



Japan Society for the Promotion of Science

San Francisco Volume XXVIII Issue January 2013



EVENTS OF FALL 2012

Symposium with University of Hawaii at Manoa

“Culture, Technology, and Transnationality in the Cold War Asia and Pacific”



On 15-16 November, JSPS San Francisco held a jointly sponsored symposium with the University of Hawaii at Manoa on the theme “Culture, Technology, and Transnationality in the Cold War Asia and Pacific”. The aim of this symposium was to get a better understanding of trans-Pacific exchange of culture, science, and

technology as a crucial site of Cold War geopolitical dynamics through the lectures of key figures. This full day symposium open to the public and half day workshop for participants only, included presentations by five lecturers from Japanese universities and lecturers from American universities.

Mr. Toyohi Shigeeda, Consulate General of Japan in Honolulu and Dr. Seishi Takeda, Director of JSPS San Francisco led the event with opening remarks.

During the symposium, lectures dealt with various contentious issues currently affecting Japan-U.S relations, for example, peaceful use of nuclear energy, changes to Japanese eating habits caused by the influx of an American life style, women’s social advancement and so on. They shared ideas on the interchange of culture and information during the Cold War and discussed the future direction of international exchange in the Asia-Pacific basin animatedly.

JSPS San Francisco hopes that such active interchange will lead to wider networking between Japanese and U.S researchers.



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EVENTS OF FALL 2012

Fellowship Information Session at Yale University



On the refreshingly drizzling autumn day of Oct 23, 2012, JSPS San Francisco Office held a Fellowship Information Session at Yale University to promote JSPS Fellowship Programs for foreign researchers.

Elizabeth Wilkinson, Assistant Director for International Initiatives at the Office of International Affairs of Yale, made this session possible. After her opening remarks, Prof. Tadamasu Kimura, Prof. Jun Suzuki, and Dr. Takeshi Fukaya, all from the University of Tokyo, spoke about their

stories as young researchers. Their exciting talks about their interests, their experiences abroad, and the study environments in Japanese research universities, attracted Yale's emerging scholars to research in Japan. Toko Ueta, Deputy Director of JSPS San Francisco Office, followed with an informative presentation about JSPS Fellowships along with the process of applying for them. Students appreciated the slides made specifically for Yale, featuring Yale's bulldog mascot. The final presentation was by one of Yale's own, Luis Vargas, a PhD Candidate in the Department of Astronomy who participated in the JSPS Summer Program / EAPSI in 2010. Mr. Vargas shared personal anecdotes about his academic activities at the National Astronomical Observatory of Japan and his off-campus fun, including travel to remote parts of Japan. He offered informative tips about finding a host faculty member and institution, living arrangements for visiting scholars and recreation in Japan. A series of questions from the intrigued audience followed; the event was a total success.

The 4th Meeting of Japanese University Faculty in the US

On 7 December, JSPS San Francisco Office held its 4th meeting of Japanese university faculty members in the U.S. The purpose of this meeting is to exchange information and establish mutual networks among Japanese university educators and researchers staying in the United States. The meeting was attended by seventeen faculty members of Japanese universities here on short stays to do research at Stanford University, UC Berkeley, and UC San Francisco.

The meeting started with greetings from Dr. Seishi Takeda, Director of JSPS San Francisco and participants briefly introduced themselves. Continuously, participants discussed about Internationalization of Japanese Universities, especially the current of the international exchange of Japanese young researchers and come up with the answer to breakthrough the current stagnant situation. After the meeting, they engaged each other in free conversation about their research activities and their living environment in the U.S in a relaxed atmosphere.

JSPS San Francisco will continue to have such an opportunity for network building events to promote exchange among Japanese researchers in the U.S.



