



京都大学



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MESSAGE FROM THE PRESIDENT

Kyoto University with ASEAN and Beyond

YOTO UNIVERSITY'S mission is to "sustain and develop its historical commitment to academic freedom and to pursue harmonious coexistence within the human and ecological community on this planet." In 2013, the university launched The 2x by 2020 (double by twenty-twenty) Initiative, a new international strategy with the aims of increasing engagement with the international community, promoting worldclass research, and emphasizing collaborative approaches.

Based on those aims, the Kyoto University ASEAN Center opened in June 2014, and its establishment represents a significant step forward in creating new opportunities for research and educational exchange and international collaboration across the ASEAN region. The center will promote activities that develop and capitalize on the potential in the region and seek to address urgent contemporary issues. It aims to become a "onestop service" for the advancement of collaboration in the ASEAN region by supporting knowledge exchange, bringing together ASEAN and Kyoto University scholars with similar research interests, and disseminating original ideas and research results to the wider community.

By creating larger research and education networks, the center will enable the exploration of frontline research, with a focus on collaboration. In accordance with Kyoto University's Mission Statement, the center will also play an important role in strengthening the university's international engagement. Through the center, we look forward to working with our friends and colleagues throughout Asia to reinforce existing partnerships and develop new collaborative networks.

To commemorate the opening of the new center, this issue of Research Activities will feature a selection of Kyoto University's projects and research undertakings in the ASEAN region and throughout Asia at large. I hope that through these pages our readers will gain a sense of Kyoto University's deep engagement and long history of collaboration and exchange in the Asian region.

September 2014

Hiroshi Matsumoto President, Kyoto University



HISTORY

Southeast Asia and Kyoto University Half a Century of Academic Relations

In June 2014, Kyoto University opened its ASEAN Center in Bangkok, Thailand (p.11), the latest development in over a half century of research and regional exchange in Southeast Asia. This feature focuses on the relationship between Kyoto University and Southeast Asia, including the establishment of the Bangkok Liaison Office of the Center for Southeast Asian Studies (CSEAS) in 1963.



Photo 1 Hirasawa and Iwamura visit General Net in Bangkok and asked him to help Kyoto University's research (1963)

H ISTORICALLY, relations between Kyoto University and Southeast Asian countries can be traced back to developments in the southern areas initiated by Japan prior to World War II. Many of the university's faculties dispatched researchers to Southeast Asian nations and regions under European and American rule to conduct research in various fields. The university also sent a group of graduate students to contribute to the economic development of the region.

After World War II, one by one, the countries of Southeast Asia became free from European and American colonialism. Focusing on post-war reconstruction, Japan resumed relations with Southeast Asian countries. After Japan joined the Colombo Plan in 1954, many universities began developing exchange programs with Southeast Asian countries, including technical training programs and various other initiatives to dispatch specialists and engage in student exchange with Southeast Asian countries. Kyoto University's long-term medical support mission to Burma (now Myanmar) from the beginning of the 1960s is particularly notable as the first of the university's overseas technical training projects.

In Japan, the resumption of relations was led by researchers who had been involved in academic research in the region prior to the war. Opportunities to resume academic research in Southeast Asia began to increase, and researchers at the forefront of those activities included Kyoto University specialists working in the fields of ethnology, geography, and agriculture, who participated in a comprehensive investigation into rice, ethnicity, and culture in Southeast Asia led by the Japanese Society of Ethnology from 1957 to 1958.





Photo 2 Professor Shinobu Iwamura

Research Committee as a temporary committee, within which a Southeast Asia research group was formed. The initial members of the research group were: Yoshisuke Ikeda (sociology), Masamichi Inoki (political science), Shinobu Iwamura (Asian history, **Photo 2**), Jisho Usui (sociology), Iichi Sagara (educational administration), Joji Tanase (cultural anthropology), Jitsuzo Tamura (Asian history), Tatsuo Nishida (linguistics), Jikai Fujiyoshi (Buddhist studies), Yasuzo Horie (economic history), Kiyoshi Matsui (international economics), and Takeshi Motooka (agricultural economics and geology). Some graduate students such as Koichi Mizuno (anthropology) and Toru Yano (political science) also participated.

Following a meeting between President Ko Hirasawa (**Photo 3**) of Kyoto University and Dr. John Scott Everton of the Ford Foundation, a Southeast Asian research status survey was conducted from March to September in 1961 with the Ford Foundation's assistance. The study team, consisting of Jisyo Usui, Joji Tanase, and Takeshi Motooka, was dispatched to Europe, the U.S., and Southeast Asia to investigate research projects there.

Based on the results of the survey, the Southeast Asia Research Committee formulated the "Charter of the Center for Southeast Asian Studies" in 1962. The charter proclaimed the necessity for truly objective, academic, and comprehensive research, instead of research for specific policies, such as had been conducted before and during the war.





Photo 3 President Ko Hirasawa of Kyoto University

comprehensive research on Southeast Asia and its surrounding areas. In 1965, CSEAS, which had originally been established as a university center, became the first government-regulated research center in Japan. Since then, CSEAS has become an internationally renowned base for Southeast Asian studies. From the following statement made by Kyoto University president, Dr. Ko Hirasawa in April 1963, we can feel the passion of the university personnel involved in the center's establishment.

Southeast Asian nations and Japan are close not only geographically, but also ethnically and culturally. Furthermore, the political and economic relationship between Japan and Southeast Asia is anticipated to become closer from now on ... The mission of the Center for Southeast Asian Studies is to conduct comprehensive research on Southeast Asia. As a matter of course, such comprehensive research cannot be achieved without a deep affection for and understanding of Southeast Asian people ... Rather than studying documents, we should go to local places, live together with local people, and break into an unexplored field of research to make a broader contribution to international academia.

The Bangkok Liaison Office of CSEAS was temporarily established near Wittayu Road (former location) in the first year of the foundation of CSEAS, and was formally opened in February of the following year (**Photo 4** left). This was the



Photo 4 The first Bangkok Liaison Office (left) and The Office's opening ceremony in 1964 (right)

disseminating information (Photo 5, 6).

Tel: +010-66-2-664-3619 Fax: +010-66-2-664-3618

for project implementation. It has also served as a

center for exchange with researchers and students

from Southeast Asian countries, including Thailand.

The liaison office was relocated to the address below

in February 2012, and continues to expand the

scope of its activities to cover all areas of Southeast

Asia as a base camp and center for collecting and

19D, GP Grande Tower, 55, Soi 23,

Wattana, Bangkok, 10110 Thailand

Sukhumvit Rd, Klongtoey Nua,

first permanent overseas liaison office established by a national university in Japan. President Azuma Okuda of Kyoto University invited many senior government officials and scholars from Thailand, the Japanese Ambassador to Thailand, and the Director-General of the Department of Research of Japan's Ministry of Education to the Office's opening ceremony (Photo 4 right). Since then, the liaison office has been actively used by researchers from Kyoto University and other universities, not only as a base camp for field research, but also as a base to investigate local circumstances and collect materials required for local research projects, coordinate and communicate with local government and institutions, and acquire permissions required

List of researchers based in the Bangkok Liaison Office

Takeshi Motooka (1963.10-1964.3) Shigeru lijima (1964.4-1964.5) Jun-Ichi Sagara (1964.4-1964.9) Takeshi Motooka (1964.10-1965.1) Shigeru lijima (1965.1-1965.6) Takashi Teramatsu (1965.7-1965.8) Shigeru lijima (1965.8-1965.9) Takeshi Motooka (1965.10-1966.3) Shigeru lijima (1966.3-1966.6) Yoneo Ishii (1966.6-1967.4) Havao Fukui (1967.4-1969.4) Yoshihiro Kaida (1969.4-1970.1) Yasuyuki Mitani (1970.2-1971.6) Yasuba Yasukichi (1971.6-1972.5) Hayao Fukui (1972.5-1972.9) Koichi Mizuno (1972.9-1973.3) Hiroshi Tsuiii (1973.4-1974.4) Yoshihiro Kaida (1974.4-1974.5) Hiroshi Tsujii (1974.5-1974.10) Yoshihiro Kaida (1974.10-1976.10) Yoneo Ishii (1976.10-1976.12) Yoshihiro Kaida (1976.12-1977.10) Isamu Yamada (1977.10-1977.11) Toru Yano (1977.11-1978.1) Yumio Sakurai (1978.1-1978.11) Susumu Yamakage (1978.11-1979.4) Kunio Yoshihara (1979.11-1979.7) Koichi Mizuno (1979.7-1979.9) Yasuyuki Mitani (1979.9-1981.5) Hayao Fukui (1981.5-1982.7) Toshiharu Yoshikawa (1982.7-1982.9) Kunio Yoshihara (1982,10-1983,3) Yoshihiro Kaida (1983.4-1984.5) Shoji Ninomiya (1984.5-1985.3) Hisao Furukawa (1985.3-1985.9) Shoii Ninomiva (1985.10-1985.11) Mitsuo Ezaki (1985.12-1986.3) Eiji Nawata (1986.3-1986.3) Havao Fukui (1986.3-1986.6) Hirovuki Watanabe (1986.6-1986.12) Kenji Tsuchiya (1986.12-1987.4) Toshiharu Yoshikawa (1987.4-1988.3) Yasuvuki Kono (1988.3-1989.2) Hayao Fukui (1989.2-1989.8) Hidehiko Kinouchi (1989.8-1989.11) Yumio Sakurai (1989.11-1990.2) Isamu Yamada (1990.2-1990.6) Akira Kohsaka (1990.6-1990.12) Yasuyuki Kono (1990.12-1991.5) Havao Fukui (1991.5-1991.8) Yukio Ikemoto (1991.8-1992.1) Hidehiko Kinouchi (1992.1-1992.4) Yoshifumi Tamada (1992.4-1992.10) Havao Fukui (1992,10-1993,1) Yukio Ikemoto (1993.1-1994.4)

