projected on each. Each screen can also be divided up into four, enabling the simultaneous display of work from up to 16 tablet PCs. This rich flow of information from multiple directions makes for a stimulating space.



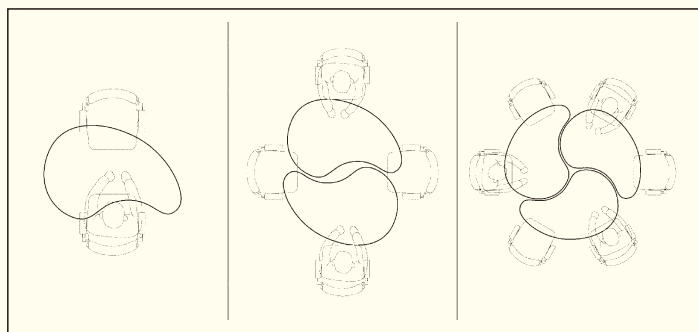
Smart glass

The wall of glass separating the waiting room space from the KALS studio can be made either transparent or opaque with the flick of a switch, enabling guests to freely observe classes without breaking the students' concentration.



Tablet PCs

As KALS provides each student with a tablet PC, classes can make optimal use of education software. The 40 Lenovo ThinkPad X60 Tablets are installed on caster-driven wagons so that the necessary number of PCs for each particular class can simply be pulled into the studio.



Comma-shaped tables

These uniquely shaped tables can be recombined easily to seat two to six people, enabling groupwork with the optimal group size. Casters allow the tables to be freely shifted around to create a more active space.



Electronic blackboard

The large screen at the front of the classroom is an interactive "glassboard." Instructors can operate their computers remotely by touching the glassboard with an active wand, enabling classes to be conducted extremely fluidly. The screen can of course also be used as an ordinary whiteboard.



Personal response systems

Students use keypads to answer problems and select options in response to PowerPoint presentations prepared in advance, and the results are shown on graphs in real time. The many potential applications for this device include stimulating groupwork and discussion and evaluating the students' learning.

Institute for the Physics and Mathematics of the Universe (IPMU)

Solving the big questions

The world's leading mathematicians, physicists and astronomers are gathering at the University of Tokyo as the IPMU pushes the boundaries of human knowledge to solve the most profound mysteries of the universe.



Hitoshi MURAYAMA
IPMU Director

Once again becoming a child staring up at the stars

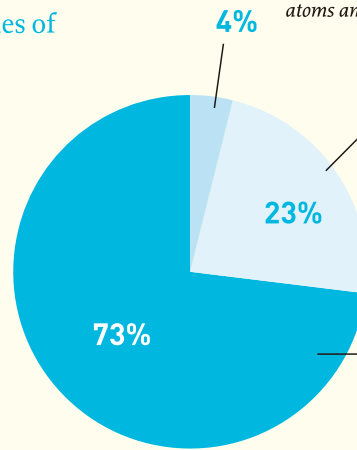
How did the universe begin? How will it end? What is it made of? What fundamental laws govern it? Why do we exist at all? The IPMU was established to answer the innocent questions that might be entertained by any child staring up into the night sky. Technological progress and the advance of theoretical frameworks have enabled us to come close to solving through the power of science mysteries that were previously restricted to the realm of philosophy, producing a succession of major discoveries completely overturning previous thinking. At the IPMU, we hope to proceed even further down this road. It was 1998 when the Super-Kamiokande experiment conducted by the Today's Institute for Cosmic Ray Research (ICRR) astonished the world by revealing that neutrinos have tiny but finite masses. As a result, we discovered that these tiny particles, as difficult to capture as ghosts, have a universal weight equivalent to all the stars put together. This breakthrough has enabled us gradually to determine the composition of the universe. In the same year, it was also reported that the expansion of the universe is picking up pace. According to Einstein, the speed of the universe's expansion is determined by the amount of energy in the universe. It was believed for some 70 years that as the universe expanded, the energy within would thin, slowing the pace of expansion. Accelerated expansion indicates the presence of energy that does not attenuate as the universe expands but instead comes pouring forth, and this is called "dark energy." To discover the nature of this dark energy, the IPMU plans to attach a new camera to the Subaru telescope at the National

Astronomical Observatory of Japan to measure the precise speed at which the energy emerges. If dark energy is emerging too rapidly, the expansion of the universe too will eventually become infinitely fast, and the universe itself will come to an end. The question of whether or not there is an end to the universe is a fascinating one.

It was also long believed that the universe was made up of the same atoms of which we are composed, but in 2003 we confirmed that in fact 80 percent of the universe comprises not atoms but rather "dark matter." Dark matter is

Ordinary matter (atoms and molecules)

The stars and galaxies we observe in space, people and all living things are composed of atoms and molecules.

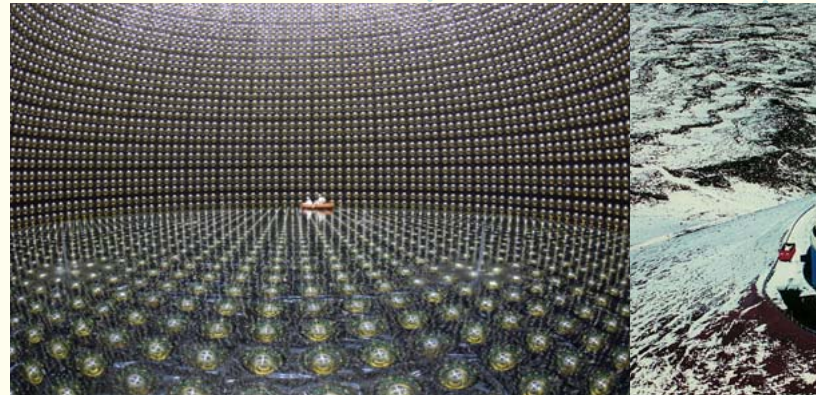


Dark matter

Because it neither emits, reflects nor absorbs light, dark matter is difficult to observe, but without this matter, galaxies could not link together to form a galactic system.

Dark energy

This is the energy of space itself, and is accelerating the expansion of the universe.



Super-Kamiokande

Seeking to understand the nature of neutrinos and investigate their role in ordinary matter, this experiment looks into the origin of matter. Neutrinos coming from distant space are observed in order to understand the evolution of the universe. The experiment also looks at the proton collapse phenomenon predicted by unified field theory.

thought to consist of unknown particles that emerged immediately after the Big Bang, with this major discovery thus potentially holding the key to the beginning of the universe. These particles are even more ghostlike than neutrinos; some 100 million particles of dark matter pass through our bodies every second without us feeling them at all. No matter how precise the device used, the earth's surface is too "noisy" and we can't hear the very faint "sound" of dark matter. To understand the nature of dark matter, we need to go underground where it is quiet and really strain our

The five questions

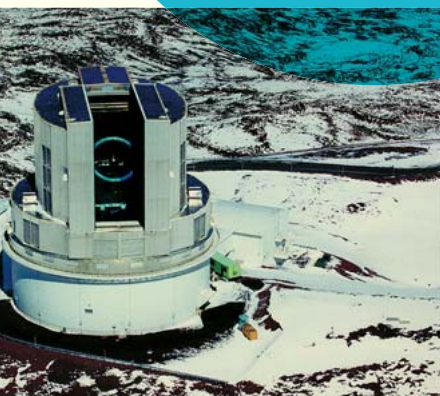
How did the universe begin?