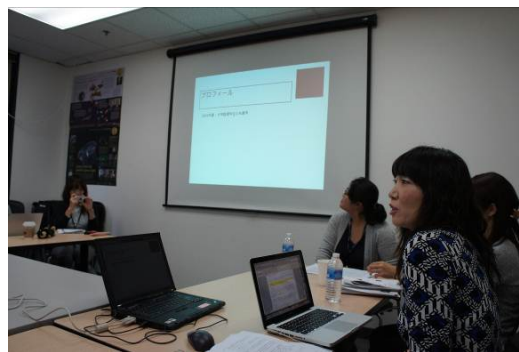
EVENTS OF FALL 2012

The 9th Meeting for University Administration Officers in the US

JSPS San Francisco held the 9th meeting for university administration officers in the U.S. on November 2nd. Its primary purpose is to exchange information and establish a network between administration officers from Japanese universities and educational institutions.

This time, focusing on the comparison of international student exchange programs between Japanese and U.S. universities and the career path of a university administration officer, Ms. Naoko Sakata (Overseas Seminars & External Programs Coordinator, Bing Overseas Studies Program, Stanford University), was invited as a guest speaker. Seventeen administrative officers from Japanese universities and educational institutions currently working or receiving job training in the U.S. attended.

Following opening remarks by JSPS San Francisco Deputy Director Toko Ueta, Ms. Sakata gave a talk on Stanford's study abroad programs administered by the Bing Overseas Studies Program (BOSP), and interesting characteristics of Stanford University from her own perspective. She told us about, for example, how Stanford manages its 11 overseas campuses and why many Stanford students are able to participate in study abroad programs, and the active attitude toward work by her colleagues. She also referred to her unique career, having come to the U.S. to study in graduate school and then getting a new job at Stanford University after she had worked for a Japanese university. After her talk, a large number of questions were brought up and a lively discussion was held among participants, facilitated by Ms. Yoshiko Mootoka, Adviser of JSPS San Francisco. Participants' attention were, in particular, centered on how BOSP is concretely run and what kind of support the staff at Stanford can get from the university.



Through this meeting, participants who have diverse backgrounds and experiences could learn from and motivate each other, and reflect on the differences and similarities between U.S. and Japanese universities.



EVENTS OF FALL 2012

The 21st Gathering of JSPS Japanese Fellows in Boston



On October 26th, JSPS San Francisco held its 21st “Gathering of JSPS Japanese Fellows” at the Consulate General of Japan in Boston, with the cooperation of the Consulate General. This networking meeting is held three times each year, one of them for researchers residing in the East Coast, while the rest are held at JSPS SF Office for researchers residing in the West Coast.

These meetings are meant to promote cross-disciplinary exchange among Japanese researchers currently doing their research in the U.S. While serving to deepen the friendly relationships among them, the

meeting also provides the researchers with an opportunity to build professional networks. Participating in this year’s second gathering were 45 researchers, thirty-two of whom were on JSPS Postdoctoral Fellowships for Research Abroad and Research Fellowships for Young Scientists, while the others were on the Strategic Young Researcher Overseas Visits Program for Accelerating Brain Circulation. Although many of them are residing in the East Coast, some researchers came all the way from places such as California, Iowa and Missouri. Staff from JSPS Tokyo headquarters, Washington Office and SF Office and the Consulate General of Japan in Boston also attended.

The meeting started with greetings from JSPS San Francisco Director Dr. Seishi Takeda, followed by remarks by Mr. Nobuyuki Watanabe, Deputy Consul-General, Consulate-General of Japan in Boston, and Mr. Yoshihiko Kakuta, Director of Administration Department, JSPS. Next, staff from JSPS Tokyo gave an explanation on the institutional system of JSPS fellowships for Japanese doctoral and postdoctoral researchers. The participants then introduced themselves and briefly described their research work through PowerPoint. Participants eagerly listened to each presenter as they described their research work, and they brought up many stimulating questions and impressive ideas.



At the following reception, they engaged in free conversation about their diverse activities and experiences in the U.S. in a pleasantly relaxed atmosphere. It is hoped that such vibrant interchange will lead to wider networking among Japanese researchers in the U.S.

JSPS San Francisco will continue to play a vital role in providing such an opportunity for network building events among young Japanese researchers.