Yoshifumi Tamada (1994.5-1994.10) Hayao Fukui (1994.11-1995.1) Yukio Hayashi (1995.1-1995.12) Yasuyuki Kono (1996.1-1996.4) Yoshifumi Tamada (1996.5-1996.10) Yasuvuki Kono (1996.10-1997.10) Yukio Hayashi (1997.10-1998.3) Yoko Hayami (1998.4-1998.9) Hirokazu Higuchi (1998.9-1999.4) Keiko Kuroda (1999.4-2000.4) Shigeyuki Abe (2000.5-2000.11) Yukio Hayashi (2000.11-2001.5) Yasuvuki Kono (2001.5-2002.4) Asami Nakanishi (2002,4-2002,7) Takashi Shiraishi (2002.7-2002.10) Masayuki Yanagisawa (2002.10-2003.11) Patricio N. Abinales (2003.11-2004.5) Koichi Fujita (2004.5-2004.11) Nobuaki Arai (2004.11-2004.12) Mamoru Shibayama (2004.12-2005.3) Shinva Takeda (2005.4-2005.6) Koichi Fujita (2005.6-2005.7) Nobuaki Arai (2005.7-2005.9) Isamu Yamada (2005.9-2005.10) Kozo Hiramatsu (2005.10-2005.12) Yasuyuki Kono (2005.12-2005.12) Yoko Havami (2005.12-2006.1) Masavuki Yanagisawa (2006.1-2006.2) Masayuki Yanagisawa (2006.2-2006.3)

Mamoru Shibayama (2006.3-2006.4) Masayuki Yanagisawa (2006.4-2006.7) Ken-ichi Abe (2006.7-2006.9) Yukio Hayashi (2006.9-2006.11) Yoshitsugu Nakaguchi (2006.11-2007.3) Mamoru Shibayama (2007.3-2007.6) Nobuaki Arai (2007.6-2007.9) Hiromu Shimizu (2007.9-2008.3) Mamoru Kanzaki (2008.3-2008.6) Junichi Okuvama (2008.6-2008.9) Satoru Kobayashi (2008.9-2009.9) Tatsuki Sekino (2009.9.3-2009.10) Koichi Fuiita (2009.9-2009.12) Hiromu Shimizu (2009.12-2010.3.4) Keisuke Hoshikawa (2010.3-2011.3) Mamoru Shibayama (2011.3-2011.6) Shinsuke Tomita (2011.6-2011.9) Taro Sonobe (2011.9-2011.12) Mamoru Shibayama (2011.12-2012.1) Satoru Kobayashi (2012.1-2012.4) Yumio Sakurai (2012.4-2012.7) Simon Creak (2012.7-2012.10) Satoru Kobayashi (2012.10-2013.1) Nathan Badenoch (2013.1-2013.4) Tatsuki Kataoka (2013.4-2013.8) Satoshi Yokoyama (2013.8-2013.11) Yoshihiro Nakanishi (2013.11-2014.4) Hiromu Shimizu (2014.4-2014.8) Fumiharu Mieno (2014.8-2014.11)



In addition to CSEAS, many graduate schools and research institutes of Kyoto University have had academic connections with Southeast Asian countries. At the organizational level, the Graduate School of Science and the Graduate School of Agriculture have a long history of research activities in Southeast Asia, and other graduate schools and research institutes have also been involved in collaborative research and joint projects, such as the Graduate School of Engineering, Graduate School of Human and Environmental Studies, Graduate School of Asian and African Area Studies, Graduate School of Global Environmental Studies, Graduate School of Energy Science, Institute of Advanced Energy, Research Institute for Sustainable Humanosphere, Disaster Prevention Research Institute, Primate Research Institute, and Center for Ecological Research. There have also been



Photo 6 In the reception room of the Bangkok Liaison Office

countless collaborative research activities at the individual level.

Since the establishment of the Association of Southeast Asian Nations (ASEAN) in 1967, the number of exchange students on Japanese government scholarships sent to Japan from Thailand, Indonesia, Malaysia, and the Philippines has increased. Kyoto University has hosted many such exchange students since the 1970s. Even after returning to their home countries, those students have continued to support overseas research and international relations activities implemented by Kyoto University, which has laid the foundations for the university's current productive relationships with Southeast Asian countries.

Looking ahead to the next decade and beyond, Kyoto University aims to continue its process of internationalization. The Kyoto University ASEAN Center was established as part of that effort. In coordination with the CSEAS Bangkok Liaison Office, the Jakarta Liaison Office (established in 1970), and the Vietnam National University, Hanoi–Kyoto University Collaboration Office (VKCO, established in 2010), the Kyoto University ASEAN Center aims to strengthen the university's commitment to education and research partnerships throughout the Southeast Asian region. Your continuing support is greatly appreciated. INTRODUCTION

Kyoto University: A Global Perspective

Kyoto University is the second oldest research university in Japan. As a truly international institution with numerous overseas facilities, it is dedicated to providing a free-thinking academic environment with a global perspective.

Overview: University Profile

Mission	The mission of Kyoto University is to sus commitment to academic freedom and to within the human and ecological community	stain and develop its historical pursue harmonious coexistence y on this planet.
Foundation	Kyoto University was originally founded a the June 18, 1897. It was the second imperia Japan.	s Kyoto Imperial University on al university to be established in
Students (As of 1 May 2014)	Undergraduate students: 13,580 Master's course students: 4,794 Professional course students: 721 Doctoral course students: 3,645	
Faculty and Staff (As of 1 May 2014)	Faculty members: 2,836 Non-teaching staff members: 2,635	
Facilities and Environment	Faculties: 10 Graduate Schools: 18	No-Colin

KU Key Words

Freedom and Autonomy 🔷

(As of 1 April 2014)

Research Institutes: 14

Kyoto University values **freedom and autonomy** in research that conforms to high ethical standards, and believes in promoting a disciplinarily diverse spectrum of research, while also pursuing an integrated, **multidisciplinary approach**.

Intra-University Networks and Organizations: 6

Education and Research Centers: **17** Overseas Offices and Facilities: **50**

Self-Reliance and Self-Respect 🔷

The principles of **self-reliance** and **self-respect** are key elements in Kyoto University's academic approach. Guided by those concepts, students and researches are encouraged to be bold, independent, and creative in their study and research.

The Hakubi Project 🔷

A unique program to foster outstanding young researchers, the Hakubi Project recruits **twenty international researchers per year** as associate and assistant professors, and gives them the valuable opportunity to devote themselves entirely to their research.

The John Mung Program 🔷

A program to support **mid-** and **long-term** research by junior faculty members at leading academic institutions overseas. Since 2013, the program is also open to students and nonteaching staff members.

2× by 2020 🔷

 $2 \times$ by 2020 (Double by Twenty-Twenty) is the slogan of Kyoto University's new international strategy, by means of which the university aims to double its international indices in research, education, and international service by the year 2020.



By the Numbers

JPY 174,807 million	FY2013 revenues
20%	Percent of funding from external sources in the revenues
JPY 169,271 million	FY2013 expenses
42 %	Percent of instruction and research costs, the largest portion of the expenses
JPY 310 million	Revenue from patent licenses (FY2013)
1,779	International students (As of 1 May 2014)
851	Students studying abroad (FY2013)
275	International faculty members (as of 1 May 2014)
2,908	International researchers hosted Annually (FY 2012)
281,948	Academic paper citations
	(total from 2007-2011. From $InCites^{TM}$, Thomson Reuters)
8	Number of Nobel laureates that have taught on campus

More about Kyoto University

International Accolades

In addition to eight **Nobel Prizes**, Kyoto University researchers have garnered two **Fields Medals**, one **Gauss Prize**, four **Lasker Awards**, two **Japan Prizes**, and four **Kyoto Prizes**.

Academic Exchange Agreements 🔷

Kyoto University has academic exchange agreements with ninety-three universities, four university associations, and one national academy.

Kyoto: The Academic Center of Japan 🔷

Kyoto has a long history as a university town. In the Heian period (794-1185), when Kyoto was the nation's capital, it was the location of an imperial institution of higher education called the *Daigaku-ryō*. Comparable to today's national universities, staff members at the *Daigakuk-ryo* held posts equivalent to the current positions of university president, teaching staff, and administrative staff, and departments within the institution were also the equivalent of current university faculties. At present, Kyoto embraces thirty-eight institutions of higher education, making it one of the most concentrated academic centers in Japan.





AWARDS & HONORS

International Recognition of Kyoto University's Research

TOPIC

Prof. Toru Fushiki Receives the Medal of Honor with Purple Ribbon

Toru Fushiki, professor in the Graduate School of Agriculture was awarded the Medal of Honor with Purple Ribbon (Shiju Hosho) by the Government of Japan in April 2014. The Shiju Hosho is an award conferred by the Emperor of Japan for meritorious deeds, or excellence in the fields of science, art or sport, including scientific discovery and invention. Fushiki's research in the field of nutritional chemistry has elucidated the reasons why people enjoy the taste of food, and has provided scientific definitions of the Japanese concepts of *umami* (savory taste)



Toru Fushiki

and koku (richness) as represented by oil and dashi (soup stock) commonly used in Japanese cuisine. He has written not only specialized academic papers but also many popular books about food, and, together with chefs in Kyoto, has contributed to the tradition and development of Japanese cuisine through efforts to maintain the culture of *dashi* and convey the appeal of traditional Japanese dishes.

> *Please refer to the following link for more information on Kyoto University researchers who have been awarded the Medal of Honor with Purple Ribbon: WEB www.kyoto-u.ac.jp/ja/profile/intro/honor/award_b/purple_ribbon

TOPIC

Prof. Hiraku Nakajima and Dr. Koichi Tanaka Receive the Japan Academy Prize



Hikaru Nakajima



Hiraku Nakajima, professor in the Research Institute for Mathematical Sciences, and Koichi Tanaka, professor emeritus of Kyoto University, have received the 2014 Japan Academy Prize. The Japan Academy Prize, presented for the achievement of outstanding research results, is one of the most prestigious academic awards in Japan.

