



# Japan Society for the Promotion of Science

## San Francisco

2001 Addison Street, Suite 260 Berkeley, CA 94704 USA

### ANNOUNCEMENT OF UPCOMING EVENT



## JUNBA2012

“Institutional Research and Enrollment Management  
– Keys toward Internationalizing Japanese Universities”

The Japanese University Network in the Bay Area (JUNBA※) is pleased to announce that JUNBA 2012 will be held on January 9 and 10, 2012. This event will bring together Japanese university leaders to discuss evolutions in university management leading toward greater internationalization.

Date and Time: Monday, January 9, 2012: 1:30p.m. - 5:30p.m.  
Tuesday, January 10, 2012: 8:30a.m. - 6:00p.m.

Venue: San Francisco Airport Marriott  
1800 Old Bayshore Highway, Burlingame, CA 94010

Organized by: JUNBA:Japanese University Network in the Bay Area

Co-Organized by: Consulate General of Japan in San Francisco  
Japan Society for the Promotion of Science (JSPS)

Supported by: Ministry of Education, Culture, Sports, Science and  
Technology in Japan (MEXT)

For further information, please visit JUNBA’s webpage.↓  
<http://www.junba.org/junba2012.html>

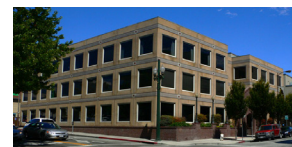
※JUNBA is a network among Japanese universities which have their offices in the Bay Area. The mission of JUNBA is to assist the enhancement of education and research activities and the creation of new businesses for Japanese universities by helping their internationalization movements, by helping the training of their students and personnel and by promoting a development of academia-industry relationships between Japan and the United States.

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Phone: 510-665-1890

Fax: 510-665-1891

Questions or Feedback?

Email: [jpsssf@jpsusa-sf.org](mailto:jpsssf@jpsusa-sf.org)

## EVENTS OF SUMMER 2011

### The 2nd meeting for university faculty members in the U.S.

JSPS San Francisco office convened the 2<sup>nd</sup> meeting for Japanese university faculty members in the U.S. on July 15th. The purpose of this meeting is to exchange information and build networks among faculty members of Japanese universities who are doing short-term research in the U.S. Six faculty members doing research at UC Berkeley and Stanford University and four staff from the Tokyo University of Science San Francisco office and JSPS San Francisco attended.

Starting with opening remarks by Dr. Seishi Takeda, participants introduced themselves briefly. They then engaged in a stimulating exchange of opinions regarding the differences in higher education between the U.S. and Japan, especially on the state of the academic research environment, the role of university faculty members and on the digitization of research resources. As for the digitization of research resources, they share the awareness that some educational and research activities are prevented due to the delay of digitization of academic journals and research materials.



At the reception held after the meeting, they engaged in lively conversation with each other, exchanging information on life in the U.S. and discussing their research activities. Many of the participants expressed thanks over this opportunity to build networks with other Japanese researchers whom they wouldn't have known otherwise. They were grateful for this networking opportunity which could be useful for their research activities.



## VISIT TO THE UNIVERSITY IN THE BAY AREA

### JSPS staff visited the E-learning lecture for students from Kagoshima University at Kagoshima University North American Center

Kagoshima University American Center has two international lectures for the Kagoshima University students. The first is called "Introduction of International Professionals" which are given by different Japanese speakers who have various professional skills and are active in North America each time. The second one is "Introduction on International Innovations", each speaker has a high level of expertise on IT, nano technology, health care and social welfare.

JSPS advisor Mr. Yamamoto and program coordinator Ms. Norita visited Kagoshima University North American Center on July 26<sup>th</sup> to listen to the e-learning lecture by Prof. Yuji Ide who is the director of the Kagoshima University North American Center.

He introduced the life of Kanaye Nagasawa who was a samurai in Satsuma prefecture during the Edo period and was sent to Europe by his master when he was only 14 years old. Nagasawa, the youngest of the group, was the only one who did not return to Japan after the Meiji restoration, when Japan was ready to take its place in the world. He moved to North America, established a winery business and succeeded. Prof. Ide wanted the students to think about being able to choose various ways in their student life. He commented that even Nagasawa, who was just 14 years old, could study abroad and enjoy his life so why not the students of Kagoshima University? He then went on to explain the merits of studying abroad.