THE OFFICE STAFF SWITCH

JSPS San Francisco Welcome a New Member

Shino Inomata, an Adviser from MEXT

Shino Inomata was assigned as the 12th Ministry of Education, Culture, Sports, Science and Technology (MEXT) fellow for the exchange program between MEXT and University of California, Office of the President (UCOP), which was initiated by the president of University of California and the Administrative Vice-Minister of MEXT 14 years ago. She is the first woman to be a MEXT fellow. At the same time, she works at JSPS San Francisco as part-time adviser.

Since 1995, her work has usually been related to elementary and primary educational administration at MEXT, especially in the revision of laws a number of times. She has also worked for the past two years concerning young researcher training systems such as research fellowships.

This is her first time to live and work in a foreign country because she never expected to work for foreign affairs. However, she now thinks this is a good chance which will give her various new points of view. She hopes to visit numerous educational and research facilities, and she would like to learn about the American educational system in a social context.

Moreover, during her 11 months stay, she looks forward to enjoying Californian life with healthful foods and traveling inside and outside of the U.S.



Upcoming Event of Winter 2013

JSPS and CJS (Center for Japanese Studies, UC Berkeley) Joint Symposium

Media Histories / Media Theories & East Asia

JSPS and CJS Joint symposium will take place from January 7th to 8th at University of California at Berkeley. This symposium aims to foster transnational and local scholarly perspectives on East Asian arts and media theory in the context of recent cross-disciplinary arguments in film and media studies.

DATE : February 7(THU)-8(FRI), 2013

VENUE : University of California, Berkeley

*SPONSOR : Center for Japanese Studies, University of California Berkeley
Japan Society for the Promotion of Science*

FUTHER INFORMATION : <http://eamediaconference2013.weebly.com/index.html>

気付き – ADVISER'S INSIGHT IN THE BAY AREA

By Yoshiko Motooka, Adviser of JSPS San Francisco

What is 'Innovation'?

What is innovation? The word "innovation" has already been described by many people. I would like to write about it as well, since I luckily had an opportunity to learn about "innovation".



The opportunity was provided by the courtesy of Kagoshima University North American Center. It has two international lectures a year for the students of Kagoshima University. The first is "Introduction of International Professionals" during the first semester where different Japanese active workers in North America (entrepreneur, professor, researcher, etc.) give lectures about the skills and attitudes to gain to become an active professional in the world. The other is "Introduction on International Innovations" during the second semester. Students learn the importance of innovation and what kind of skills to gain for innovation, studying examples of innovation from Japanese speakers who have a high level of knowledge about IT, nanotechnology, healthcare and social welfare in North America. I was able to attend "Introduction on International Innovations" through chance.

Now back to the question. Through the lectures, I understood two crucial points about innovation.

One is how innovation occurs. New concepts, science and technology create a new meaningful social value and it brings a dramatic change for the betterment of our society. It's made through a continuous combination of knowledge. We think innovation is always related to science or technology, but there is also innovation not related to them. We call it social innovation, for example, economic innovation, political innovation and educational innovation!

The other is that innovation is made by chance, and we can increase the odds of innovation – by "Gakumon"! Wide-range knowledge gives us the clues for the adequate combination. And if we think enough by ourselves, then we would achieve the innovation.

The Council for Science and Technology has transmitted the message that interdisciplinary research and learning in other disciplines are important and of benefit to make innovation and solve global issues. This is because intellectuals have already recognized how innovation occurs.