What is it made of?

What is its fate?

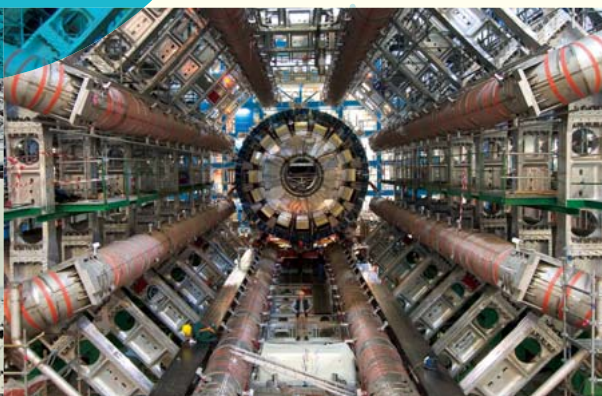
What fundamental laws govern it?

Why do we exist at all?



Subaru telescope

By observing distant galaxies, the Subaru telescope enables us to measure the three-dimensional large-scale structure of the universe. Using these results, we aim to determine the distribution of the dark matter intrinsic to galaxy cohesion, and get down to the nature of the dark energy that makes up 73 percent of the universe.



LHC

The Large Hadron Collider (LHC) is the world's highest-energy particle accelerator. It aims to recreate the Big Bang within a laboratory setting to precisely observe conditions around that time, exploring unknown phenomena such as the "sparticles" that may make up dark matter. An IPMU team is conducting the phenomenological data analysis.

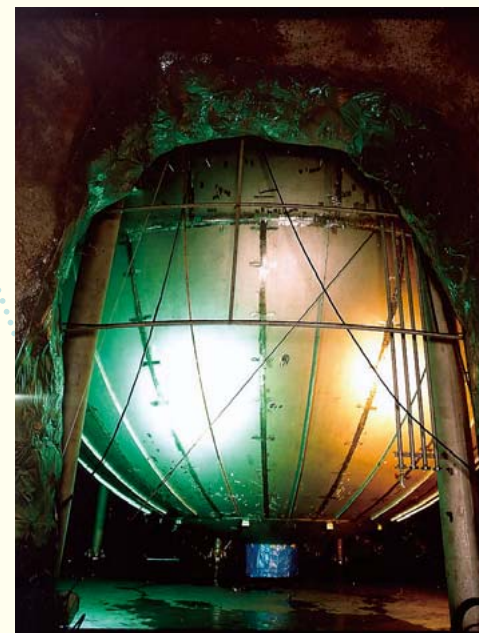
ears. The IPMU plans to set up a new device called the XMASS at the Kamioka Mine in Gifu Prefecture in conjunction with the ICRR to listen closely for the faint sound of dark matter. A massive particle accelerator, the Large Hadron Collider (LHC), was also started up in Europe in September 2008. Roughly the scale of the Yamanote line, the LHC is intended to recreate the Big Bang in a laboratory setting and form dark matter. The IPMU is developing methods to extract the maximum amount of information from the LHC data. In addition, our existence in the

universe hinges on the disappearance of the antimatter that was undoubtedly created by the Big Bang. At the IPMU, we are working in conjunction with the KamLAND experiment at Tohoku University to try to discover how antimatter became matter.

It is no easy task to take on the universe's biggest mysteries, nor is there any guarantee that we will find the answers. However, it is the researcher's great good fortune to take on the questions that have haunted the human race since its beginnings. Please keep watching this space!

XMASS

The XMASS is a next-generation detector designed to directly capture the dark matter which is thought to fill our Milky Way galaxy. Exploiting a degree of sensitivity far beyond previous detectors, the XMASS captures and measures dark matter to try to unravel its mystery.



KamLAND

The KamLAND experiment aims at studying the nature of neutrinos and their role in ordinary matter, to identify the origin of matter. It also observes neutrinos that have come from the Earth and the Sun to explore the interior of these stars.

What is the Institute for the Physics and Mathematics of the Universe?

A Today cross-disciplinary research organization, the IPMU was established in 2007 as part of the Ministry of Education, Culture, Sports, Science and Technology (MEXT) World Premier International Research Center Initiative (WPI). Spearheaded by a young, energetic and innovative leader, director Hitoshi Murayama, the IPMU aims to bring together around 200 of the world's leading researchers, and is steadily growing into an extraordinarily dynamic research center. The key research theme is, of course, "unraveling the mysteries of the universe," which scientists from various disciplines, including mathematics, theoretical physics, experimental physics and astronomy, are working together across disciplinary borders to address. This research center is a strong candidate for producing Nobel prizewinning discoveries and new theories. With the IPMU anticipated to become the hub of 21st century space research, expectations of its research program are high indeed.



Tansei: Today we'd like you to look back over the events of your term as president with the aim of "summing up the Komiyama era," and also tell us what words of advice you would offer the incoming president. To start with, what was your reaction when you were selected to serve as the University of Tokyo's twenty-eighth president?

Komiyama: There was a press conference the day after I was designated as incoming president. I had made up my mind to accept the position, but I hadn't gone so far as to prepare for the press conference, so when a reporter asked me to lay out my goals for the university in a word or two, I blurted out the first thing that came to mind: "To make it the best university in the world." In retrospect, it seems to me that precisely because I was caught off guard, my words were true to my innermost feelings. At that moment what I was thinking deep down bobbed to the surface.

Tansei: How about the transition period, from that time until you took office in April 2005?

Komiyama: I had six months to prepare, but my first job was to choose the seven new managing directors and executive vice presidents who would be working with me. It's a task comparable to forming a cabinet, so it's important

to make appointments that will satisfy the entire university community. One needs to strike a balance between people with humanities backgrounds and those with science backgrounds. But most important, they had to be people who shared my basic outlook. After a good deal of soul-searching, I chose my nominees and held a conference to announce them. My actual work as president began with that briefing.

The Fast-Track Action Plan

Tansei: In addition to searching for the right managing directors and executive vice-presidents during those six months, I understand you were also planning various initiatives that were later to be codified as the Action Plan.

Komiyama: I hadn't originally intended to draw up an action plan to tell the truth. The management of a university involves a lot of different policies carried out in many disparate areas, from research and education to international relations and finances. When I first took office I had all kinds of ideas in this area and that, and each time I came up with one I would bring it up with the managing directors or my staff. But you know, we would forget them—me as well as the people I spoke to! Finally I thought, the way it's going now, I can suggest ideas all I want, but nobody remembers

them. Let's get them down on paper. That was a month after I took office. The end result was the Action Plan.