After Dr. Ide's lecture, I hope that the students have gained an interest in studying abroad. It is very important for students to have a lot of experiences in not only Japan but also foreign countries. His lecture proved it. For more information on Kagoshima University and their activities, please visit their website:

<http://kokusai.kuas.kagoshima-u.ac.jp/kucip/global-contents/international-projects-program.html>

## VISIT TO THE UNIVERSITY IN THE BAY AREA

### JSPS staffs visited the Distance Learning Programs for the Osaka University undergraduate students at Osaka University San Francisco Center for Education and Research

Since 2005, Osaka University San Francisco Center for Education and Research has had Distance Learning Programs for their students in Japan, using high-speed Internet connection. In the spring semester of each year, they hold a program for undergraduate students of their university named "World Affairs Now - From San Francisco", in which twelve different lecturers who are enterprisingly working in the Bay Area on various fields give a lecture every Friday.

The main purpose of this program is to motivate and encourage the undergraduate students to live in other countries where they would gain opportunities for self-discovery and broaden their horizons.



With Ryoichi KUBOI (right), Sayaka MINAMI (the left)

JSPS staff observed one of these lectures held on July 21<sup>st</sup> which was titled "Jumping out of everyday life to various countries of the world". It was given by two lecturers from Osaka University San Francisco Center for Education and Research, Dr. Ryoichi KUBOI, Director and Akie MATSUYAMA, Program Coordinator. Based on one message "Ask yourselves, 'What are you?' and 'What are you doing for others?'," they pointed to some advantages of living abroad and explained the necessity of it. They also gave some substantial information for living and studying abroad, specifically, what possible options the students have, what kind of study programs are available for them and how to prepare for those options and programs. In addition, Dr. Kuboi, Ms. Matsuyama and Sayaka Minami, a staff member of San Francisco Center for Education and Research spoke about their

own experiences in other countries since they all have studied or worked abroad.

After the lecture, a guest speaker, Tsuyoshi YAMAMOTO from the Ministry of Education, Culture, Sports, Science & Technology in Japan who is working at JSPS San Francisco as an adviser, gave a short speech on his experience at work after which a lively question-and-answer session followed. The students were able to ask questions about their anxiety and concerns about living and studying in other countries.

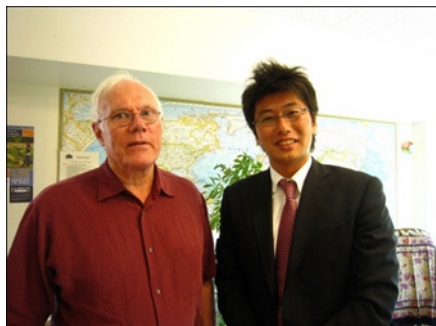
Next semester, from October 4<sup>th</sup>, Osaka University San Francisco Center for Education and Research will have another Distance Learning Program. The theme for the next program will be "Critical Thinking". The lecture style is designed similarly to that of American universities, and will be helpful for students to view and consider things using a multidimensional approach.

For more information on Osaka University and its activities, please visit the website: <http://www.osaka-u-sf.org>

# VISIT TO THE UNIVERSITY IN THE U.S.

## LEAPers, be ambitious!

On August 19th, our Advisor, Tsuyoshi Yamamoto, visited the Office of International Programs (OIP) at Montana State University (MSU). He talked with Dr. Norman Peterson, Vice Provost for International Education at MSU about the Long-term Education Administrators Program (LEAP).



Left: Dr. Norman Peterson  
Right: Mr. Tsuyoshi Yamamoto



### What is LEAP?

<http://www.montana.edu/international/training/LEAP/index.htm>

LEAP was established in 1996 as a year-long professional development program supported by the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT). Its' goals are to help participants improve their English, learn about the U.S. higher education system, and develop an understanding of the operations and programming of international programs offices. Administrative staff members at MEXT, Japanese national universities, and other institutions participate in this program. First, the participants spend a year at MEXT and work for divisions that are related to international affairs. After that, they arrive in the U.S. at the beginning of April and start a one-year program.

In the U.S., the LEAP program begins with a six-month program at Montana State University in Bozeman, Montana. While at MSU, participants attend intensive English classes and individualized tutoring sessions, work as an intern at a MSU campus office, go to the annual NAFSA conference, attend a series of focused "Colloquium" lectures on topics related to university and international program operations, and give a group presentation about Japanese culture to MSU and the Bozeman community.

In mid-October, LEAP participants called "LEAPers" move to another U.S. university or institution to begin a six-month practicum internship in an international programs office. The LEAP program culminates in a visit to Washington D.C., for a series of presentations from professionals working in various government, non-profit, and Presidential Association offices.



LEAP 2008 in Washington D.C.  
for NAFSA Conference

# VISIT TO THE UNIVERSITY IN THE U.S.

## Nurturing leaders of the international education field

“I would like LEAPers to play important roles in the field of international education after they go back to Japan,” said Dr. Peterson.