Nakajima received the award for his outstanding contributions to geometric representation theory and mathematical physics. Highly recognized as a world leader in the both fields, his other

accolades include the Geometry Prize of the Mathematical Society of Japan (1997), the Spring Prize of the Mathematical Society of Japan (2000), the Cole Prize in Algebra of the American Mathematical Society (2003), and the JSPS Prize of the Japan Society for the Promotion of Science (2006).

Tanaka's award was presented for his "outstanding achievements in basic research on living-donor liver transplantation and studies on its clinical development and deployment." After serving as the director of the Kyoto University Hospital, he retired from the university in March 2005. He currently serves as chairman of the Board of Directors of the Kobe International Frontier Medical Center.

Awards & Honors

TOPIC

Prof. Kazutoshi Mori Receives the Shaw **Prize in Life Science and Medicine**

Kazutoshi Mori, professor in the Graduate School of Science has been awarded the prestigious Hong Kong-based Shaw Prize in Life Science and Medicine. The award was jointly presented to Mori and Prof. Peter Walter of the University of California, San Francisco, for their discovery of the endoplasmic reticulum stress response. Mori is the second Japanese Shaw Prize laureate, following Shinya Yamanaka, director of Kyoto University's Center for iPS Cell Research and Application (CiRA), who received the award in 2008.

WEB www.upr.biophys.kyoto-u.ac.jp

TOPIC

Prof. Motomu Tanaka Receives the Philipp Franz von **Siebold Award for Japanese Researchers**



TOPIC

Motomu Tanaka, professor in the Institute for Integrated Cell Material Sciences (iCeMS), has been awarded the 2014 Philipp Franz von Siebold Award for Japanese Researchers by the Alexander von Humboldt Foundation. With the aim of promoting academic exchange between Germany and Japan, the Philipp Franz von Siebold Award has been presented annually to Japanese academics since 1979 for outstanding service in enhancing mutual cultural understanding between the two countries. Tanaka is the 6th Kvoto University-affiliated scholar to receive the award. The award is conferred directly by the Federal President of Germany.

and is regarded as Germany's most prestigious award for Japanese researchers.

WEB www.icems.kyoto-u.ac.jp/e/ppl/grp/m-tanaka.html

Dr. Itaru Imayoshi Receives the 1st Prize of the German **Innovation Award – Gottfried Wagener Prize 2014**

Itaru Imayoshi, an associate professor in the Hakubi Center for Advanced Research and Institute for Virus Research of Kyoto University, has won the 1st Prize of the German Innovation Award – Gottfried Wagener Prize 2014 for the development of a method of optical manipulation of neural stem cells in the brain. Established by German companies that value technological innovation, the German Innovation Award aims to promote industry-academia collaboration between Germany and Japan, and is conferred on promising young Japanese



scientists in recognition of innovative research achievements. The 3rd prize was awarded to Hideki Hirori, an associate

professor in the Institute for Integrated Cell-Material Sciences (iCeMS), for his research achievements relating to the generation of ultra-intense terahertz radiation sources and nonlinear spectroscopy (For more details, please refer to the features on page 29.)

WEB www.kyoto-u.ac.jp/ja/news_data/h/h1/news7/2014/140618_1.htm



Kazutoshi Mori

Itaru Imayoshi

TOPIC

The Kyoto University Shi-Shi Award



The 2^{nd} Kyoto University Shi-Shi Award ceremony was held on 24 June 2014. "Shi-Shi" is a Chinese term meaning "to work hard and be diligent." With the aim of promoting the development of the university, the Shi-Shi Award aims to honor Kyoto University scholars for their outstanding efforts and achievements in education, research, and social service. The recipients of the 2^{nd} Shi-Shi Award are as follows (in alphabetical order):

Kayo Inaba Vice dean and professor, Graduate School of Biostudies Tetsuro Matsuzawa Professor, Primate Research Institute Atsushi Moriwaki Assistant to the executive vice-president for education; professor, Graduate School of Science Yoshimasa Nakamura Assistant to the executive vice-president for education; professor, Graduate School of Informatics Hiraku Nakajima Professor, Research Institute for Mathematical Sciences

WEB www.kyoto-u.ac.jp/ja/news_data/h/h1/news7/2014/140624_1.htm (Japanese only)

HONORS

Award Winning Researchers in Kyoto University

Nobel Prize	in Physics Hi	deki Yukawa (1949), Sin-Itiro Tomonaga (1965), Makoto Kobayashi (2008),
	То	shihide Maskawa (2008)
	in Chemistry	Kenichi Fukui (1981), Ryoji Noyori (2001)
	in Physiology	or Medicine Susumu Tonegawa (1987), Shinya Yamanaka (2012)
Fields Medal	Heisuke Hiro	naka (1970), Shigefumi Mori (1990)
Gauss Prize	Kiyosi Itō (200	3)
Lasker Award	Susumu Tone	gawa (1987), Yasutomi Nishizuka (1989), Yoshio Masui (1998),
	Shinya Yamar	naka (2009)
Japan Prize	Makoto Naga	0 (2005), Masatoshi Takeichi (2005)
Kyoto Prize	Chushiro Hay	ashi (1995), Kiyosi Itō (1998), Shinya Yamanaka (2010), Masatoshi Nei (2013)
Die Schaudinn-Ho	offmann-Plakette	Shin-ichi Matsumoto (1965)
Huxley	Memorial Medal <	Junichiro Itani (1984)
Canada Gairdner Int	ernational Award <	Susumu Tonegawa (1983), Yasutomi Nishizuka (1988),
		Shinya Yamanaka (2009), Kazutoshi Mori (2009)
Order of the White El	ephant - 3 rd Class <	Yoneo Ishii (1987)
Ross	G. Harrison Prize <	Tokindo S. Okada (1989)
	Salem Prize <	Mitsuhiro Shishikura (1992)
R	obert Koch Prize <	Shigekazu Nagata (1995), Shinya Yamanaka (2008), Tasuku Honjo (2012)
The Keio Medi	cal Science Prize <	Shigetada Nakanishi (1996), Masatoshi Takeichi (2001), Koichi Tanaka (2002),
		Yoshinori Fujiyoshi (2005), Shimon Sakaguchi (2008), Kenji Kangawa (2009)
Frank	Nelson Cole Prize <	Hiraku Nakazima (2003)
Jo	hn Dawson Prize <	Tetsuya Sato (2005)
Yu	ıri Gagarin Medal <	Hiroshi Matsumoto (2006)
Вс	ooker Gold Medal <	Hiroshi Matsumoto (2008)
т	ne Ulysses Medal <	Shuh Narumiya (2008)
L.3	S.B. Leakey Prize <	Toshisada Nishida (2008)
Prix du Rayonner et de la litté	nent de la langue rature françaises	Kazuyoshi Yoshikawa (2010)
	de Gennes Prize	Susumu Kitagawa (2013)

GLOBAL NETWORK

International Relations at Kyoto University

International cooperation and exchange is an indispensible component of Kyoto University's operations as a world-class higher education and research institution seeking to make a significant contribution to a stable and harmonious global society.

NEWS TOPICS

Opening of the Kyoto University ASEAN Center





Kyoto University has opened a new center in Bangkok, Thailand, dedicated to supporting research, education, and international collaborations across the ASEAN region. To mark the launch of these activities, an official opening ceremony and a symposium titled "Kyoto University in ASEAN — Past, Present, and Future" were held in Bangkok on Saturday 28 June 2014.

Over 200 delegates representing academia, government, and industry from ASEAN member states and Japan convened at the opening ceremony and commemorative symposium. Key delegates also participated in a ribbon-cutting ceremony at the new ASEAN Center. It is expected that the Center will not only reinforce the presence of Kyoto University within the ASEAN region, but also strengthen international cooperation and coordination.

The ceremony commenced with an opening address delivered by Michiaki Mishima, Executive Vice-President for International Affairs and Hospital Administration. The ceremonial address was delivered by Kyoto University President Hiroshi Matsumoto, who emphasized that the ASEAN Center would not only strengthen existing partnerships but also spur new collaborations, and shared his hope that the new Center would "enhance regional cohesion and global competitiveness."

Congratulatory addresses were given by HE Shigekazu Sato, Ambassador Extraordinary and Plenipotentiary to the Kingdom of the Thailand, Sadayuki Tsuchiya, Japan's Deputy Minister of Education, Culture, Sports, Science and Technology, Takashi Shiraishi, President of the National Graduate Institute Policy Studies, Suphat Champatong, Assistant Secretary-General for Thailand's Higher Education Commission, Setsuo Iuchi, President of JETRO's Bangkok Office, and Yasushi Negishi, Asian Development Bank's Thailand Director.



Mamoru Shibayama, Director of the Kyoto University ASEAN Center, presented an overview of both the University and the objectives of the new Center. He focused on the importance of cultivating Wa (human relationships) and En (connectedness) to promote excellence in education and research and inspire the next generation of world-class scholars.

In his closing remarks, Junichi Mori, Director-General of the Organization for the Promotion of International Relations, Kyoto University, highlighted his hopes for further collaborations in terms of both research and education in the ASEAN region.

It is expected that the Kyoto University ASEAN Center will act as a frontline base to deepen existing collaborations with ASEAN universities and support projects that will benefit the ASEAN region and the global community. As part of Kyoto University's "2x by 2020" (Double by Twenty-Twenty) Initiative, which aims to strengthen the University's internationalization efforts, the ASEAN Center will support knowledge transfer activities, and promote wider engagement with the international community.

NEWS TOPICS

Heidelberg Office Opens, May 3



The historic building in Heidelberg's city center housing the University's liaison office



On May 3rd, Kyoto University opened its first liaison office in continental Europe, complementing an office opened in 2009 in London.