Tansei: So that's how it happened!

Komiyama: It began as a kind of memo. But then, we didn't stop until it had become an action plan. The big problem was how to get that plan officialized.

Tansei: When you talk about officializing things at the university, I assume that means getting them approved at the deans and directors meeting, the faculty council for each faculty and graduate school, and so forth?

Komiyama: That's right. If you do it that way, it takes forever for things to be approved by the university as a whole. Right around that time, the vice-chancellor of the University of Oxford, John Hood, was drawing up the same sort of action plan, and his plan took three years to be officially adopted. He would present it to the University Council and have to go back and revise it, and after numerous setbacks, he finally got everyone to agree on it. I could well imagine that the same thing would happen to my plan, so I told the managing directors and vice presidents, "We can deliberate it, but I want to move ahead without officializing it." But they were not comfortable with that idea. Finally, the directors suggested that we adopt it through an "executive decision." An executive decision basically means that I issue a statement, and I'm free to make any sort of statement I like. Of course, the plan was deliberated. I submitted it twice for deliberation at the deans and directors meeting and asked for their opinions. The policies were proposed and discussed, but in the end we adopted the plan by executive decision without going through all the official channels. These days I'm inclined to view this as the ideal management style for a university.

Interview

President Komiyama Sums Up Four Years of Progress

Interviewers:

Hiroyuki Takeda, Chairperson, Public Relations Committee
Keiko Hongo, Tansei Advisor

Long-Term Benefits of “Big Picture” Lectures

Tansei: In addition to the Action Plan, what other steps taken during your first year stand out in your mind?

Komiyama: The focus on the Komaba and Kashiwa campuses. The focus on Komaba had to do with beefing up general education. I’m a researcher in the field of chemical engineering, but for years I wanted to integrate bioscience into my research. In the end, I wasn’t able to do it. At some point the amount one needs to know in the area of bioscience increased exponentially, and it was impossible to catch up. I think there are a lot of researchers out there in the same position I was in. The key to resolving the dilemma is general education. When a university has a cutting-edge general-education program, researchers know that the survey courses in fields other than their own are at the cutting edge. That’s what I mean by beefing up general education. This thinking also ties in with the interdisciplinary Global Focus on Knowledge (GFK) lecture series.

Tansei: The first GFK lectures were offered in the winter semester of 2005, right?

Komiyama: Yes, and as of this time we’ve had lectures on ten different themes. I don’t think all of them were perfect as GFK lectures, but I think it’s important to continue the program and fix the problems as we go along. We’re also using IT to record and archive the GFK lectures.

Tansei: You mentioned as one of the initiatives in your first year “the focus on the Komaba and Kashiwa campuses.” What was the focus on Kashiwa about?

Komiyama: Construction of the Kashiwa campus was already under way when I became president. After I took office, I incorporated the Kashiwa International Campus

Project in the Action Plan. The idea is to attract large numbers of students and researchers not only from inside Japan but also from overseas and break new ground in education and research. But more was needed to energize the campus at Kashiwa. That’s why we came up with the idea of Kashiwanoha International Campus Town Initiative. We want to use Kashiwa Campus and Kashiwanoha Campus Town to experiment with new living models with the potential to solve problems relating to the environment, the aging of our society, and so forth. This is a response to the demands of our times. The United States led the world during the second half of the twentieth century, and the destination toward which it was leading us was the world of Hollywood movies—an affluent world where people consume energy as if there were an endless supply. But the realization that the earth is “shrinking” has put an end to all that. Right now the world is watching to see which nation will produce a viable new model for living. This is a great opportunity for Japan.

Tansei: When researchers look back on the events of your administration, I think what stands out the most is the startup of multiple interdisciplinary research centers.

Komiyama: Since the launch of the Integrated Research System for Sustainability Science, they’ve been springing up one after the other. Among the newer ones are the Institute for the Physics and Mathematics of the Universe, the Ocean Alliance, the Information and Robot Technology Research Initiative, and the Todai Policy Alternative Research Institute. As of this time we have fifteen interdisciplinary research centers. And integrated research projects of all kinds have been taking shape under the Organization

for Interdisciplinary Research Projects as well. I talk a lot about “Autonomous and Decentralized yet Cooperative Systems.” It’s okay for 95 percent of the people at the university to be working in an autonomous, distributed manner. If just 5 percent of them create mechanisms for cooperative systems, the university as a whole will improve.

Building a Worldwide Network

Tansei: If the first year was focused on Kashiwa and Komaba, what would you say was the focus of the second and third years?

Komiyama: In the second year the most significant progress was in the field of “internationalization.” Since internationalizing the university involves building networks all over the world, it requires patient, sustained effort. I did all sorts of things. In my second year I attended the Davos meeting (the meeting of the World Economic Forum held each January in Davos, Switzerland). That was the first of three consecutive meetings I participated in. I was invited to take part in the Global University Leaders Forum, held in conjunction with the Davos meeting. Yale University President Richard Levin chaired the forum as a whole, and I was asked to chair one of the sessions. In retrospect I realize that many of the internationalization initiatives were things I attended in an individual capacity. But more important than my participation was my acting as chair.

Tansei: The President’s Council is just such a forum, isn’t it?

Komiyama: The President’s Council was in fact established by the University of Tokyo, or I guess you might say by me personally. I set it up for the purpose of soliciting guidance and support for management of our university from some of the world’s most

distinguished figures in higher education. All the participants are people of tremendous global stature. I think the network I've forged with these people is going to be a big asset in terms of making the University of Tokyo a truly international university. Still, since I created it for my own purposes as a single individual president, we have to think about how to pass it down. As for the university as a whole, in addition to existing networks, the International Alliance of Research Universities (IARU) was launched a few years ago. The IARU is a large federation of ten universities that is very important to the University of Tokyo. During 2007 and 2008, we boosted the number of our overseas outposts to 141. That said, most of these are still little more than a name on a door, so the question going forward is how to leverage these outposts to catalyze interaction among researchers and students. I think we need to work harder in particular on sending Japanese students overseas.

Tansei: Could you talk to us about collaboration with industry and other important community-partnership initiatives?

Komiyama: We've made a lot of progress on collaboration with industry during my term. We set up the Division of University Corporate Relations, which has drawn up various rules for such collaboration. Lately there's been a spate of research projects carried out in collaboration with industry. We've begun to provide support for venture businesses as well. We have a program called the Entrepreneur Dojo, which recruits and provides training to undergraduate and graduate students who want to be entrepreneurs. Some of the program's graduates have already

started up their own businesses.

Tansei: It really sounds like the beginning of a whole new relationship between the university and the wider community.