The Colloquium is a series of 14 lectures that provides essential information about U.S. higher education that relates directly to the internationalization of Japanese universities. The participants have the opportunity to meet, learn from, and network with a wide array of guest speakers who are all experts in their field. Presentations focus on the following macro themes: the structure of U.S. higher education, university governance and finance, institutional planning and analysis, international program administration, international university partnerships, education abroad programs, international student and scholar services, international student recruitment, and the strategic internationalization of the university.

2011-2012 LEAP Schedule: <http://www.montana.edu/international/training/LEAP/schedule.htm>

Of course, it is not necessary to copy the American style at Japanese universities because the culture, educational system, or circumstances are very different from one other. But, LEAPers, who know both the Japanese university system and American university system very well, can compare the two systems and think about appropriate ways to improve Japanese universities, especially in terms of internationalization. They can also be helpful in improving the understanding of the often confusing U.S. higher education system in Japan.

“The LEAPers are always very dedicated, enthusiastic, goal oriented, highly motivated, and hardworking. They all do very well in the Colloquium,” Dr. Peterson said. But he also feels that “They sometimes don’t have enough opportunity to contribute to the international education field after they return to Japan. They are not always assigned to an international affairs division. Or, even if they are fortunately assigned to that field, they are often moved to other areas in 2 or 3 years. I wish we could work together after LEAPers go back to their home institutions.” In this way, Dr. Peterson referred to the difficulty associated with the Japanese personnel rotation system.

## As cultural ambassadors

Mr. Yamamoto thought that there should be some benefit not only for the Japanese university staff members but also for MSU. He posed the following question to Dr. Peterson, “What is the benefit for you in accepting LEAPers on to your campus?” “They are cultural ambassadors,” he replied. According to the 2010 census, the population of the Bozeman, hometown of MSU, is less than 40,000. “Bozeman is a relatively small town. It is hard to find Japanese people, nor even other Asians. So, some people in Bozeman don’t have opportunities to learn about Japan and the Japanese people. During their stays in Bozeman, the LEAPers contribute to the cultural diversity of the area and improve this situation.” Every year, over 100 Bozeman community members attend the LEAP final presentation that is held in mid-October.



LEAP 2011 Final Presentation

# VISIT TO THE UNIVERSITY IN THE U.S.

## Other examples of the benefit from LEAP

According to Dr. Peterson, the LEAP program served as the impetus and model for the development of a flourishing administrative staff exchange program between the University of California Davis and Kyoto University a few years ago.

Also, one of the LEAP alumni took the initiative to create a training program at MSU for administrative staff at the National Institute for Materials Science (NIMS) in 2007. This program began when NIMS decided they needed to strategically internationalize their campus and administrators.

In addition to the beneficial outcomes of the training programs, many LEAP alumni maintain relationships with their supervisors, mentors, friends, and contacts in the United States. "It is my pleasure to see LEAP alumni at international conferences such as NAFSA," Dr. Peterson said.

## Voice from the LEAP Alumni

Ms. Natsuko Kamiya who was a participant of 2010-2011 LEAP and is now working for the University of Tokyo commented about her LEAP experience below.

"I participated in LEAP from April 2010 to March 2011. LEAP was a life-changing experience and it positively affected me in many ways. Especially, the experience of interning at local U.S. universities improved my knowledge and skills for my career. Now, I work in international student services at the University of Tokyo by using what I learnt through the program. I would like to be some help for the international students here just like people in the U.S. supported us during our stay. I really appreciate MSU, MEXT and my university to give me such a wonderful opportunity. Thank you!"



LEAP 2010 with MSU President Waded Cruzado

## Future of LEAP

Since the inception of LEAP, more than 100 administrators participated in this program. Dr. Peterson thinks that it would be great if all LEAP participants could have a gathering in the future.

Dr. Peterson finished off the meeting as follows. "LEAP is a wonderful and unique program. I have never heard any year-long programs that focus on administrative staff skill other than LEAP, even in the Fulbright programs. I hope this program will last as long as possible and play a role in the intercommunion of Japan-U.S. higher education."

# VISIT TO THE UNIVERSITY IN THE U.S.

## Message from Dr. Peterson to the LEAP alumni

Dear LEAPers,

Greetings from Bozeman and all your friends and colleagues at MSU. I hope all is going well with your careers and lives back in Japan. It was a great pleasure to have you with us in Bozeman, and I hope you have found your LEAP experience to be helpful and valuable in your work. Please take a few moments to let me know how things are going with you. My email is [normp@montana.edu](mailto:normp@montana.edu). I hope to see you in the near future and remember "LEAPers, be ambitious!"