BAY AREA & JAPAN RELATED NEWS



KOCHI UNIVERSITY

The research project “Primary Plant healthy Care” of Kochi University

Kochi University is located in Kochi prefecture, on the south coast of Shikoku Island, Japan. Because of temperate climate and long daylight hours, Kochi prefecture has been a district which produces a variety of crops, especially vegetables such as tomatoes, eggplants and sweet peppers, cultivated in glasshouses in Japan. Kochi University has thus developed high technologies for sustained agricultural productivity of glasshouse cultivation in Japan, especially in Kochi prefecture. We have also developed technologies for processed foods using crops cultivated in Kochi prefecture. Based on the successful results, Kochi University started a research project “Primary Plant healthy Care”. The objective of the project is healthy cultivation of crops and their beneficial usages for processed crops and residues. The project consists of four teams; plant disease protection, agricultural pest management, plant nutrient and soil management, and processed technology of crops and crop residues. Furthermore, we have developed the education system for “Primary Plant healthy Care” in graduate courses and have turned out younger scientists and technical experts for novel agricultural development in Japan.



Fig. 1. The symbol of “Primary Plant healthy Care”



Fig. 2. Bacterial wilt on tobacco plant caused by *Ralstonia solanacearum* (left) and genetic engineered bacterial wilt-resistant tobacco plant (right)



Fig. 3. A natural enemy insect, *Pilophorus typicus*, native to Kochi prefecture



Fig. 4. Development of technology for organic cultivation

Contact: Yasufumi HIKICHI, Laboratory of Plant Biotechnology & Pathology, Kochi University
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 URL: http://www.kochi-u.ac.jp/plant_healthcure/

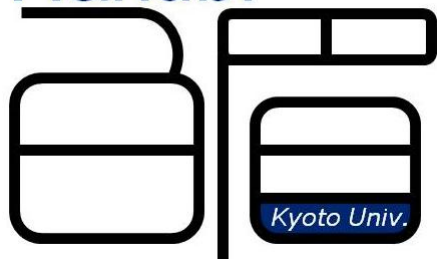
BAY AREA & JAPAN RELATED NEWS



KYOTO UNIVERSITY

Introduction of HAKUBI Project Supporting Young Researchers

Hakubi



Kyoto University established an institutional home for the development and implementation of the Hakubi Project to foster and support young researchers with superb creativity, a broad perspective and a flexible mindset. The Hakubi Project welcomes applications from researchers all over the world. There are no restrictions to nationality, and the project is open to young researchers in every range of basic and applied studies in any academic field. Every year, about 20 researchers are recruited through peer review and interview screenings, and are employed as program-specific faculty members (associate professor or assistant professor) for the five years. The program is designed to support research activities by providing uninterrupted, stimulating environments in collaboration with faculties, graduate schools, institutes and research centers at Kyoto University. The call for application for FY 2014 will commence in early March, 2013, and end in early May, 2013. For more details, please visit <www.hakubi.kyoto-u.ac.jp/eng>

JSPS San Francisco Always Welcomes Your News

We are looking forward to hearing your news regarding international related events and so on.

If you have any news about your institution or your research, please feel free to ask us about including it in this newsletter.

This newsletter will be distributed to international sections in Japanese universities and subscribers in the Bay Area.

Contact: JSPS San Francisco

E-mail: webmaster@jpsusa-sf.org / URL: http://www.jpsusa-sf.org/index_j.php

INTERVIEW WITH JSPS FELLOW IN THE U.S



Kento Sato

2008: B.S., Department of Information Science, Tokyo Institute of Technology

2010: M.S., Department of Mathematical & Computing Sciences, Tokyo Institute of Technology

2011-present: Ph.D., Department of Mathematical & Computing Sciences, Tokyo Institute of Technology

2012-present: JSPS Research Fellowship (DC2)

Mr. Kento Sato is a Ph.D student in the Department of Mathematical & Computing Sciences at Tokyo Institute of Technology. His research area of expertise is High Performance Computing (HPC). His research interests include a performance analysis, modeling and optimization of I/O on a big data processing, checkpoint/restart systems in grids, clouds and supercomputers. He received his M.S. in the Department of Mathematical & Computing Sciences at Tokyo Tech in 2010 and his B.S. in the Department of Information Science at Tokyo Institute of Technology in 2008.