Komiyama: And we've also taken big steps toward making the university barrier-free and ensuring equal opportunity for women. We've been focusing on hiring persons with disabilities, using sign-language interpreters at our matriculation ceremonies, and so forth. And in terms of opportunities for women, even as we speak the university is moving quickly to set up day-care facilities on each campus. Meanwhile, the Todai Redesigning Educational Environment (TREE) Project is making progress in efforts to "unleash knowledge" with the help of IT, including UT OpenCourseWare to make course materials available on the internet, TODAI.TV to put videos of classroom lectures also on the internet, and UTnav.jp to alert people of educational events by mobile phone.

A Duty to Provide Financial Aid

Tansei: In 2008 the university began offering financial assistance to undergraduates and to graduate students in the doctoral Program. What are your feelings on this subject?

Komiyama: I have very strong feelings about providing financial aid to undergraduate and graduate students. And these feelings are shared by our entire faculty. We have students in their late twenties holding part-time jobs to pay their tuition while they work tirelessly on their graduate studies or research. They're committed to continuing with their studies knowing full well that others in their class joined foreign firms after graduation and are now earning high salaries. Initially we made the decision to

provide financial aid to doctoral students. Then we decided to assist undergraduates by waiving tuition for students whose families earn less than 4 million yen a year before taxes. The impetus for the undergraduate aid program was a proposal from the faculty of the College of Arts and Sciences. The financial aid issue is tied up with the question of who should pay the cost of higher education. In Japan the education consumers pay a certain amount, but the state also provides subsidies to higher education institutions. In other words, some of the cost is borne by the nation as a whole.

Tansei: But there are conflicting opinions about that, with some people maintaining the beneficiary should pay.

Komiyama: I think the argument that students should be educated at their own expense under the "beneficiary pays" principle is misguided. The recipient is not the only beneficiary of higher education. Training outstanding students and researchers benefits the entire community, the entire nation, the entire world. Unless we as a nation resolve to support and protect higher education, we'll lose the ability to train the outstanding talent we need to support Japan in the future. So I intend to argue vigorously against the idea that the students should pay the cost of education as the beneficiaries.

"Be a School that Takes Action"

Tansei: I'm afraid we're running out of time, so before we finish, could you tell us in your own words how you would sum up your achievement today, three and a half years after the adoption of the Action Plan?

Komiyama: In a few words, I would say I succeeded in establishing the framework. There is much that remains to be done, but



I put in place the basic framework for doing it. The university's greatest asset is its 5,000 researchers. The overarching theme of my administration has been creating mechanisms for "cooperative systems" to boost those researchers' "autonomous and decentralized" activities without destroying the frameworks already in place. But there's still a need for many more cooperative mechanisms.

Tansei: In an interview you gave shortly after you took office, you vowed to create a new model for the post of president. Looking back over the full course of your administration, one gets the feeling that a new presidential model for the University of Tokyo has fully emerged, from the adoption of the Action Plan to the transfer of authority to the next administration.

Komiyama: Well, I don't know whether a completely new model for the post of president has fully emerged. I just felt all along that this was what I had to do. As for the transfer, in terms of substance, anyone will be able to see what has been passed on by comparing our action plans. Everything is out in the open. So, in a sense power is being transferred to the entire university community.

Tansei: Finally, as the twenty-eighth president of the University of Tokyo, what advice would you like to impart to your successor?

Komiyama: When I first announced the Action Plan, many people asked me, "What if you can't do it?" If you can't do it, then it's back to the drawing board. What's missing in Japan today is the determination to take on new challenges. That goes for the university, too. The University of Tokyo is now a semi-independent "university corporation," so we might as well take advantage of that status and do what we think is right without being afraid to risk failure. From the Meiji era on Japan has been

at the forefront of the industrializing countries that were in hot pursuit of the Western powers. From the standpoint of the Western powers that were being pursued, it was a frightening situation. After all, their pursuers were a people with clear national goals, in no way inferior to Western workers in their individual abilities, who would work for one-twentieth of the pay. There was no way Japan could lose. Now Japan is in the same position the Western powers were in then. The countries that are close on our heels now are real powerhouses. So, what is Japan to do? We really have only two options: give up and scale back or develop a new social model. That is why I say, "Let Japan offer the world a new social model. And let the University of Tokyo create a social model to which Japan can aspire." I want the university, by taking action, to present a viable model to the community that can then spread through the whole world. If the University of Tokyo can transform itself into a sustainable campus under the lead of the Todai Sustainable Campus Project Office, and if our plans for an academic city in Kashiwa come to fruition, these will provide new social models. At the G8 University Summit held in the summer of 2008, I urged the people there to make each university a school that takes action. And by and large, the presidents of the world's most prestigious universities agreed with me. That convinced me that this university model is going to be the de facto standard for the twenty-first century. So, my final admonition to the University of Tokyo as twenty-eighth president is, "Be a school that takes action and moves our society forward." And those are the words I would like to impart to the next president of the university.

[INTERVIEW CONDUCTED JULY 28, 2008, IN THE OFFICE OF THE PRESIDENT, THE UNIVERSITY OF TOKYO.]



Hiroshi KOMIYAMA

Born in 1944. Graduated from the University of Tokyo Faculty of Engineering in 1967. Completed the doctoral program at the University of Tokyo Graduate School of Engineering in 1972; received his doctorate in Engineering. Was appointed associate professor at the University of Tokyo Faculty of Engineering in 1981 and became full professor in 1988. Was dean of the Graduate School of Engineering from 2000 to 2002. Was named vice-president in 2003 and managing director and executive vice-president in 2004. In April 2005 Dr. Komiyama took office as the twenty-eighth president of the University of Tokyo.



Hiroyuki TAKEDA

Born in 1958. Graduated from the University of Tokyo Faculty of Science in 1982; later received his doctoral degree in science. Appointed professor at the National Institute of Genetics in 1999 and professor at the University of Tokyo Graduate School of Science in 2001.



Keiko HONGO

Born in 1960. Graduated from the University of Tokyo Faculty of Letters in 1984. Completed coursework for the doctoral course of the University of Tokyo Graduate School of Humanities and Sociology and withdrew from the university. Later received her doctorate in literature. Appointed assistant at the University of Tokyo Historiographical Institute in 1987 and associate professor at the Institute in 1999.

Since 2000, the University of Tokyo (Todai) has been holding the UT Forum (University of Tokyo Forums) in partnership with distinguished universities and research institutions overseas for the purpose of presenting some of the university's latest research achievements and providing opportunities for exchange and interaction with researchers to expand our international role. Previously, successful forums were held in the United States (Boston and Silicon Valley), Singapore, Sweden, and the People's

Republic of China.

Most recently the sixth such event, UT Forum 2007 in Seoul, was held on June 25 and 26, 2007, at Seoul National University (SNU) and Korea University (KU).

At SNU, forums were held in the two areas of "Humanities" and "Electrical Engineering and Electronics," drawing about 120 and 150 participants respectively. At KU, a forum in the field of "Education" was held, with about 150 participants in attendance. Corresponding student forums in

the three areas were also held at both universities, and both faculty and student events were concluded successfully. Attending from Todai were President Hiroshi Komiyama, Managing Director and Executive Vice President Makoto Asashima, and Kazuhiko Takeuchi, Vice President for International Relations, as well as 21 faculty members and 37 students from 10 departments. All used the opportunity for meaningful academic and personal exchange with the faculty and students of SNU and KU.