Take Care,

Norm Peterson

Norman J. Peterson  
Montana State University



Norman Peterson is the Vice Provost for International Education at Montana State University. Prior to assuming this position, Peterson served as the founding Executive Director for the Alliance for International Educational and Cultural Exchange in Washington DC. He has also held international education positions at Georgetown University, the University of Maryland, and the University of Colorado. Peterson is actively involved in the many international education organizations, currently serving as the Chair of the AIEA Policy Advisory Board, is a member of the Board of Directors of the American International Recruitment Council, and is a Past Chair of NAFSA's International Educational Leadership Knowledge Community. Peterson holds a Ph.D. in philosophy from the University of Colorado.

# THE OFFICE STAFF SWITCH

## JSPS San Francisco Office Welcomes three New Members

### Toko Ueta , a new Deputy Director of JSPS San Francisco



Toko Ueta, the new Deputy Director for the San Francisco Office, is excited to make her come back to the United States after 4 years; she once interned at UCEAP in Santa Barbara through one of the University of Tokyo's training programs for administration staff. Before the internship, she worked for architectural offices both in a private company and a couple of universities, which seems a somewhat unusual career as an international office worker to-be. Still, that internship in the US and several years of working experience in the international affairs department of Todai gave her this opportunity to work at JSPS SF Office where she is now all gung-ho about the work.

Although this is the first time for her to be in middle management position, she believes that, with her colleagues' capability and passion for cause, it is definitely possible to achieve JSPS SF Office's missions and her professional goal here: to introduce JSPS fellowships to as many researchers as possible by holding various explanatory sessions. In fact, her colleagues and she will participate in their very first in coming November.

Besides her love for biking, balloons and baking, recently she is fascinated by driving. You might spot her black car bringing her to a university or a national park as she enjoys the magnificent sceneries of Golden Stare through her windshield.

### Mai Masaki, a new Deputy Director of Tokyo University of Science San Francisco Office



Mai Masaki is the 5th deputy chief of the Tokyo University of Science (TUS) San Francisco office. She worked for TUS for 8 years prior to working for San Francisco office. Working her way up through some different positions, her first workplace was the 125<sup>th</sup> Anniversary Preparations Office, her second workplace was the Kuki-Campus Office and her last workplace was the Public Relations Office. She hopes to use this knowledge and experience in her life in the United States. During her stay, she hopes to make a basis for good relations between TUS and alumni in the Bay Area. In addition, she coordinates TUS students and develops networks with companies and universities.

She is glad that UC Berkeley is near her office. She is interested in spending her lunch break there, people watching, seeing many places and attending many events there. She also looks forward to enjoying Berkeley life.

### Toshiaki Tanaka, a new Adviser form MEXT



Toshiaki Tanaka was dispatched from MEXT (Ministry of Education, Culture, Sports, Science and Technology) to UCOP (University of California, Office of the President) at the beginning of September. He is the 11<sup>th</sup> MEXT fellow that works at UCOP and learns about the University of California system. At the same time, he works at JSPS San Francisco as Adviser by supporting the operation of our office.

He has worked at MEXT since 1995. Though his past working experience has usually focused on the affairs of elementary and secondary education, this past year, his work was related to research promotion such as creating funding for JSPS in order to improve the financial support system for researchers.

So far he has never engaged in international affairs and this is his first time to live and work in a foreign country. However, he now thinks this is a valuable experience which is extremely profitable for not only his work but also his life in the future. He hopes to visit various educational and research facilities, and to meet as many people as possible to expand his view. In addition, he is looking forward to enjoying Californian life with his family and friends.



# BAY AREA & JAPAN RELATED NEWS



## 東京工業大学

Tokyo Institute of Technology

### Tokyo Tech Student's Team Wins at IDC Robocon 2011

A student from Tokyo Institute of Technology (Tokyo Tech) was one of the members of the winning team at the IDC (International Design Competition) Robocon contest hosted at the Massachusetts Institute of Technology (MIT).

2011 marked the 22<sup>nd</sup> robot design contest event, which was originally created by Tokyo Tech and MIT. IDC Robocon is not a contest between institutions; instead, it brings together members from different universities and countries, forming mixed teams, who compete in this globally challenging event. The participants work together for two weeks, overcoming startling differences in language and culture, cooperatively working toward the same goal of designing and building robots.

This year's contest was held from July 25 to August 5 at MIT in Boston, under the theme of "RoboHacks: Mechanizing MIT's Best Practical Jokes".