Adjacent to the offices of Heidelberg University's senior administrators, in the middle of the city's historic center, the Kyoto University office is located in a building which formerly housed Heidelberg's "student prison" (Studentenkarzer). This facility is now part of the university's historical museum, and is a popular tourist attraction.

Kyoto's London and Heidelberg offices both aim to support student and researcher exchanges between Kyoto University and institutions across Europe, as well as to promote collaboration with government and private sector firms. An additional aim for the Heidelberg office is to support Kyoto's participation in the HeKKSaGOn university consortium,

consisting of six institutions in Japan and Germany.

A ceremony marking the opening event was attended by over 30 dignitaries and guests, including Michiaki Mishima, Executive Vice-President for International Affairs and Hospital Administration at Kyoto University, Kiyoshi Yoshikawa, Kyoto's Executive Vice-President for Research, Dieter Heermann, Vice Rector for International Relations at Heidelberg University, and Kumiko Bando, Japan's Deputy

Minister of Education, Culture, Sports, Science and Technology.

Following welcome remarks, the attendees gathered at the entrance of Heidelberg University's Bel Etage building for a ribbon-cutting, after which they toured the museum and Kyoto University's new office.



Dignitaries cutting a ribbon to mark the opening of the new center



Kyoto's Executive Vice-President Mishima delivering welcoming remarks

SYMPOSIA & WORKSHOPS

Bordeaux-Kyoto Symposium, May 5–6

Kyoto University and the University of Bordeaux held their first joint symposium in early May, consisting of over 200 attendees, a quarter of whom travelled from Kyoto for the event.

Similar to other such joint symposia held over the past two years between Kyoto and universities in Bristol, Switzerland, and Taiwan, the Kyoto-Bordeaux meeting consisted primarily of numerous parallel sessions covering a wide range of topics from engineering and chemistry to philosophy and the environment.

Aiming to promote increased collaboration between the universities, the symposium opened with welcome addresses by Manuel Tunon de Lara, President of the University of Bordeaux, and Michiaki Mishima, Kyoto University's Executive Vice-President for International Affairs and Hospital Administration, after which a memorandum of academic cooperation was signed.

Vincent Dousset, Vice-President for International Affairs of the University of Bordeaux and Kiyoshi Yoshikawa, Executive Vice-President for Research at Kyoto University, continued with

f f f f

The Hall de l'Atrium at the entrance of the University of Bordeaux Victoire campus

overview presentations of both universities, followed by keynote lectures on polymer organic electronics and cancer immunotherapy.

The afternoon of the 5th and most of the 6th were then devoted to parallel sessions in the following fields: philosophy and translation and understanding other cultures; archaeological sciences; territory and environment; organic, biological, and materials chemistry; nutrition and public health (including



Bordeaux Presdient de Lara (left) and Kyoto Executive Vice-President Mishima following the signing ceremony

discussions on grapes and wines specific to the area); inorganic chemistry and photonics; engineering and computer science; academia-industry partnership in medical innovation; medical imaging and applications for clinical medicine; new generation functional materials for diagnosis and cure of diseases; and cell function control by membrane meso-domains and cell-material interactions.

Overall, participants from Kyoto were greatly encouraged by the enthusiasm of their Bordeaux colleagues, as well as enthralled by the classical architecture of the symposium main venue at the Victoire campus, the picturesque city center, and delicious wines and dishes of the region. It is hoped that the meeting will serve both to strengthen existing research-level partnerships in addition to providing impetus for new joint efforts.

Kyoto University: "Everything That Researchers Dream of"

Conducting successful research overseas requires continued support from the host institute and colleagues. Kyoto University, and the Graduate School of Asian and African Area Studies (ASAFAS) in particular, offer me the best support that I've ever had. My knowledgeable colleagues can answer my questions and satisfy my academic curiosity. The library has a large collection of books and documents that I need. It is not an exaggeration to say that Kyoto University can offer everything that researchers dream of.



Attachak Sattayanurak, PhD

Department of History, Faculty of Humanities, Chiang Mai University, Thailand.

NEWS TOPICS

President Matsumoto Engages in Discussion with PM Abe at Japan-UK Universities Conference in London



Prime Minister Abe and President Matsumoto posing for a group photograph

Kyoto University President Hiroshi Matsumoto, attending a conference of leading Japanese and UK universities held May 1 at University College London, played an active role in discussions on education and research, as well as took part in an open conversation with Japanese Prime Minister Shinzo Abe.

The one-day meeting at UCL, "Japan-UK Universities Conference for Collaboration in Research and Education," brought together senior executives from 14 Japanese and 16 UK universities, who took part in a wide-ranging forum examining successful joint programs, exchanges of students and researchers, and challenges for the future.

Prime Minister Abe, in London for meetings with the UK government, attended a special roundtable session at the conference, also attending a ceremony at a UCL monument commemorating the Choshu Five, young Japanese scholars who attended the college toward the end of the feudal period and later went on to become leading figures in Japan's early modern era. Mr Abe himself hails from the Choshu region of Japan (present-day Yamaguchi Prefecture).

The bulk of the meetings was taken up with presentations from each university, highlighting key milestones in the development of their educational and research efforts, and noting important joint Japan-UK efforts. One oft-cited example was RENKEI, a program launched in 2013 by the British Council and eleven of the institutions participating in the conference, which has already successfully realized two pilot exchange visits at Bristol and in Kyoto.

President Matsumoto co-chaired a morning education panel discussion, succinctly summarizing various issues and points for consideration, which he then later presented to the Prime Minister. These

included strengthening RENKEI, overcoming challenges such as credit transferability and curriculum compatibility, securing external funding to support future exchanges, and increasing participation by improving accommodation and language issues.

Later in the day the President delivered a presentation, describing Kyoto University's many achievements and numerous connections with scholars and institutions in the UK, including the strong partnership in recent years — echoed by several other speakers during the day including the Prime Minister — with the University of Bristol.



The venue for the meeting at UCL

- Participating Japanese institutions: Doshisha University Altotsubashi University Hokkaido University Keio University Kyoto University Kyushu University Nagoya University Osaka University Ritsumeikan University Tohoku University University of Tokyo Tokyo Institute of Technology University of Tsukuba Waseda University
- Participating UK institutions: University of Bristol & University of Cambridge & University of Durham & University of Edinburgh & Imperial College London & King's College London & University of Leeds & University of Liverpool & London School of Economics & University of Manchester & University of Newcastle & University of Oxford & University of Sheffield & University of Southampton & University College London & University of York & University of Warwick

INTERNATIONAL PROJECT

Development of Low Carbon Society Scenarios for the Asian Region



Low Carbon Society Blueprint for Iskandar Malaysia 2025, a project formulated by an international research team including Kyoto University members was approved by the Malaysian government.



The Low Carbon Society Blueprint for Iskandar Malaysia 2025 (LCSBPIM), an action plan for the realization of a low carbon society in Iskandar Malaysia formulated by an international team including Kyoto University members, was formally approved by the Malaysian government on March 20, 2014. The international team is led by Yuzuru Matsuoka, professor in the Graduate School of Engineering, and consists of researchers from Kyoto University, Universiti Teknologi Malaysia (UTM), the National Institute of Environmental for Studies (NIES), Okayama University, and policymakers from the Iskandar Region Developing Authority (IRDA) and other governmental institutions in Malaysia. Iskandar Malaysia is a main southern development corridor in Johor State, Malaysia (Figure 1). The endorsement was granted by the Approvals and Implementation Committee (AIC) headed by the prime minister of Malaysia. The committee endorsed not only LCSBPIM, but also its "Roadmap" and "Implementation Plan," although the actual implementation of the initiative began last year. This is

the first practical formulation of a low carbon blueprint at the regional level in an ASEAN country, and it is expected to become a model for creating low carbon cities in Asian nations.

In order to realize a low carbon society, there must be plans for long-term activities spanning a decade in a wide range of areas, such as energy, industry, commerce, agriculture, and transportation, as well as plans for the reduction of greenhouse gas emissions associated with those activities. The plans must be implemented in a way that connects them in an integrated and quantitative manner with the region's plans for socioeconomic development. Japanese research institutes, including Kyoto University, have approached this challenge by developing methods to create low carbon society scenarios

Mitigation Options	ktCO ₂	%
	Reduction	
Green Economy	6,937	54%
Action 1 Integrated Green Transportation	1,916	15%
Action 2 Green Industry	1,094	9%
Action 3 Low Carbon Urban Governance	2	-
Action 4 Green Building and Construction	1,203	9%
Action 5 Green Energy System and Renewable Energy	2,725	21%
Green Community	2,727	21%
Action 6 Low Carbon Lifestyle	2,727	21%
Action 7 Community Engagement and Consensus Building	-	-
Green Environment	3,094	25%
Action 8 Walkable, Safe and Livable City Design	263	2%
Action 9 Smart Urban Growth	1,214	10%
Action 10 Green and Blue Infrastructure and Rural Resources	392	3%
Action 11 Sustainable Waste Management	1,224	10%
Action 12 Clean Air Environment	-	-
Total	12,467	100%

Table 1 The twelve major actions in the Low Carbon Society Blueprint for Iskandar Malaysia 2025 action plan and their corresponding anticipated reductions greenhouse gas emissions by 2025 using different areas of expertise, including integrated assessment modeling, public economics, energy planning, and mathematical programming. Quantitative socioeconomic simulation and CO_2 reduction technology simulation models have been utilized as the principal tools for creating the scenarios.