UT Forum



in Seoul

The University of Tokyo Held the sixth UT Forum at Seoul National University and Korea University in Seoul, South Korea, on June 25 and 26, 2007.

We report on the two days of proceedings.

[Electrical Engineering and Electronics Forum]

UT-SNU Forum: Electrical Engineering and Electronics for Quality Life and Society

Todai's Department of Electrical Engineering and Information Systems is working to build a society that offers safety, security and a high quality of life in the 21st-century society. Under the 21st Century COE Program, we are engaged in two new research and education projects that straddle the systems, devices, and materials domains of engineering: the System Electronics Project and the Nano-electronics Project.

This concept of "Secure-Life Electronics" — electronics as a means to safety and security for individuals and society — was the theme of the electrical engineering and electronics forum held on Monday

June 25 at the SNU's Building 39 B-103 Conference room with more than 150 participants in attendance. Following introductory remarks by Todai President Hiroshi Komiyama and SNU President Lee Jang-Moo, Kazuo Hotate, Vice Dean of the Graduate School of Engineering, Todai, gave a presentation on the Global COE Program, which was recently adopted to succeed the university's 21st Century COE Program. This was followed by 12 presentations on subthemes (below) delivered by six faculty members from Todai and six from SNU. The session ended with closing remarks by Sul Seung-Ki, Vice Dean of the SNU College of Engineering for

Student Affairs.

In their presentations faculty members from both universities provided lucid explanations of the latest technological advances in their respective fields: Professor Kazuo Hotate and Associate Professor Park Nam-Kyoo on sensors and sensing technology; Professors Shuichi Sakai, Tadashi Shibata, Shin Heon-Shik, and Shin Yeong-Gil on the information transmission and processing technology whereby sensing data is transmitted, processed, and analyzed; Professors Akihiko Yokoyama, Yoichi Hori, Moon Seung-II, and Sul Seung-Ki on the energy, environmental, and actuation technology by which the

results of information analysis are fed back into society; and finally, Professors Yasuhiko Arakawa and Lee Byoung-Ho on the device and material technology needed to enhance the functionality of all the foregoing technologies. With Japan and South Korea locked in intense R&D competition in the electronics field, it was extremely valuable to have the faculty of these two top-tier research and teaching universities engage in wide-ranging discussion on the innovative elemental technologies of the future and the development of new systems technologies.

About Seoul National University



Founded in 1946, SNU was the Republic of Korea's first national university. Its Yeongeon and Gwanak campuses, both inside the Seoul city limits, are home to 16 undergraduate colleges covering a wide range of fields in the humanities, sciences, and arts, as well as seven graduate and professional graduate schools and two university hospitals. With a student body of approximately 14,000 undergraduates and 9,200 graduates and a faculty of 2,500 (as of 2007), SNU is recognized as one of Korea's top universities and has earned a reputation for excellence worldwide.

About Korea University



Founded as Bosung College in 1905, KU was established as a comprehensive university in 1946. With its main campus situated in the Seongbuk district of the Special City of Seoul, Korea University is regarded as one of the top private universities in the Republic of Korea. Today (2007) it comprises 19 undergraduate colleges and 18 graduate schools in a wide range of disciplines spanning the humanities, social sciences, and natural sciences. With a student body of roughly 35,000 (including about 9,000 graduate students) and a faculty 4,000 strong, Korea University is actively involved in exchange with other universities around the world.

[Humanities Forum]

UT-SNU Forum: Future Directions in the Humanities: Methods and Practice

The humanities session of the UT-SNU Forum 2007, "Future Directions in the Humanities – Methods and Practice" was held on Monday, June 25 at SNU's Hoam Faculty House Convention Center. The forum took the form of research presentations by University of Tokyo faculty members, each followed by comments from a member of the SNU faculty and discussion by forum participants. The forum began at 9:00 am with prefatory remarks by Kazuhiko Takeuchi, Vice President for International Relations, Todai, followed by a welcome address by Lee Tea-Jin, Dean of College of Humanities, SNU. The presenters, topics, and commentators were as follows:

(1) Hiroshi Ando (Graduate School of Humanities and Sociology), "The

Essence of the Modern Novel - The Performability of Novels"—Kwon Young-Min (College of Humanities)
 (2) Motoyuki Shibata (Graduate School of Humanities and Sociology), "What does it mean to think about modern literature transcending one country, one language literary research?"—Park Sung-Chang (College of Humanities)
 (3) Masashi Haneda (Institute of Oriental Culture), "Creation of the Islamic World and new World History, the possibilities for a world history transcending regions and states."—Yi Eun-Jeong (College of Humanities)
 (4) Nobuhiro Shiba (Graduate School of Arts and Sciences), "Beyond National History: The movement of the Balkan States to understand history in terms of regions — The problems of dividing history in terms of Japanese History, East European History, Western History."—Ahn Byung-Jik (College of Humanities)
 (5) Hiroshi Watanabe (Graduate Schools for Law and Politics),

"Civilization' and the Confucian Concept of 'Heaven's Way'"—Keum Jang-Tae (College of Humanities)
 (6) Masaki Ichinose (Graduate School of Humanities and Sociology), "A Conflict between Individual and Person: An Enquiry concerning a Pitfall that the Modern Concept of Autonomous Man Falls into and an Extrication from it from a Viewpoint of Criminal Responsibility"—Kim Do-Kyoon (College of Law)

The forum ended at 4:30 pm with remarks by Song Ho-Keun, Dean of International Affairs at SNU, who offered his overall impressions of the forum, and closing remarks by University of Tokyo President Hiroshi Komiyama. Despite being held during summer break, the forum attracted a large number of participants, especially faculty members and graduate students in the College of Humanities, and featured lively presentations and vigorous debate on common issues in the humanities in Japan and Korea.

[Education Forum]

UT-KU Forum: University Education in the Midst of Globalization

An education forum on the theme of "University Education in the Midst of Globalization" was held on Tuesday, June 26 at KU's Memorial Hall. The University of Tokyo President Hiroshi Komiyama and Korea University President Han Sung-Joo delivered opening remarks, after which nine presentations were given in three sub-sessions: "The University in the Midst of Globalization," "The Future of the Humanities and Social Sciences," and "The Outlook for University Education." These were followed by a summative panel discussion. From the University of Tokyo, presentations were given by Managing Director and Executive

Vice-President Makoto Asashima and Professors Motohisa Kaneko, Yoichi Kibata, Masayuki Kobayashi, Kenji Sato, and Kazuhisa Takahashi. The Korean presenters were Korea University Professors Yoon Jea-Min, Choi Kwan, Han Yong-Un, and Lee Nam-Ho, as well as Professor Ko Byung-Hun of SungKongHoe University and Professor Woo Jea-Chang of Mokpo National University.