The Tokyo Tech participants were selected in a contest held as a part of the Introduction to Creative Design class by the Department of Control and Systems Engineering. Six undergraduate students who won the prestigious contest were selected to go to Boston, where they debated and cooperated with other participants in their multi-cultural teams.

In the final round held on August 5, Team Brown, with one Tokyo Tech student, won the first prize.

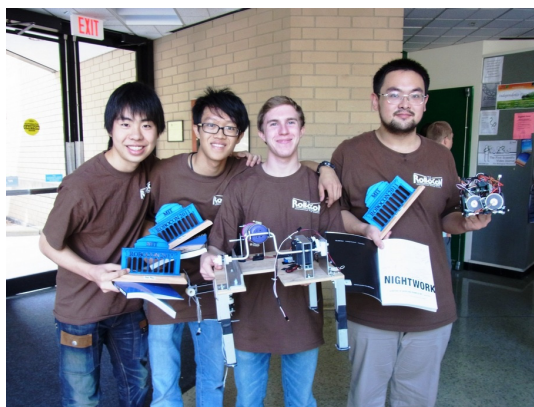
For more details please refer to the following website: <http://www.idc-robocon.org/e/index.html>



Heated Game on the Contest Field



Winning Moment



Team Brown Shows Off Winners' Plaques

## Tottori University

### Human artificial chromosomes for gene delivery and animal models



Tottori University, Chromosome Engineering Research Center

86 Nishi-cho, Yonago, Tottori 683-8503, Japan

(Contact :Mitsuo Oshimura , E-mail: [oshimura@grape.med.tottori-u.ac.jp](mailto:oshimura@grape.med.tottori-u.ac.jp), Tel: +81-859-38-6211)

#### <Abstract>

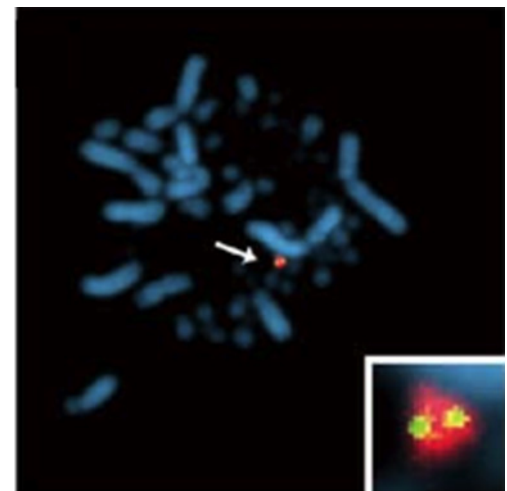
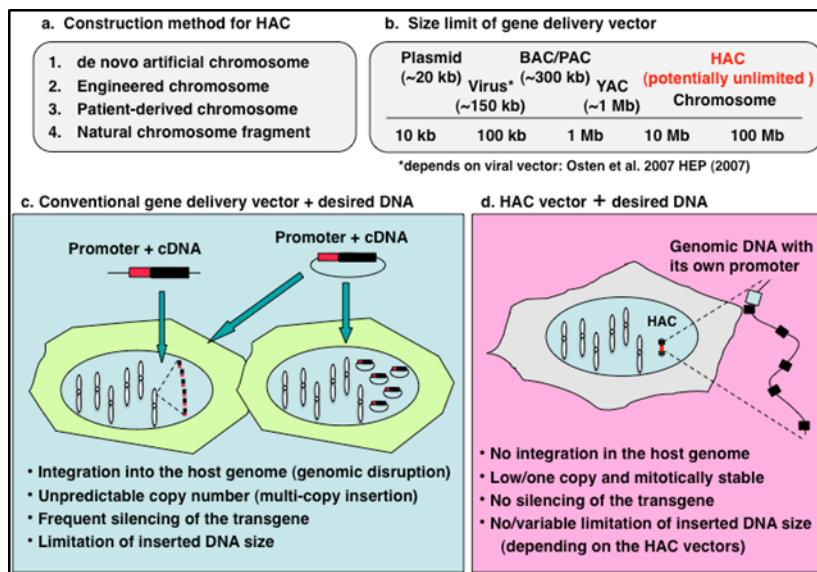
Random integration of conventional gene delivery vectors such as viruses and plasmids can be associated with transgene silencing. Furthermore, integrated viral sequences can activate oncogenes adjacent to the insertion site resulting in cancer. Human artificial chromosomes (HACs) exhibit several important characteristics desired for an ideal gene delivery vector, including stable episomal maintenance, and the capacity to carry large genomic loci with their regulatory elements, thus allowing physiological regulation of the introduced gene in a manner similar to that of the native chromosome. Recently, we developed a novel HAC vector of known sequence containing no endogenous genes from a human chromosome 21. The resulting HAC vector contains four useful features: (1) it has a well-defined genetic architecture; (2) it is episomally present, independent of the host chromosomes; (3) it is mitotically stable *in vitro* and *in vivo*; and (4) it has a system for safeguarding against tumor formation. Thus, this novel HAC vector is useful not only for gene and cell therapy, but also for animal transgenesis.