The Low Carbon Society Blueprint for Iskandar Malaysia 2025 was formulated with these methods, which were developed through research collaboration with Malaysia. The initiative consists of twelve major actions with quantitative targets (Table 1) and 281 concrete measures for the realization of a low carbon society. As a best practice for the formulation of an action plan for a low carbon society at the regional level, the study is expected to become a showcase in the Asian region. The details of the blueprint were reported and published at the 18th session of the Conference of the Parties (COP18) to the United Nations Framework Convention on Climate Change (UNFCCC) and the 8th session of the Conference of the Parties serving as the Meeting of the Parties to the Kyoto Protocol (CMP8), held in November 2012 in Doha, Qatar. They were also announced



Figure 2 Malaysian Prime Minister Najib Razak delivers a televised announcement of the Low Carbon Society Blueprint for Iskandar Malaysia 2025 action plan to the Malaysian people on 11 December 2012

to the people of Malaysia by Malaysian Prime Minister Najib Razak, in a televised press conference on December 11 of the same year (Figure 2). Following the AIC endorsement, a policy implementation framework will be established to achieve the target of reducing greenhouse gas emissions by 40% by 2025, which will add further impetus to the move towards a low carbon society in Malaysia.

The Low Carbon Society Blueprint for Iskandar Malaysia 2025 action plan was formulated under the Science and Technology Research Partnership for Sustainable Development (SATREPS), which is a program operated by two Japanese government agencies: the Japan Science and Technology Agency (JST) and the Japan International Cooperation Agency (JICA), as part of the Development of Low Carbon Society Scenarios for Asian Regions research project, also headed by Matsuoka.

Matsuoka's team has also been involved in similar joint studies in several other ASEAN countries, and has collaborated with each country's governmental institutions, such as the Thailand Greenhouse Gas Management Organization (TGO), the Institute of Strategy and Policy on Natural Resources and



Environment (ISPONRE) in Vietnam, the Cambodian Ministry of Environment (MOE), and the Ho Chi Minh City Climate Change Bureau in Vietnam. The fruits of those collaborations, expected to be disclosed soon, are anticipated to consolidate the ASEAN region's position at the forefront of the drive towards a global low-carbon society.

Author: Yuzuru Matsuoka, PhD Professor, Graduate School of Engineering WEB www.kyoto-u.ac.jp/en/research/forefront/message/rakuyu15_c.htm/

Voices of International What's Hidden in Inuyama?

In 2012, I got a great opportunity to do research at the Primate Research Institute (PRI) of Kyoto University in Inuyama City for six months. It was very exciting for me. Inuyama is a small, relaxing town full of nature and tranquility. What I was impressed with soon after my arrival was my lunch at the institute's restaurant. The Japanese food there is more delicious than any other I have ever eaten.

During my stay, I felt like I was at home thanks to the kind hospitality and assistance from all of the PRI staff and students. Dedicated teaching staff provide knowledge and technical guidance, which helped me succeed in my research on monkeys. The PRI has a lot of friendly apes and monkeys. They growl from early in the morning, but the sound encourages me. Please visit this nice place and say Hi to those growling ladies and gentlemen.



Ornjira Prakhongcheep PhD Candidate, Kasetsart University, Thailand

INTERNATIONAL PROJECT

Sustainable Energy and Environment Forum (SEE Forum)

Pioneering Academic Network to Explore New Horizons in Collaborative Programs Among Asian Countries.

In an effort to advance the "New Energy Initiative," which addresses global warming and energy security, two common problems throughout the Asian region, Kyoto University launched the Sustainable Energy and Environment Forum (SEE Forum) in 2006 as an international research and educational network in the region.

The SEE Forum is a pioneering initiative that seeks to expand horizons in crossborder collaborative programs in the Asian region, both through so-called "vertical" communication, as seen in such fields as technology, art and science, and through the moralistic "horizontal" communication that joins each field of science based on an equal partnership in the region.



ASEAN COST +3: New Energy Forum for Sustainable Environment (NEFSE), May 2008



The forum has yielded marked achievements in developing strong academic networks that have produced various collaborative research and education programs funded by the Japan Science and Technology Agency (JST), the Japan International Cooperation Agency (JICA), the UNESCO ODA Program, as well as local governmental agencies.

Author: Susumu Yoshikawa, PhD Chairman of the SEE Forum/ Professor, Institute of Advanced Energy WED www.seeforum.net/



Voices of Researchers) GPS-related research activity at Kyoto University

I joined the Research Institute for Sustainable Humanosphere of Kyoto University (Tsuda Laboratory) in May 2011. My research involves the analysis of GPS signals for both positioning and atmospheric water vapor retrieval. The work environment is excellent, thanks to the availability of a wide range of instruments and facilities for atmospheric sensing (e.g. GPS stations, radars, lidars, radiosondes), and to the interdisciplinarity of the research team, that has broadened my understanding of

atmospheric sciences and measuring techniques. I am grateful to my colleagues at RISH for their continuous help and support to let me carry out productively my research activities.

Eugenio Realini, PhD

Postdoctoral researcher, Research Institute for Sustainable Humanosphere www.researchgate.net/profile/Eugenio_Realini/



LARGE-SCALE PROJECTS

Collaborative Research in ASEAN Region

Kyoto University has been actively involved in research activities in the ASEAN region for many years, and the collaborative activities with ASEAN universities and research institutions are expanding these days.

THAILAND

Strengthening Japan–Thailand Relations

Developing cleaner fuels through a new five-year program.



Kyoto University has launched a Japan-Thailand collaborative research project titled "Development of clean and efficient utilization of low rank coals and biomass by solvent treatment," supported by the Japan Science and Technology Agency (JST) and the Japan International Cooperation Agency (JICA) through the Science and Technology Research Partnership for Sustainable Development (SATREPS) program. More than 15 Japanese

researchers from Kyoto University, Akita University, the Central Research Institute for Electric Power Industry (CRIEPI), and Kobe Steel Co. Ltd and 12 Thai researchers from the Joint Graduate School of Energy and Environment at King Mongkut's University of Technology Thonburi and PTT Public Company Limited will be involved in the project.

The five-year program will involve developing several technologies to convert biomass waste as well as low-rank coals into valuable products such as carbon fiber, biofuel, and high quality solid fuel based on a novel degradative solvent extraction technology developed at Kyoto University. The outcomes from this project



Carbon fibers (left) derived from biomass (right)

are expected to make a global impact in every respect. Clean and efficient utilization of low-rank coals as well as increased use of biomass will help to reduce CO_2 emission. The project may therefore help



to address the increasing demand for biomass energy, as well as the need to create local employment opportunities and generate income for farmers in developing countries.

Kouichi Miura, PhD (left) Specially Appointed Professor, Institute of Advanced Energy Hideaki Ohgaki, PhD (right) Professor, Institute of Advanced Energy WEB www.iae.kyoto-u.ac.jp/quantum/member.html

INDONESIA

Volcanic Hazard Mitigation in Indonesia

Mitigation of Hazards from Volcanic Eruptions and Induced Sedimentary Hazards.

Volcanic disasters are highly complicated, because eruptions are the only type of natural phenomenon ejecting large amounts of material from underground to the earth's surface. Many types of disasters are also induced by volcanic eruptions, such as lahars, debris flows, earthquakes, and tsunami.

Indonesia has 127 active volcanoes along the archipelago from Sumatra to Nusa Tenggara, Sulawesi and the Maluku Islands, and has suffered from numerous volcanic eruptions. Similarities between Indonesia and Japan include the existence of a



large number of active volcanoes and large residential populations in areas surrounding these volcanoes. Consequently there is great demand in both countries for evaluation of volcanic activity for evacuation and hazard mitigation during eruptions.

In 1993, I began a collaboration study with the then Volcanological Survey of Indonesia (presently named the Center for Volcanology and Geological Hazard Mitigation, Geological Agency, Ministry of Energy and Mineral Resources), which was responsible for monitoring volcanic activity and the issuing of alerts.

The 2010 eruption at Merapi volcano, Central Java, influenced me greatly, beginning with a vulcanian eruption that destroyed the lava dome at the summit. After a week of lessened activity, the volcano forcefully ejected a plume up to 10 km high and a pyroclastic flow reaching 17 km from the summit. More than 300 people were killed by this flow, and pyroclastic and ash-fall deposits induced frequent lahars along many rivers on the flanks of Mount Merapi.

This eruption brought into sharp focus the difficulties of forecasting transient activity and intensities, and the necessity of implementing countermeasures in a wider area and in cooperation with the study on secondary hazards such as lahars.

I am currently managing the SATREPS project "Integrated study on mitigation of multimodal disasters caused by ejection of volcanic products". This project aims to forecast sedimentary hazards along rivers and the dispersion of volcanic ash in the atmosphere affecting aviation safety, based on discharge rates

of volcanic ash from the crater. This discharge rate is estimated in real-time using monitoring apparatus, delivering a preliminary forecast based on the eruption history of the volcanoes and probable eruption scenarios. Eventually I hope to see volcanic ashfall forecasting on television alongside regular weather forecasts.



Masato Iguchi, PhD Professor, Disaster Prevention Research Institute WEB www.svo.dpri.kyoto-u.ac.jp/indonesia-vs/

PHILIPPINES

Why not an engineering for non-engineered systems?

An approach to mitigating natural disasters worldwide.



Figure 1 House along the coastline of Leyte Island

Much effort and funding have been used to expand the frontiers of engineering such as in the fields of architecture and civil engineering, as realized in the construction of high-rise buildings, long-span bridges, large-space structures, and wide-spread lifelines. Being vehicles of economic growth and also playing a role as iconic symbols of technological development, these stand out in society. And thanks to their careful design and construction they seldom fail in the event of a natural hazard — at least in developed countries.

Turing our eyes to natural disaster statistics worldwide, however, we see another picture. Many disasters occur on the opposite side of the "engineering frontier". Indeed, these disasters are often associated with failures of buildings and infrastructure systems that are empirically designed and

constructed without relying on engineering knowledge (Figures 1). In some cases, it is even fair to say that there is no such engineering knowledge available (Figure 2). This leads to the question: Why not an engineering for non-engineered systems? This is the starting point of my research.