Globalization has had an impact on many aspects of university education, including the movement and interaction of exchange students and professors, curriculum, and teaching methods. Reformulating university education

in the context of globalization is a priority shared by educational institutions around the world. The forum raised a host of common issues relating in particular to language of instruction, teaching methods, and the future of humanities/social sciences and liberal arts education. For Japanese and Korean universities, which find themselves in similar circumstances, to come together to deliberate common issues and trade opinions is a highly meaningful exercise. The discussion also touched on the universities' fundamental approach to globalization, including debate over whether universities should be

looking on globalization as a threat, or approaching it positively, as an opportunity.

Altogether about 150 people took part in the forum, and the presentations and commentary stimulated a lively exchange of views and comments from the floor. Finally, Today's Managing Director and Executive Vice President Makoto Asashima and KU's Vice President Shim Kwang-Sook delivered closing remarks, and the forum came to an end with promises to pursue further exchange and contact between Japanese and Korean universities.

Behind the Scenes in China, the Factory of the World



**Tomoo
MARUKAWA**

Professor, Institute of Social Sciences

<http://web.iss.u-tokyo.ac.jp/~marukawa/indexeng.html>

China's fast-growing industrial economy may seem at first glance to be following in Japan's footsteps, but Chinese industry differs from Japanese industry in key respects. Is it possible that Chinese industry is moving in a completely different direction?

It is widely assumed—not only by the average layperson but by economists as well—that the way industrially advanced countries look today is the way developing countries will look at some point in the future. As someone who has conducted various studies of Chinese industry over the years, I too have tended to assume that the characteristics that distinguish it from Japanese industry are indicative of an earlier stage of development, and that China's industries will come to resemble Japan's as the Chinese economy develops. But around the beginning of this century, I began to harbor the suspicion that Chinese industry was heading in a completely different direction.

The mobile phone industry is a prime example. Japanese companies have for some time prided themselves on leading the world in mobile phone technology. True enough, cell phones that allow one to watch television, position oneself geographically, and transfer money electronically are already taken for granted in Japan, although they are unheard of elsewhere. But lately some

in the Japanese business community have mockingly compared Japan's mobile phone industry to the Galapagos Islands, where new and strange species evolved in complete isolation. Japan's mobile phone industry assumed it was leading the world because its cell phones had evolved along a unique path seen nowhere else in the world. But when it glanced back, it realized that no one was following.

China's mobile phone industry is the polar opposite. Unlike in Japan, where the telecommunications companies exert tight control over the industry,

China's manufacturers are free to make and market cell phones as they choose. As a result, countless obscure little companies manufacture cell phones without official permits or licenses. This so-called black market accounts for the sale of more than 30 million phones annually. Some of these are even exported overseas.

On the one hand, we have Japan, which has evolved in a unique direction under the tight control of its telecom firms. On the other hand we have China, where the manufacturers do as they please. Can this difference be explained simply in terms of the countries' developmental stages or income levels? I doubt it. It seems to me more likely that it reflects fundamental social and cultural differences between Japan and China.

Before trying to elucidate those differences, however, it seems to me that the first step is to examine other industries to determine whether they reveal the same distinguishing features we have seen in the mobile phone business. Let's take the auto industry. In Japan a few big automakers exercise strong leadership and work in close cooperation with

parts manufacturers in developing and producing automobiles. Chinese automakers put new products on the market quickly by relying on foreign companies for things like engines, design, and even safety testing. The difference between Japan's auto industry, characterized by a few established, vertically integrated companies, and China's, where a clear division of labor between companies allows new businesses to enter the market with relative ease, parallels the difference between the countries' mobile phone industries in some ways. In this case, however, Japan has not isolated itself internationally, nor has China succeeded on the world market. In solar cells, the Japanese long led the world in both technology and production volume, but in the past few years the Chinese industry has expanded rapidly, overtaking Japan in production in 2007. While Japanese companies have stressed the development of new technologies, China's have preferred to expand their production capacity as quickly as possible by purchasing production equipment from elsewhere. Although targeting the same markets (Europe and Japan), the behavior of Japanese and Chinese companies could hardly be more different.

I imagine there are many comparable cases yet to be identified. Moreover, I am convinced that the key to such differences lies not in the level of industrial development but in culture, which is reflected to one degree or another in the structure of a nation's industry.



At work on product development in China's mobile phone industry



Pudong industrial district in Shanghai

In developing this automobile, the Chinese manufacturer contracted with a Japanese maker (Mitsubishi) for the engine, an Italian firm for the design, and a British company for safety testing.



Is a Mouse's Fear of Cats "Hard-wired"?

New findings tie certain neural circuits to the innate aversive response triggered by odors

When a mouse smells a cat, it gets afraid and runs away. But our genetically engineered mouse showed absolutely no fear of a cat's smell. It turns out that the mouse's fear of a cat's smell is an innate attribute.

When a wild-type mouse—the variety that generally exists in nature—smells a cat, it feels fear and either freezes or runs away. Most people simply take it for granted that mice are afraid of cats, but elucidating the scientific mechanism that causes the brain to react with fear is no easy matter. Our team used genetic engineering to create a mutant mouse that could smell a natural predator but was unable to associate the odor with danger (see photo). This mouse taught us that the fear of a cat's odor is an innate, genetically hard-wired response in mice. Scent molecules are detected first by olfactory receptor neurons in the nasal cavity. On the tips of these neurons, are molecules called olfactory receptors, which catch the scent molecules. When the scent molecule binds to the olfactory receptor, it excites the olfactory neuron to send an electric impulse. This electric impulse is transmitted to the brain's olfactory bulb, where it activates structures called glomeruli. Scientists believe that the brain interprets the information from the scent molecules via the graphic information created by the pattern of activated glomeruli, called a "odor map" (see diagram). Until recently, though, no one understood the mechanism by which the brain interprets the information from the odor map and responds with a particular emotion or behavior. We genetically engineered a mouse that was ingeniously designed to produce diphtheria toxin inside nerve cells within the neural circuits that process olfactory information—but only the cells we wanted to eliminate. The diphtheria toxin killed those cells, thus removing them without directly affecting other tissues in the brain or body. This new experimental technique has made it possible to study how a mammal's

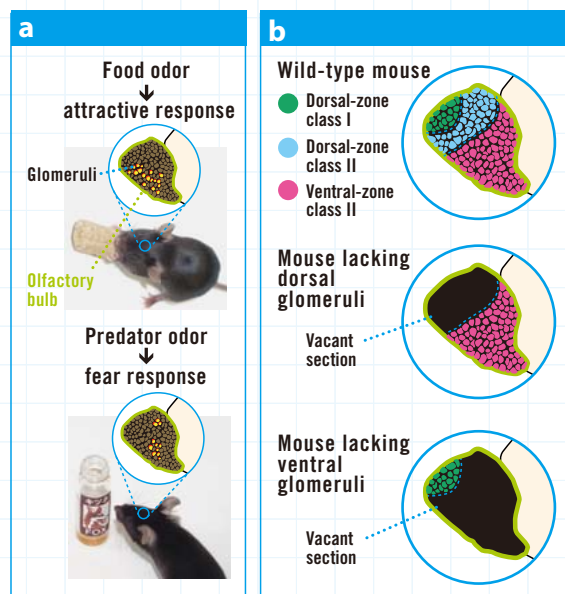
A mutant mouse lacking dorsal glomeruli approaches a cat fearlessly, unable to recognize danger from the odor of its natural predator. Had the cat not been a friendly one, the mouse would have been in grave danger.