#### <Reference>

- 1) Kazuki Y et al. (2011) Refined human artificial chromosome vectors for gene therapy and animal transgenesis. *Gene therapy*. Volume 18, number 4: 384-93.
- 2) Yamaguchi S et al. (2011) A method for producing transgenic cells using a multi-integrase system on a human artificial chromosome vector. *PLoS One*. 6(2):e17267.
- 3) Kazuki Y and Oshimura M. (2011) Human Artificial Chromosomes for Gene Delivery and the Development of Animal Models. *Mol Ther*. Jul 12. doi: 10.1038/mt.2011.136.
- 4) Tedesco F et al. (2011) Stem Cell-Mediated Transfer of a Human Artificial Chromosome Containing the Entire Dystrophin Locus Ameliorates Muscular Dystrophy. *Science TM*, Aug 17;3(96):96ra78.

Figure 1. Potential characteristics of human artificial chromosomes (HACs)

Figure 2. FISH analysis in DT40 cells with HAC



# BAY AREA & JAPAN RELATED NEWS

## The University of Tokyo Deans Forum on Engineering



Our economy, society, and living environment have changed to match a new tide of internationalization and globalization. Throughout the last half-century, engineering has contributed to the foundation of nations, regions, and economic growth. The role of engineering in the decades to come then is to lead the revolution by conceptualizing this future society and presenting the blueprints to sustain and develop it. The earthquake and tsunami on March 11, 2011, made us rethink the mission and the role of engineering, and set out on a new course of action.

The University of Tokyo's School of Engineering invites the president, dean, or representative of engineering schools to hold the Deans Forum on Engineering among the world's leading engineering universities; UC Berkeley, MIT, Imperial College London, Swiss Federal Institute of Technology Zurich, Royal Institute of Technology (Sweden). We seek to deepen a mutual understanding of the issues and strategies of our respective universities and formulate possible solutions together. Through comprehensive dialogue on engineering education and research, development of greater human resources, and university organization, we hope to forge new elements of cooperation and collaboration in the field of engineering.

### Program:

7 November	9:00-12:35	Opening Session and Lectures by delegates (Open Session)
	14:00-17:30	Sectional meeting (Closed Session)
8 November	9:00-11:30	Plenary meeting (Closed Session)
	11:30-12:30	Joint statement by delegates (Open Session)

The venue for the Open Session : Professors' Hall, Eng. Bld. #8 in the University of Tokyo

### Co-Chairs:

Takehiko Kitamori, Dean, School of Engineering, The University of Tokyo

Tze-Chiang Chen, IBM Fellow & Vice President, IBM

**URL:** <http://www.t.u-tokyo.ac.jp/epage/topics/2011/dfmov.html>

Online pre-registration is available.

### Inquiry:

Office of International Cooperation and Exchange(OICE)

School of Engineering, The University of Tokyo

TEL: +81-(0)3-5841-7791/1678

E-mail: [t-oice@t-adm.t.u-tokyo.ac.jp](mailto:t-oice@t-adm.t.u-tokyo.ac.jp)

# BAY AREA & JAPAN RELATED NEWS

## The University of Tokushima

### UT Silicon Valley Branch Opening Ceremony and Seminar

The Opening Ceremony of the University of Tokushima Silicon Valley Branch was held at Sheraton Palo Alto on September 15<sup>th</sup>, 2011 with 50 invited guests. Dr. KAGAWA, President and Dr. FUKUI, Vice President (Executive Director for Scientific Research) and Dr. WADA, Vice President (Executive Director for Education and Student Affairs) of the University of Tokushima greeted them. We are also proud of the success of the first University of Tokushima New Technology Seminar attended by over 90 guests.



#### Why Silicon Valley?

The San Francisco Bay Area is blessed with many of the best New Business Facilities and R&D centers in the U.S. In fact, Stanford University, University of California at Berkeley, University of California at San Francisco, and others exemplify the areas proud of the history of industry-university cooperation. Importantly, the area features a strong Japanese network formed by organizations like JSPS and JUNBA. In addition, this area is home to many entrepreneurs, businessmen, and educators who have a strong desire to contribute to Japan's development. Mr. Hiroyuki Masumoto, President and CEO of B-Bridge International, Inc. is among them. We hope that our new presence in the Bay Area will help introduce Japanese technology to the world and energize the Japanese Industry. The University of Tokushima is happy to have partnered with B-Bridge International, Inc. in Silicon Valley for the past year in an effort to further those goals.