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

The U.S. is the world's leading country in HPC and supercomputers. I wanted to work with students and researchers with great talent and skills, and build up a network in such an environment. I joined Lawrence Livermore National Laboratory as a part of my research collaboration. The laboratory has a Sequoia supercomputer, ranking 1st in the Top500 list (June 2012), and leads the area of High Performance Computing (HPC) in the U.S. It was a great opportunity to pursue my research in such a national laboratory.

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

The first thing that impressed me is that they put a high priority on discussion. We had a few meetings every week ranging from a team meeting to department-wide. But the style of the meetings is casual; we

often have discussion over snacks and drinks while cutting in with some jokes. I think the environment is really good for researchers to feel relaxed and come up with new ideas.

Another thing I was impressed is that their work-life balance is thorough. Japanese students and researchers often work late and also go to their laboratory even on weekends. But, in the U.S., people spend their working hours effectively and productively, and do not stay late in a laboratory, treasuring private time and time with their family.

I was also impressed by the diversity. Even though Lawrence Livermore National Laboratory is a national laboratory funded by the United States Department of Energy (DOE), there are a lot of researchers from many countries, such as Germany, Korea, India and so on. It was a great opportunity to make friends working on HPC worldwide.

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

I think the major merit is to be able to promote research collaborations between our laboratory in Japan and a visited laboratory in the U.S. I have already left the U.S., but we are still continuing the collaboration and having telecons biweekly. We have been achieving significant research results thanks to the collaboration.

Japan is also leading supercomputing technology, but I think the computational resources are not sufficient for a lot of researchers to conduct their experiment

on supercomputers. I sometimes have to wait a day to end others' program, and to start running my program. However the visited laboratories have a significant amount of computational resources, which helps me conduct my research much more productively.

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

I hope my work can contribute to real life. In 2018, exa (10^{18}) flops scale supercomputers are expected to emerge, which will enable us to conduct finer-grained scientific simulation faster. However, at exa scale, system reliability becomes a significant problem due to the increasing system size and complexity. I hope my fault-tolerant system can solve the upcoming problem. I hope my work can contribute a solution to the future problem.

As an advice to young researchers, I'm sure that doing research abroad will be great for your research career and will help you make a research network. The U.S. laboratory is open to young researchers worldwide and provides great research environments. I think those national laboratories are also a good option as well as the U.S. universities.

INTERVIEW WITH JSPS FELLOW IN THE U.S



Dr. Tomohiro Yonezawa

2001-2004: Graduate School of Agricultural and Life Sciences, The University of Tokyo.

2003-2004: JSPS Research Fellow (DC-2)

2005-2006: Research Fellow in the Research Institute for Health Fundamentals of Ajinomoto co.

2006-2008: Research associate in Kitasato University.

2008 to date: Assistant professor in Kitasato University.

2011 to date: JSPS Postdoctoral Fellow for Research Abroad

2011 to date: Visiting Research Scholar, University of California, Riverside

Dr. Tomohiro Yonezawa is a basic researcher in the field of veterinary physiology. He has clarified the local function of gonadotropin releasing hormone (GnRH) in the ovary under the mentorship of Dr. Mitsumori Kawaminami, Kitasato University. Now, he is studying novel technologies to promote breast cancer cell death under the mentorship of Dr. Ameae Walker, a professor of the University of California, Riverside. The hypothesis is that altering splicing of prolactin receptors to increase expression of dominant negatives will promote breast cancer cell death and decrease metastatic potential.

His website (Japanese):
<http://yone-p.jugem.jp/>

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

To learn “genuine science”. I heard that “genuine science” exists in the U.S. from my mentor in Japan: “Science is a culture in the western countries, especially the U.S. We don’t have such a kind of culture historically. You need to go abroad and learn it.” At the time, I could not figure out what he meant. I thought what I needed to learn next was how to write a big paper, not what science is. When I asked Dr. Walker, a professor in the U.S. who mentored my boss twenty years ago, she said “you need to think again what is most important to you – to gain a big name on a paper or more personalized help developing your thinking.” It made me reconsider my goals, and is why I chose to be here.

Q2: What is your impression of the re-

search environment in the U.S.? How is it different from your lab in Japan?