Ko KOBAYAKAWA

*Specially appointed associate professor
Graduate School of Science*

<http://www.biochem.s.u-tokyo.ac.jp/top.html>



a Structures called glomeruli are activated in the brain's olfactory bulb, where scent molecules are detected. The pattern of glomeruli activated by the scent molecules is called a "odor map." The figures show odor maps produced when a mouse smells food, above, and the secretions from a natural predator (a fox), below.

b The glomeruli of a wild-type mouse can be divided into three groups: dorsal-zone class I (green), dorsal-zone class II (blue), and ventral zone class II. Using genetic engineering techniques, we created a mutant mouse lacking dorsal glomeruli and a mutant mouse lacking ventral glomeruli and studied their capacity to recognize odors.

emotions and behavior are affected when specific neurons in the brain are selectively removed.

The scent molecules from things like spoiled food or natural predators excite glomeruli in the dorsal and ventral zones of the olfactory bulb simultaneously. A mouse lacking dorsal glomeruli was able to use its ventral glomeruli to detect those scent molecules, and it was even able to distinguish among odorants with subtly different chemical structures. But surprisingly, such a mouse was

completely incapable of interpreting such odors as offensive or dangerous and showed no aversive behaviors to them. Nonetheless, a mouse lacking dorsal glomeruli could

learn to show aversive behavior toward such odors through conditioning. On the other hand, a mutant mouse without ventral glomeruli recognized the odor of spoiled food as unpleasant and demonstrated an innate aversive response. From these results we were able to clearly demonstrate for the first time that innate aversive responses to odors are triggered by the dorsal glomeruli. The results also suggest that the ventral-zone glomeruli have a completely different function relating to learned smell responses. The fact that human beings differ in their odor preferences has been taken as evidence that emotional and behavioral response to smell in mammals is learned, but these recent findings appear to turn conventional wisdom on its head.

News in Brief

2008

January to December

01

January

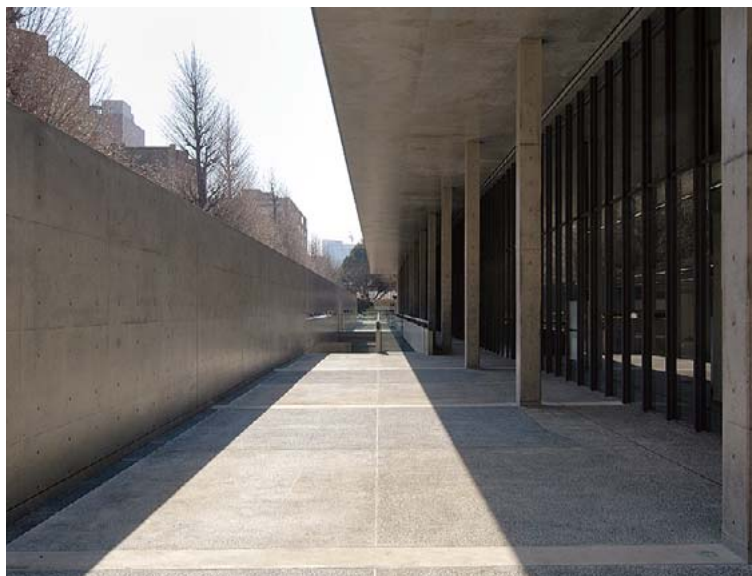
- President Komiyama attended the World Economic Forum Annual Meeting 2008 held in Davos, Switzerland. The University of Tokyo, Keio University and two companies hosted the Japan Sushi Reception 2008.



03

March

- University commencement Ceremony.
- Completion of Interfaculty Initiative in Information Studies Fukutake Hall, designed by Tadao Ando, Special University Professor Emeritus of the University of Tokyo.



04

April

- University Matriculation ceremony held.



- IPCC-IR3S Science Symposium “Scientists discuss the message of the fourth assessment report.” IPCC Chairman Dr. R.K. Pachauri and President Komiyama gave speeches at a press conference prior to the symposium.

- Fourth President’s Council meeting held in New Delhi, India. The Council, including Infosys Technologies Limited Chairman and Chief Mentor Mr. N. R. Narayana Murthy, Hero Corporate Service Limited Chairman Mr. Sunil Kant Munjal, former editor-in-chief of the Economist newspaper Mr. Bill Emmott, discussed the expansion of educational cooperation between India and Todai and the G8 University Summit.

05

May

- The 81st May Festival (gogatsusai) was held on the Hongo Campus.
- “Todai Week at Tsinghua” at Tsinghua University in China. Todai Week aims to highlight cutting-edge research at the University of Tokyo, inform students and academics at Tsinghua University of the activities and appeal of studying at the University of Tokyo, and to promote the creation of a network of contacts between the two universities. Lectures, symposiums, workshops, introductions to Todai and counseling for international students were held. During the event, donations were collected for earthquake victims in Sichuan, which President Komiyama handed over to Tsinghua University President Gu.

06

June

- G8 University Summit at Sapporo, Hokkaido preceding G8 Summit. The Presidents and representatives of twenty-seven leading universities in the G8 member nations, the United Nations University and seven universities from six major non-G8 member nations participated. Under the theme “Global Sustainability and the Role of Universities,” the “Sapporo Sustainability Declaration” was adopted. After the summit, President Komiyama, chair of the G8 University Summit, Politecnico di Torino Rector Francesco Profumo and other representatives visited the Prime Minister’s official residence and directly handed the declaration to Prime Minister Fukuda.



08

August

- Open Campus event. 7,000 participants visited the Hongo campus and 2,100 visited the Komaba campus.

10

October

- Honorary Degree Conferment Ceremony for award of honorary doctorate to Dr. Richard C. Levin, Yale University President. The award was given on the basis of Dr. Levin's support for the creation of the "Todai-Yale Initiative," the University of Tokyo's first overseas center for university-wide education and research, and his great efforts promoting the activities of the International Association of Research Universities, of which the University of Tokyo is also a member. After receiving the award from President Komiyama, Dr. Levin gave a commemorative lecture titled "The University in Service to Society."

11

November

- University of Tokyo Homecoming Day held at the Hongo and Komaba Campuses. A special forum on the topic of "Japan's place in the world – the road ahead for Japan" was held at Yasuda Auditorium, with special guest former Prime Minister Nakasone Yasuhiro. The welcome ceremony featured an address from University of Tokyo President Komiyama Hiroshi and from the chairman of the Akamon Gakuyukai (Todai Alumni Association). The Alumni Office presented recent events and alumni activities. A campus tour, visit to the Kaitokukan and tea ceremony and other events took place. Each faculty and graduate school held individual alumni groups organized events and social gatherings.