To close the opening ceremony, Dr. Masato MATSUO, President of JUNBA, gave an introduction on JUNBA, a network of Japanese university offices in the Bay Area, which was followed by a brief introduction of Dr. Seishi TAKEDA, Director of JSPS San Francisco and of Yuji IDE, Executive Director of Kagoshima University, and their staff. At the end, Dr. MATSUO raised a glass and proposed a toast for the further development of Japanese organizations.

In this first seminar held by UT Silicon Valley Branch office, multiple university technologies were introduced along with promoting international research collaboration and technology transfer. We proudly featured Dr. Robert Kneller, who discussed the benefits of collaboration between the Bay Area and Japan. Tokushima University researchers then introduced their advancements in the study of diabetes which was fascinating for everyone to hear.

We are looking forward to working with you, and hope to see you again at the next seminar or networking event. Your continued support is greatly appreciated.

If you have any comments or questions, please feel free to contact us at [hq@b-bridge.com](mailto:hq@b-bridge.com).



## Interview with JSPS Fellow in the U.S.



### Dr. Makoto Miyakoshi

2003: B.S., Department of Philosophy, School of Letters, Arts, and Sciences I, Waseda University

2005: M.S., Graduate School of Environmental Studies, Department of Social and Human environment, Nagoya University

2005-2008: JSPS Research Fellow (DC1)

2008-2011: Research fellow in National Center for Geriatrics and Gerontology

2011: Ph.D. in Psychology, Graduate School of Environmental Studies, Department of Social and Human environment, Nagoya University

2011-present: JSPS Postdoctoral Research Fellow at Swartz Center for Computational Neuroscience, Institute for Neural Computation, University of California, San Diego

Makoto Miyakoshi is a researcher in the field of psychophysiology and computational neuroscience. He has been using electroencephalogram (EEG) and functional magnetic resonance imaging (fMRI) to investigate brain activities associated with sensory and cognitive processes.

#### Q1: Why did you choose the U.S. to pursue your research?

I chose the U.S. to pursue my research because Scott Makeig was there. He is my current boss, and one of the pioneers in the field of computational neuroscience using EEG. I have been fascinated by his work since I started research in the current field. Before coming to his lab, I luckily had several chances to meet him and talk with him, and I found he is a very nice person too. This is the main reason why I came to the U.S. Other than this, it is certainly nice that people here speak English which I have learned in school, and American culture should also be familiar to most Japanese.

#### Q2: What is your impression of the research environment in the U.S.? How is it different from your lab in Japan?

It is difficult to find a similar laboratory in Japan, so making a comparison is hard. However, I know my current environment is great. My research field is computational neuroscience, which requires collaboration among neuroscientists, psychologists, and mathematicians. This is exactly what the current laboratory is dedicated to.

#### Q3: What merits do you derive from

#### conducting your research in the U.S.?

I can learn what I don't know from others who are specialists of the field. I can also use a tool developed by other lab members which is much better than my own scripts. These are the merits I can receive from my environment. It makes me consider what I can contribute to them for the give and take and synergy. It is also exciting that every month several researchers come to the lab from various countries for a short-term stay. It is interesting to talk with them not only about their research but also about the culture and politics of their home country. People in my lab are open-minded and respect others regardless of age, culture, or background. There is always a pleasant air in the lab which I like a lot.

#### Q4: What is your dream? And do you have any advice about doing research abroad for young researchers?

As an EEG researcher, my dream is my current research field because it is capable of answering the question of who we are and I like the way it works a lot. Below is an explanation of my liking. I have been seeing patterns of electric oscillations of the brain, which are beautiful. Researchers in other fields sometimes say data is beautiful, but it means the data supports their hypothesis. This is not what I mean, because our analysis is usually hypothesis-free. When I say data is beautiful, it is in the sense that people find patterns in the clouds in an autumn sky, water ripples on the beach, or wind ripples on the desert as beautiful from impressions of primitive aesthetics. These patterns in EEG are usually hidden be-

cause raw data is too crude, so mathematicians have developed sophisticated methods to estimate true data structure since 1995 (discovery of independent component analysis). What is fascinating to me is that these mathematical methods know nothing about physiology, but it can rightly deal this data to eventually produce something physiologically meaningful. I believe this pre-established harmony is evidence that this approach is just right. Computational neuroscience is thus the field where mathematics blindly but inevitably encounters physiology. At the same time, it is also like a gallery of brain activities where our aesthetic evaluation makes neuroscientific sense. It also has realistic outputs; discovering and decoding these oscillatory patterns benefits researchers of brain-computer interface and clinical doctors including psychiatrists and neurologists. I would be happy if I can make a contribution to this field.