Funded by Kyoto University as part of the SPIRITS (Supporting Program for Interaction-based Initiative Team Studies) program, my team has been developing an international research network with the ultimate goal of extending our engineering body of knowledge to include non-engineered systems, thereby providing engineering solutions to mitigate failures of such non-engineered systems. So far, the network consists of members from more than 11 organizations — research institutes, engineering societies, and non-governmental organizations — in nine countries. Aside from this



Figure 2 Our engineering body of knowledge.

SPIRITS project, I am also leading a project within the J-RAPID program funded by the Japan Science and Technology Agency for the reconstruction of areas of the Philippines struck by Typhoon Yolanda in 2013 (Figure 3). A case study of this J-RAPID project has, among other purposes, also addressed the need to develop engineering knowledge for non-engineered structures.



Figure 3 House under reconstruction by residentsafter Typhoon Yolanda

To improve implementation, I think it is important not to lose traditional, cultural, and societal continuity in improving the performance of these non-engineered systems, and moreover I would personally feel bored if these non-engineered systems lost their unique, local characteristics and were simply replaced by technologies we can see anywhere in cities like Tokyo or New York. Instead, why don't we dream of high-performance

bamboo houses on the coastline of Leyte Island or high-rise timber buildings in the city of Yangon?

Kazuyoshi Nishijima, PhD

Associate Professor, Disaster Prevention Research Institute WEB www.taifu.dpri.kyoto-u.ac.jp/en/



INDONESIA

Equatorial MU Radar (EMU)

Equatorial fountain in the middle and upper atmosphere over Indonesia.



We are studying coupling processes in the solarterrestrial system, focusing on solar energy inputs to Earth, and the response of the atmosphere to energy input. Solar energy can be divided into two parts: solar radiation involving infrared, visible, ultraviolet and X-ray, and solar wind, consisting of a high-speed flow of plasma particles. Electromagnetic energy due to solar wind converges into the polar region, while solar radiation reaches a maximum at the equator, and atmospheric disturbances are actively generated near the Earth's surface. In particular. cumulonimbus convection over Indonesia is the most active in the world, resulting in various atmospheric waves that propagate upward to transport energy

and momentum into the upper atmosphere. Different kinds of materials (atmospheric minor constituents) originating at low- and mid-latitude regions converge in the equatorial region, and are blown upward through the tropopause at about 15 km into the middle atmosphere (10-100 km), and spread across the whole globe. In the upper atmosphere, plasma disturbances and equatorial ionization anomalies are generated around the equator.

A number of international collaborative programs on the coupling processes in the solar-terrestrial system have been coordinated under the aegis of the Scientific Committee on Solar-Terrestrial Physics (SCOSTEP) of the International Council for Science (ICSU). We have contributed a great deal to such programs through observations particularly using a state-of-the-art large atmospheric radar that enables us to study the behavior of the troposphere (altitude up to 10-15 km), middle atmosphere (10-100 km), and upper atmosphere (above 100 km). We have developed the middle and upper atmosphere radar (MU radar) in Shigaraki, Japan, in 1984, and the Equatorial Atmosphere Radar (EAR) right over the equator in West Sumatra, Indonesia, in 2001. We are now promoting the construction of the Equatorial MU

Radar (EMU), which will be 10 times more sensitive than EAR. Using EMU, we aim to study and capture the energy and material flow occurring in all height ranges of the equatorial atmosphere — a phenomenon known as the equatorial fountain.

Toshitaka Tsuda, PhD

Professor, Research Institute for Sustainable Humanosphere / President of the Japan Geoscience Union WEB www.rish.kyoto-u.ac.jp/emu/index-e.html

FOSTERING THE NEXT GENERATION

首眉— The Hakubi Project A Unique Opportunity for Outstanding Young Talent

The Hakubi Project was established by Kyoto University in 2009 to foster outstanding young researchers. The program recruits twenty international researchers per year as associate and assistant professors. It gives them a valuable opportunity to devote themselves entirely to their research. The project is open to any researcher in any academic field. **WEB** www.hakubi.kyoto-u.ac.jp/eng

An Inquiry into the Nature of Mind

Research on Buddhist Sources from the Himalayas.

Socrates' famous injunction "Know Thyself" has interesting parallels in Buddhism which often defines supreme wisdom as "to know one's own mind as it truly is" (Sino-Japanese: 如 實知自心, *nyojitsu chi ji-shin*). The purpose of this project is to investigate this fundamental question of the nature of mind, or self-knowledge, according to the highest philosophical view known as the Great Perfection (Tibetan: *rdzogs chen*) in the Buddhist Himalayas (North India, Nepal, Bhutan, and Tibet). On the basis of in-depth research on primary texts and fieldwork, this project also includes interdisciplinary dialogue with cognitive sciences through workshops and international colloquia.





Marc-Henri Deroche, PhD

Tibetan painting describing levels of consciousness, $18^{\rm th}$ c., Karmay collection

Assistant Professor, The Hakubi Center for Advanced collection Research / Graduate School of Letters / also associated to the Centre National de la Recherche Scientifique, Paris (UMR 8155) www.hakubi.kyoto-u.ac.jp/eng/02_mem/h25/deroche.html

Is Love Blind?

Early Modern South Asian Authors Argue Otherwise.

Have you ever fallen in love? Do you remember your first date? Love makes you absorbed with thoughts of your lover. Love burns and consumes your entire being. Therefore, many South Asian religious traditions such as Buddhism, Jainism, and Hinduism consider love, or emotional attachment to be more

POINTS OF The Hakubi Seminar

Hakubi seminars are held at the Hakubi Center twice a month (on the first and third Tuesdays at 16:00), organized on a rotational basis by the Hakubi researchers themselves. These regular gatherings are attended by all Hakubi researchers. In April 2011, English became the official language for presentations and discussions.

WEB www.pri.kyoto-u.ac.jp/archives/index.html



Takayuki Saito, PhD

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Research Activities 2014

precise, as something fundamentally detrimental to the pursuit of enlightenment. However, South Asian thinkers in the school of Bhakti (devotion) argued that passionate and emotional attachment can become a powerful tool for enlightenment if it is targeted toward God. My research focuses on the development of this Bhakti school in the context of South Asian intellectual history, especially during its early modern period.

From the Editor Okita published "Hindu Theology in Early Modern South Asia: The Rise of Devotionalism and the Politics of Genealogy" from Oxford University Press on 31 July 2014.

Kiyokazu Okita, PhD

Assistant Professor, The Hakubi Center for Advanced Research, Kyoto University / Research Fellow, the Oxford Center for Hindu Studies, University of Oxford www.hakubi.kyoto-u.ac.jp/eng/02_mem/h25/okita.html

Exploring human-nature relationships

The effects of resource development on local livelihoods in Tropical Asia.

My research examines how to resolve the contradiction between natural resource development and the achievement of stable local livelihoods in Tropical Asia. Recently, largescale oil palm plantations in Tropical Asia have been spreading widely across borders. Palm oil produced from these plantations is exported to Japan, where it is widely used in daily life. However, in these circumstances, local people's way of life and society tend to be ignored. In this project, I examine how people can maintain a stable livelihood in areas where plantation development is in progress by comparing situations in several regions of Southeast Asia. In addition, I clarify the possibilities for

coexistence between natural resource development and the integrity of people's livelihoods that rely on these resources.

Yumi Kato, PhD

Assistant Professor, The Hakubi Center for Advanced Research www.hakubi.kyoto-u.ac.jp/eng/02_mem/h25/kato.html

What's in a Name?

The term hakubi (白眉), literally means 'white eyebrows' in Japanese (白: white, 眉: eyebrows). The word originates from a Three Kingdoms era (220-280 AD) Chinese legend: "Three kingdoms saga (三国志)". According to the legend, one of the kingdoms, called Shu (蜀), was home to five brothers with extraordinary talents. The fourth brother; 馬良季常 (Baryo Kijo), who was particularly outstanding, had white hairs in his eyebrows, and so the term hakubi has come to refer to particularly talented individuals.









FOSTERING THE NEXT GENERATION

The John Mung Program Opportunities to Explore Global Frontiers

Kyoto University launched the John Mung Program* (Kyoto University Young Scholars Overseas Visit Program) in 2012, as a project to support mid- and long-term research by junior faculty members at leading academic institutions overseas.

*The program is named after the Japanese sailor, Nakahama Manjirō, also known in English as "John Mung," who was the first Japanese to set foot on American soil in 1841. After he returned to Japan, he became a pioneering figure in developing the country's international relations.

The next generation, new Opening the door to the next generation with nanocarbon materials. Graph The next generation, now



Structures of graphene nanoribbons (GNRs).

Graphene nanoribbons (GNRs), one of the most promising nanocarbon structures, are attracting increasing attention as materials for next-generation semiconductors. The properties of GNRs strongly depend on their width and edge structure.

Recently, we have developed

GNRs with precisely controlled widths. Through my research at the National University of Singapore (NUS), I can further investigate GNRs using a Low-Temperature Scanning Tunneling Microscope

(LT-STM), which enables direct observation of the shapes of the molecular "wires". Using these powerful instruments, I would like to demonstrate their excellent properties. I also believe that young researchers and these nanocarbon materials hold the key to the next generation of devices.

Through the John Mung Program, I would like to become a bridge for long-running collaborations between Kyoto University and NUS.

> Takahiro Kojima, PhD Assistant Professor, Institute of Advanced Energy www.iae.kyoto-u.ac.jp/molecule/index.html



The John Mung Advanced Program



Kyoto University launched the John Mung Program (Kyoto University Young Scholars Overseas Visit Program) in 2012, as a project to support mid- and long-term research by junior faculty at overseas organizations. The objective of the program is to encourage young scholars to develop academic networks and promote collaborative research projects. This in turn will build a foundation to advance academic exchange, internationalize research activities, and facilitate the

expansion of external funding opportunities.