- University Vice President Junichi Hamada elected as successor to current University President Komiyama. Vice President Hamada will assume the office of President from 1 April 2009 for a term of six years.



- The 59th Komaba Festival was held.

2009 January to March

01

January

- Third meeting of the "Kashiwa International Campus Town Support Committee." The committee was established to promote development of the "Kashiwa International Campus Town." Ten committee members, Chiba Prefectural Governor Domoto, Kashiwa City Mayor Honda, Nagareyama City Vice-Mayor Ishihara, University of Tokyo President Komiyama, Chiba University President Saito and others attended.

02

February

- Junior division examinations.
- US Secretary of State Hillary Rodham Clinton participated in a lively Town Meeting attended by 270 University of Tokyo students. Before the meeting, University President Komiyama and Executive Vice President Asashima, in consultation with student representatives, presented a commemorative gift to Secretary Clinton. The Town Meeting was managed by University students, beginning with a welcome address by University President Komiyama and followed by a speech by Secretary Clinton, who then took questions from students, kindly answering each in detail.



03

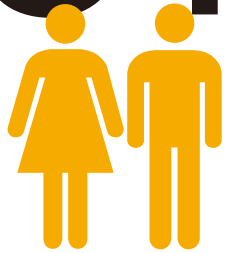
March

- University Commencement Ceremony.



27,817 →

Students



Undergraduates	14,085
Master's students	6,685
PhD students	6,022
Professional degree students	1,025

**Total alumni
(old system)**

91,453

**Total alumni
(new system)**

160,470

As of 31 March 2008

12

Executives



President 1

Of which, 5 concurrently
Vice President

**Managing
Directors** 7

Comptrollers 2

**Associate
Managing
Directors** 2

7,666

Of which, 1 concurrently
Vice President

Fixed-term contract staff

**Academic and
administrative
staff**



of which,
professors 1,291

1,545

**Books at
Todai**

8,699,292 books

**Journals at
Todai**

144,962 journals



As of 31 March 2008

10

faculties

15

**graduate
schools**



11

**research
institutes**

18

**university-wide
centers**

The University of Tokyo by numbers

Figures are as of 1 May 2008 unless otherwise marked.

Even if you know the name "The University of Tokyo," many people probably don't have a clear picture of the scale of the organization. So, from this issue, we've added a new section where we present some data, including numbers of students, number of faculty, expenses, and other figures that describe the University under the title "The University of Tokyo by numbers." The "real" University of Tokyo emerges from its history of 131 years through these numbers.

Capital (2007)

1,003,559 million yen
(Total provided by government)

Corporate sponsored research programs

84 programs

Expenses for fiscal 2007

218,118 million yen

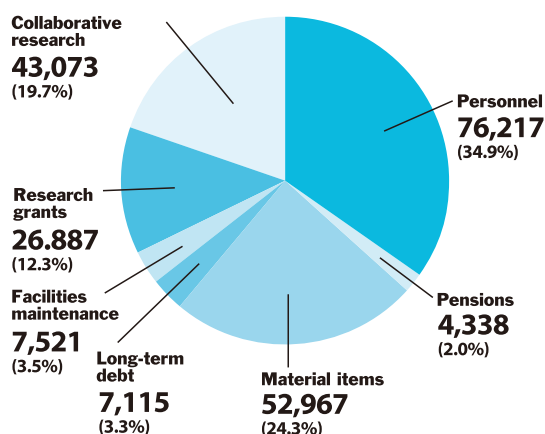
Center based corporate sponsored research programs

20 programs



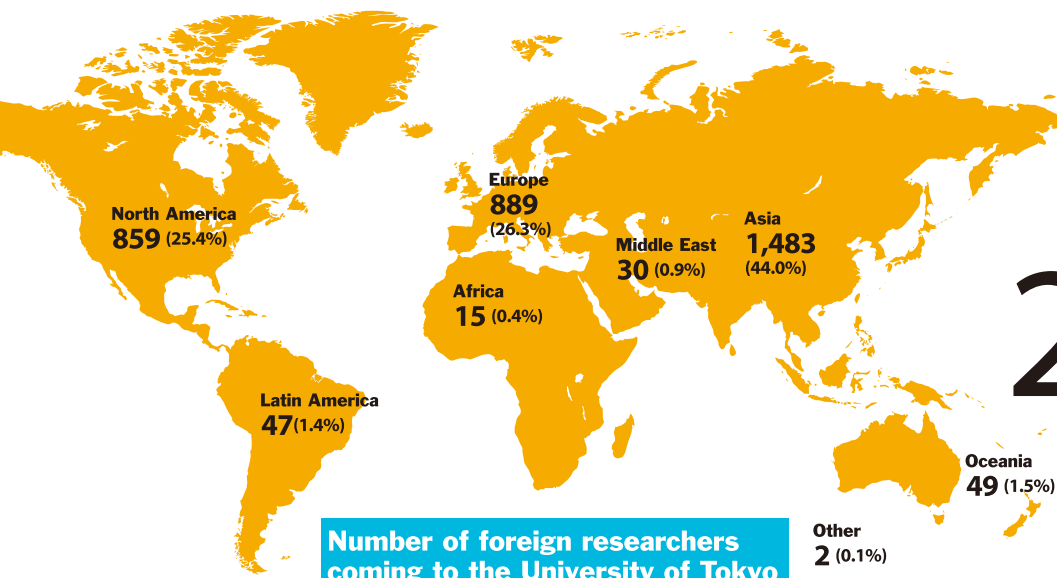
Breakdown

unit: million yen



Exchange agreements

Total 49 countries
295 agreements



Number of foreign researchers coming to the University of Tokyo

2007 data

The University of Tokyo Magazine

從青
t a n s e i

English Version
08

march, 2009

EDITORIAL BOARD:

Public Relations Committee
Hiroyuki TAKEDA Chairperson, Professor,
Graduate School of Science
Keiko HONGO Associate Professor,
Historiographical Institute

ART DIRECTOR:

Mitsunobu HOSOYAMADA
DESIGNER:
Christian Cesar GUSUKUMA

PHOTOGRAPHER:

Jun-ichi KAIZUKA
Yuji OZEKI

PRINTING:

Ishida Taiseisha Inc.

PUBLICATION DATE:

2009/3/31

Public Relations Group of the University of Tokyo
7-3-1 Hongo, Bunkyo-ku, Tokyo 113-8654, Japan
Phone:+81-3-3811-3393 Fax:+81-3-3816-3913
E-mail:kouhou@ml.adm.u-tokyo.ac.jp
URL: http://www.u-tokyo.ac.jp/index_e.html

COVER:

Sanshiro pond

BACK COVER:

Kashiwa Library



Kashiwa Library