My advice for young researcher is that going abroad is a great chance to stay in the world's best laboratory in your research field, so never hesitate to take the chance.

## Interview with JSPS Fellow in the U.S.

### Dr. Masaaki Kitajima

2006: B.S., Department of Urban Engineering, The University of Tokyo

2008: M.S., Department of Urban Engineering, The University of Tokyo

2008-2011: JSPS Research Fellow (DC1)

2009-2010: Visiting Research Engineer at Department of Civil, Architectural and Environmental Engineering, Drexel University (the Excellent Young Researcher Overseas Visit Program of JSPS)

2011: Ph.D., Department of Urban Engineering, The University of Tokyo

2011-present: JSPS Postdoctoral Fellow for Research Abroad / Visiting Scholar at Department of Soil, Water and Environmental Science, The University of Arizona



Dr. Masaaki Kitajima has been studying environmental virology and quantitative microbial risk assessment. He was educated and conferred a Ph.D. as an environmental engineer at the Department of Urban Engineering, The University of Tokyo, and has particularly focused on the prevalence and genetic diversity of human pathogenic viruses in water environments. The study of norovirus, more commonly known as, “winter vomiting disease” or “gastric flu” from an environmental perspective is a major research interest for him.

Dr. Kitajima has conducted collaborative studies with research groups from the National Institute of Infectious Diseases in Japan and Drexel University in the U.S. to learn molecular techniques and microbial dose-response analysis, respectively. His research experience involves molecular detection of pathogenic viruses in water environments in Japan as well as in Southeast Asian developing countries like, Vietnam and Cambodia .

#### Q1: Why did you choose the U.S. to pursue your research?

Conducting research in the U.S. was one of my long-cherished dreams. I believed that this is a very good opportunity to expand my international research experience. The U.S. is widely considered a leading country in most scientific fields. This is especially true for environmental virology and microbial risk assessment. I wanted to put myself to the test to see if I could do well in the research environment of a foreign country. When I was a Ph.D. student I had opportunities to study in the U.S. through the Excellent Young Researcher Overseas Visit Program of

JSPS and to visit eight laboratories around the U.S. to have discussions with professors, researchers, and students in the laboratories. This exciting experience was really impressive for me and drove me to decide to work in the U.S. as a Ph.D. researcher. I chose the laboratory of Dr. Charles P. Gerba because I wanted to work with a pioneer of environmental virology and someone who has educated so many researchers in my field.

#### Q2: What is your impression of the research environment in the U.S.? How is it different from your lab in Japan?

I have worked in two U.S. laboratories under Dr. Charles Haas at Drexel University studying quantitative microbial risk assessment and Dr. Charles Gerba at the University of Arizona studying environmental virology. There are many more researchers and students focusing on a specific topic here than in my old lab in Japan. Fellow researchers from both labs have opened my eyes to numerous novel and exciting research areas. Also, I realized that a number of institutions related to my field, such as U.S. Environmental Protection Agency, Department of Homeland Security, U.S. Department of Agriculture, local governments, and universities provide numerous funding sources for scientific research.

#### Q3: What merits do you derive from conducting your research in the U.S.?

I now realize the meaning of the saying, “A picture’s worth a thousand words”. I am now able to learn a lot of unpublished techniques and knowledge working in a new laboratory. In addition, I can keep access to up-to-date

information on fast-evolving technology, such as next-generation sequencing, through participating in a conference and/or a conversation with colleagues more easily here in the U.S.

#### Q4: What is your dream? And do you have any advice about doing research abroad for young researchers?

My next dream is to establish my own laboratory in the U.S. To do so, I need to obtain a tenure position so I can be a principal investigator to receive research grants. I would like to conduct research contributing to the eradication of water and foodborne viral pathogens, especially norovirus, and to protect human health. I would recommend young researchers to interact with leading scientists while attending international conferences. I have found that there is a great deal of effort in moving to another country to pursue your research interests. A new country, culture, and language may provide barriers to a successful research career outside of Japan. However, students who choose the hard road - the road least traveled - will be rewarded many times over for their efforts, provide them with added confidence, and grow independence for their future research endeavors. I think Japanese students are generally hard working and well educated and have comparable research ability to American students, making them excellent contenders in international research environments. Young researchers, be ambitious and international!