The program supports young scholars in two different ways. The Young Scholars Overseas Visit Program supports individual scholars by providing funds for their travel, living, and research expenses. The Program for Scholars' Home Laboratories provides funding to departments, laboratories, and other academic units to compensate for the absence of young scholars who are stationed abroad for over six months. Grants can be used to cover personnel and operational expenses incurred during the period of their absence.

In 2013, the program was revised as the John Mung

Fundamental Rules in Plant Diversity FOR-ECOL

Why does photosynthetic capacity vary across species?



Plants vary extensively in size, morphology and physiology, but in terms of their basic biology, there are some general rules. The "worldwide leaf economics spectrum" is such an example, describing the way in which leaves with high photosynthetic rates do not live long, and vice versa. And yet, the physiological basis is not fully clear. I spent three months at Macquarie University, Sydney, Australia, to collaborate with Dr. Ian Wright, who discovered the worldwide leaf economics spectrum. We collected and integrated various physiological data related

to the leaf economics spectrum from published and unpublished data sources in order to uncover the physiological basis underpinning the spectrum.

Yusuke Onoda, PhD



The worldwide leaf economics spectrum based on 2,548 species data. Photosynthetic rates vary >50 times across species and leaves with high photosynthetic rates are in general short-lived.

Assistant Professor, Graduate School of Agriculture www.rfecol.kais.kyoto-u.ac.jp/

MRI for Biofunctional Analysis

Studying in vivo analysis with magnetic resonance imaging.

During a stay in Finland at the Turku PET Centre, I was engaged in research on the development of in vivo magnetic resonance imaging (MRI) methods for small animals. At Kyoto University I have been developing molecular imaging probes for noninvasive functional imaging of diseases with nuclear medical or optical imaging techniques, so the MRI experience I gained at Turku will be helpful to widen my research field. I was also able to learn of different point



of view through daily communication with skillful physicists and mathematicians at the lab. I believe this experience was invaluable for my future research. I would like to



express my gratitude to everyone I met during this stay.

Takashi Temma, PhD

Adjunct Associate Professor, Graduate School of Pharmaceutical Science, Kyoto University / Laboratory Chief, Department of Investigative Radiology, National Cerebral and Cardiovascular Center Research Institute www.pharm.kyoto-u.ac.jp/byotai/

Advanced Program. The advanced program offers opportunities for overseas experience to a wider range of faculty members by expanding its scope of eligibility and offering more varied funding schemes. The advanced program allows scholars to apply as a team, in collaboration with other young scholars or students. This enables applicants to expand the scale of their projects. Through this program Kyoto University aims to cultivate an increased number of internationally-minded, leading scholars.

WEB www.john-man.rp.kyoto-u.ac.jp/en

	John Mung Program	John Mung Advanced Program
Category	Faculty Member	Faculty Member Non-tenure track scholar
Age	Under 40	Under 50
Period	3-12 months	3-24 months (1-3 months possible depending on a reason)
Unit	Individual	(Students can be included in a team)
Program for Scholar's Home Laboratories	Approx. \$2,000 /month/person	Approx. \$3,000/month/person

RESEARCH FRONTIERS

Cutting-Edge Research in Kyoto University

Kyoto University is known for the quality and diversity of its research. Each issue of Research Activities can only highlight a small selection of those endeavors, but we hope to convey an impression of the university's rich academic milieu.

Luminescent Ceramics Benefit a New LED Lamp!

Plate-shaped phosphors enable high-power and efficient solid-state lighting.





The Light Emitting Diode (LED) lamp is now widely replacing conventional incandescent lamps and fluorescent tubes, because it efficiently converts input electric-power into white light with no ultraviolet nor infrared light. Also LEDs are free from mercury and thus regarded as an environmental-friendly lighting device. In the LED lamp a blue LED is usually a key device combined with some powder phosphors doped with rare-earth ions, which absorb blue light and emit visible light with lower-energy. We have developed ceramic-plate phosphors with transparency for this combination to produce a white spectrum for illumination. Compared with the powder-form, the

ceramic plate has better thermal conductivity and high luminous efficiency. The paper of these results published in 2011 has been top-ranked both in the most-cited and most-downloaded articles among all the papers in Optical Materials journal since September 2013 to present.

Setsuhisa Tanabe, PhD

Shale

bedrock

Professor, Graduate School of Human and Environmental Studies www.talab.h.kyoto-u.ac.jp/



CO₂

New Method to Extract Shale Gas

Fracturing with carbon dioxide instead of water.

We have proposed a new method to extract shale gas (flammable methane gas) trapped in shale bedrock around 3,000 meters deep. Conventional methods to extract shale gas involve making cracks by injecting water into hard shale bedrock. In the new method, carbon dioxide (CO₂) is used instead of water. At great depths where shale gas is extracted, CO₂ becomes very slick, being in a so-called supercritical state. Since we found in our laboratory experiments that supercritical CO₂ can make finer cracks extending in a larger area, we expect CO₂ to produce more shale gas than



water. In arid regions such as deserts, this method offers greater advantages. Working in collaboration with Japan Oil, Gas and Metals National Corporation (JOGMEC), we aim to use this method in an actual shale gas field.

Tsuyoshi Ishida, PhD (left) Professor, Graduate School of Engineering Youqing Chen, PhD (right) Assistant Professor, Graduate School of Energy Science geo.kumst.kyoto-u.ac.jp/lab/member/Ishida_t/English.htm

What a big difference! Humans and chimpanzees descended from the same ape six million years ago.

Humans walk fully upright, but chimpanzees do not. Humans can make an iPad, but chimpanzees cannot. Chimpanzees have a gripping power strong enough to crush an apple, but humans do not. One may suppose that these differences originate from a significant difference in the genetic information between the two species. Recent genome sequencing projects, however, have revealed that 98% of human DNA is identical to that of chimpanzees. It is now widely thought that this difference of 2% alone may not be enough to explain the big differences between these two species. Our research group

focuses, as one clue, on chromosome structure. Chimpanzees, and also gorillas, maintain a lot of accessory structures at the tips of their chromosomes, which humans have lost during the last six million years. Loss of chromosomal parts may therefore be related to gaining new lifestyles.

Akihiko Koga, PhD Professor, Primate Research Institute www.pri.kyoto-u.ac.jp/index.html





How Does Water Migrate in Spaghetti?

Measurement of precise moisture profile in spaghetti.



We have developed a new method to measure the moisture profile in spaghetti or other pasta during the rehydration process. Using a digital camera and an image processing technique, it is possible to observe an increase in sample color brightness with increasing moisture content. Our method enables us to measure lower moisture content at a higher spatial resolution than currently used methods. The moisture profiles that we have obtained suggest that factors such as penetration of water into small holes and cracks on the surface of the pasta, water diffusion in the pasta, and structural relaxation of the protein matrix play important roles in the

rehydration mechanism. The data also suggest that starch granule gelatinization prevents water migration into the interior portion of the pasta.

> Shuji Adachi, PhD Professor, Graduate School of Agriculture www.bioeng.kais.kyoto-u.ac.jp/



English Past and Present

History of English from the Fifth Century to the Present Day.

The word *lord*, though monosyllabic today, goes back to the compound *hlaf-weard* in Old English, which meant the 'keeper of bread': hlaf corresponds to loaf in presentday English and *weard* is 'keeper'. Likewise, sad in the past had a different meaning: 'satisfied'. This is the type of research I conduct, while reading early English, which is often extant on parchments. It is quite time-consuming to read medieval manuscripts, as the text has a tendency to fade due to the passage of time. However, I



can appreciate that it was time-consuming for medieval scribes to transcribe them as well. It is certainly an art; I enjoy discovering the roots of English through these manuscripts.

Yoko Iyeiri, PhD

Professor, Graduate School of Letters homepage3.nifty.com/iyeiri/

Polychronicon, Tokyo, Senshu University Library, MS 1, fol.15r © Senshu University Library



The Kitchen: A Historical Record

Reconstructing history from the kitchen, where nature, mankind, and society converg.



History of the Kitchen in Modern Germany (2012)

The kitchen is a vital anchor for the global food system. Farmers produce crops and livestock, fishermen catch seafood, wholesalers buy them, retailers sell them, and we buy, cook, and eat them. In order to aid digestion, the food we eat is often cut, boiled, grilled, and masticated. The kitchen can be viewed as a "branch office" of the digestive system. In addition, the kitchen is not only an individual component, but also one that exists in a social and national context.

To illustrate one example, in National Socialist Germany, Adolf Hitler ordered German housewives to sort and preserve garbage from their kitchens to raise pigs in conditions specified by the National Socialists. The purpose was to achieve "self-sufficiency". Inevitably, the Third Reich reconstructed a military state as a large number of German civilians as well as soldiers suffered from hunger due to the Allied Powers' blockade during the First World War. However, housewives complained about this policy, as the specifications were extremely detailed and time-consuming. Their obligation was to cook for their families using food produced in Germany. In 1934, the Ministry of Food and Agriculture and the National Socialist Women's League began a campaign to protect food from hostile factors such as coldness, frost, heat, insects, and bacteria, representing the "enemy" to the ideal of

self-sufficiency. It was called *Kampf dem Verderb*, meaning "Struggle against Waste", and by implication, corruption, as *Verderb* refers to both waste and corruption. Notably, the name applies to both the natural phenomenon and the housewives themselves. During the Second World War, civilians were once again confronted by a food shortage. They came up with various ideas to cook. In a cookbook titled *Let's cook!* (1944), the author notes: "German housewives should be a machine" — highlighting just one way in which Hitler tried to control food consumption through the kitchen in Germany.

In my book, *History of the Kitchen in Modern Germany: Environmental History of 'Eating'* (2012), I state that the kitchen is a space where nature and politics intersect in ways that are dynamic and complex. In the kitchen, one can often find water, fire, people, some plant and animal products, and considerably more bacteria. Politicians, academics, bureaucrats, and the food industries are capable of controlling people's lives through their kitchens, for example, for the purpose of recruiting soldiers, or for developing new markets. During the course of my research in Germany, I collected many cookbooks from secondhand bookstores and libraries, which were written by economists, doctors, feminists, bureaucrats and private corporations. Cookbooks show us what the writers or publishers intend. In a cookbook published by Siemens, for example, a famous cookery writer explained how to cook using products such as an electric oven. Also, cookbooks tell us how others cook in their own kitchens; it is possible to imagine how people interpret the cookbook's recipe compared to the original.

My research does not focus on food itself. Instead, I examine the function of food in an ecological, social, and political context. The kitchen is one of the hottest battlefields pitting humans against nature, women versus men, and families versus the government or corporations. By familiarizing ourselves with the history of the kitchen, we may be able to understand how people lived in the past more vividly: How did they cook? What did they eat? With whom did

they cook and eat? These questions have not yet been fully addressed by historians. From the viewpoint of such a basic human condition, we may perhaps try to seek a world without hunger.



 Tatsushi Fujihara, PhD
 Associate Professor, Institute for Research in Humanities

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LAUREATES was published

Award-Winning Scholars at Kyoto University 1949-2013

This brochure aims to introduce Kyoto University researchers who have been awarded major international accolades since 1949, the year that Professor Hideki Yukawa received the Nobel Prize, to 2013, providing profiles of the

individual researchers, as well as their award-winning research.



WEB repository.kulib.kyoto-u.ac.jp/dspace/handle/2433/189403?locale=en

In Search of the Nature of Time

Presentism and Enigmas of Temporality.

My research interest can be summarized in just three words: what is time? This simple question leads us to a deep philosophical labyrinth because time matters for temporal beings like us in many respects. I have been tackling various issues, ranging from the phenomenological question of how we experience time to the metaphysical one of whether and how time passes. There are also serious tensions between our common sense and contemporary physics. While we ordinarily believe that the notion of simultaneity is absolute, the special theory of relativity would indicate otherwise.



The possibility of time travel seems to deny our freedom, both in the past and the future. In discussing these problems, I adopt the presentist thesis that everything is present. Presentism can shed some light on the nature of time.

Takeshi Sakon

Assistant for Faculty Development and Foreign Language, Graduate School of Letters fptconference.web.fc2.com/A_Frontier_of_Philosophy_of_Time/FPT_Top.html



Cost-saving Disease Resistance

Behavioral resistance in insects against pathogenic infection.



A: Termite infected by an entomopathhogenic fungus. B: Fungal hyphae invading the termite cuticle

Social insects use their sociality for survival. They have well-developed social behaviors to fight pathogenic infections. Such hygiene behaviors are observed in all insects including solitary insects. However, these behaviors may work more effectively in social insects. Instead of paying the high cost of producing antimicrobial compounds, termites clear out pathogens from their nestmates' cuticles and dispose of them through alimentary tracts. This hygiene behavior is referred to as grooming behavior. Observations of pathogen dynamics on host cuticles have revealed that behavioral resistance is one of the most effective means of fighting back pathogenic infection. To get the best results — which means the lowest cost with the highest

gal hyphae invading the termite cuticle protective effect — there should be some correlative links between pathogen perception, behavioral resistance, and the immune system in insects. Since the stage of perception should set off the whole protection process, the aim of the present study is to find links between perception and behavioral resistance or the immune system by focusing on termites and entomopathogenic fungi.



Aya Yanagawa, PhD

Assistant Professor, Research Institute of Sustainable Humanosphere

Ultimate Control of Material Properties

Ultraintense terahertz pulse boosts electron density 1,000-fold.

Spectroscopic and material sciences in the terahertz frequency region are being developed through advances in laser technology. Here, I succeeded in developing the world's strongest terahertz radiation pulse source. This pulse is the first ever with electric field strength of over 1 MV/cm and is strong enough to control an electrical property of material. In fact, by shining this terahertz light on a semiconductor for an incredibly short period of time — around a trillionth of a second — I successfully increased the density of free electrons, a key parameter in determining the semiconductor's electrical conductivity, by a factor of



roughly 1,000. This result opens a door to control functions of solids, chemical molecules, and biomaterials with a terahertz pulse.

From the Editor Dr. Hirori received the German Innovation Award "Gottfried Wagener Prize 2014" for his work on the generation of ultra-intense terahertz radiation sources and nonlinear spectroscopy.

Hideki Hirori, PhD Associate Professor, Institute for Integrated Cell-Material Sciences www.tanaka.icems.kyoto-u.ac.jp/

Regenerative medicine for ALS using human iPS cells

Transplanted glial cells improve the disease environment in spinal cords of ALS mice.

There is currently no effective cure for amyotrophic lateral sclerosis (ALS), which is characterized by a loss of motor neurons. Diseased glial cells are thought to accelerate motor neuron degeneration. My colleagues and I have found that

transplanted healthy glial cells derived from human induced pluripotent stem cells (iPSCs) can protect motor neurons in spinal cords and prolong the lifespan of ALS mice. Despite the hurdles ahead for human trials, all possible avenues provided



by iPSC technology should be considered and tested to combat this pervasive disease.

Haruhisa Inoue, PhD

Professor, Center for iPS Cell Research and Application www.cira.kyoto-u.ac.jp/e/research/inoue_summary.html



Schema of spinal cord transplantation



Transplanted cells expressing green fluorescent protein in spinal cords of ALS mice (Kondo et al., "Focal Transplantation of Human iPSC-Derived Glial-Rich Neural Progenitors Improves Lifespan of ALS Mice," Stem Cell Reports, 3, 242-249 (2014), http://dx.doi.org/10.1016/ j.stemcr.2014.05.017

Combating the middle-age spread

Activation and regeneration of brown fat by food components.



The question of why we gain weight is far from straightforward. Obesity — defined as an excess accumulation of white body fat — is becoming an increasingly urgent issue. The primary function of white body fat is to store lipids converted from foodderived sugar and fat. Brown body fat, on the other hand, uses stored lipids to generate heat. Recently, brown body fat loss and depression have been shown to lead to middle-aged spread known as chunen butori in Japanese. My aim is to help improve

the prevention of obesity-related diseases using food components. By elucidating the differentiation mechanism and physiological roles of brown body fat, my study aims to promote the development of novel therapies for obesity-related common diseases.



Teruo Kawada, PhD Professor, Graduate School of Agriculture www.foodfunc.kais.kyoto-u.ac.jp/index.html

Scanning electron microscope images and inner structures of (a) white and (b) brown body fat. Lipids in unilocular lipid droplets exist as one large globule as opposed to multiple small globules in multilocular droplets. Photograph Source: Professor Emeritus Hajime Sugihara, Saga University.

The Center for Southeast Asian Studies



S I majored in Southeast Asian studies at Kyoto University, ${
m A}$ for me, this Center for Southeast Asian Studies building is one of the most familiar features of the campus. The century-old brick building formerly belonged to the Kyoto Textile Company, but is currently used as a library.

In my first year of postgraduate study, many lectures and seminars used to be given on the second floor of the East building next to this building. At that time, as I couldn't understand what was discussed in class, or what "area studies" actually was, I sat facing

Using Communication to Ease Traffic Jams JRBAN-N

Requesting a behavioral plan has a strong effect on actual behavior.



A Social Psychological Theory of Behavior Change Process [T. Gärling, S. Fujii, Scand. J. Psychol., 43(1), 1-8 (2002)]

The basis of my study is to apply psychological approaches to account for social issues such as traffic congestion. Traffic congestion is a type of phenomenon generally recognized as a social dilemma, with conflicts between public and the private interests. Figure 1 shows the social psychological theory of the process of behavioral change. This theory is applied to Mobility Management, a soft measure to promote voluntary changes of individual travel behavior through communication such as asking to make a behavioral plan. Mobility Management for inhabitant

Ayu Miyakawa, PhD

reduced car use by around 19% and increased transportation use by approximately 32%*.

*H.Suzuki, A. Taniguchi, S. Fujii, Journal of JSCE, 62(4), 574-585 (2006)



Assistant Professor, Graduate School of Engineering trans.kuciv.kyoto-u.ac.jp/tba/member/miyakawa

Grassroots Research for Peacekeeping in Africa

Land rehabilitation and conflict prevention in Sahel, Africa.

Land degradation is causing a decline in crop and livestock production as well as exacerbating conflicts over land resources in Sahel, West Africa. Since 2000, I have been continuing to conduct research on these issues. To avoid the risk of land degradation and prevent food shortages, local people carry trash from their homesteads and add it to degraded land

trash input trial (Nov



as manure. I describe these trials experienced by the local community. I constructed 50 m x 50 m fenced plots with the cooperation of local people and scattered urban organic trash onto the degraded land. This experiment revealed



that urban trash input is a useful tool for plant recovery. I have a plan to apply this method for conflict prevention between farmers and herders.

From the Editor) Based on this research, Dr. Oyama received the Daido Life Foundation Incentive Award for Area Studies 2014.

Shuichi Oyama, PhD

Associate Professor, Graduate School of Asian and African Area Studies, The Center for African Area Studies www.africa.kyoto-u.ac.jp/eng/enmember/oyama.html

the window overlooking the courtyard and the library, and indulged in sketching these two chimneys, as well as my professors and classmates. I asked myself if it was the right choice to attend graduate school. However, I didn't want to give up the benefit of being able to stay in the lovely city of Kyoto for as long as five years, with the good justification of being a graduate student of the prestigious university. This is the only building I sketched while I was a student at Kyoto University, as I had much time to daydream in the East building.

Kiyoko Yamaguchi, PhD



After obtaining a PhD in Southeast Asian Area Studies from Kyoto University in 2005, Yamaguchi taught at the History Department of The Chinese University of Hong Kong from 2006 to 2014. Her architectural drawing was selected for The Royal Watercolour Society 2014 Competition.

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