The research environment is not amazing at all, which is amazing. It is not so different from our lab in Japan. Honestly, it is worse in several points. Most instruments are pretty old and almost broken. Animal facilities are highly regulated and inconvenient to use even for daily colony maintenance. The ordering and financial accounting systems at the university are incredibly awful.

Nevertheless, researchers can get interesting results and publish many good papers in a short amount of time. They are good at thinking quickly and building comprehensive hypotheses based on the literature. That is what impresses me. Since most publications are written in English, they have a significant advantage compared to me. But, even so, their discussion and hypothesis formulation skills surprise me all the time. In addition, the free and open discussions with colleagues at seminars and society meetings have expanded my thinking and helped me be more critical of my own experimental work. This is especially true in a multidisciplinary department such as the one at Riverside.

Although there are many aspects of the U.S. system that are fairer in terms of it being impartial and merit-based, connections are still useful. I observed many researchers in the lobby of some big meetings still talking about each other’s work. These connections may be useful for reviewing of papers and grants and in that way I would say that is just the same as in

Japan.

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

In the U.S., even undergraduate students working in the research lab have some opinions based on their background coursework and specialties. Further, even professors are ready to listen to their advice. Input from all lab members, as well as other researchers in the department, can improve individual experiments as well as hypotheses, and help to develop my thinking. I don’t know whether this is what my boss in Japan meant to say, but this is one of the merits I have derived: to respect everyone’s expertise more and to discuss the project more often. To do this effectively, communication skills are most important.

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

My dream is to keep finding something previously unknown and important. Although I thought initially my dream would come true if I work harder and contemplate carefully, I have learned that communication is occasionally more important than these things. I would encourage everyone to get out of your lab, to communicate with each other, and discuss your own opinions.

INTERVIEW WITH JSPS FELLOW IN THE U.S



Dr. Chiaki Hori

2007: B.Agr. University of Tokyo

2009: M.Agr. Graduate School of Agricultural and Life Sciences, University of Tokyo

2012: Ph.D. Graduate School of Agricultural and Life Sciences, University of Tokyo

2011-2012: JSPS Research Fellow (DC2)

2012-present: JSPS Research Fellow (PD)/ Visiting researcher at Forest Products Laboratory, US Department of Agriculture

Dr. Chiaki Hori got her Ph.D from the Department of Agriculture at the University of Tokyo in March 2012. She has researched molecular biology of wood decay fungi (including mushrooms) for fundamentally understanding microbial degradation of wooden materials in the laboratory of Prof. Masahiro Samejima and Prof. Kiyohiko Igarashi. In particular, she is subjected to comparative genomic studies and transcriptional and protein expression profiling of several wood decay fungi to understand the whole enzymatic biodegradation mechanisms. Wood decay fungi are efficient degraders of all the wood components, therefore, this research could contribute to biorefinery, conversion of renewable plant resources to bioethanol, biochemical and other biomaterials.

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

I had majored in Biomaterial Sciences with an emphasis area on basic and applied research mainly about woody biomass utilization such as wood (housing) construction, paper industry and plant biorefinery. Forest Products Laboratory (FPL), University of Wisconsin-Madison, has been an extraordinary research institute in the U.S. for a long time.

When I was pursuing a Ph.D degree in Japan, one of the international collaborators was Prof. Dan Cullen, who has been a leading scientist in the fungal genome research area. After I was granted a JSPS scholarship, I decided to join Prof. Cullen's research group. Through experience for the past few months at FPL, I felt that working with him would give me advanced

insight into research. I have also been given an opportunity to learn the scientist's way of thinking and how they pursue their research with a similar background in a different community.

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

I have two impressions on the life style between Japan and the U.S. We tend to care too much of work in Japan, whereas people consider their life as important as their work in the U.S. They work hard, but they do not sacrifice their time with family and care about their own quality of life. Secondly, they have high self-management skills. There is no pressure in the U.S. so self-management by oneself is always important. Even when I asked children for their dream or goal, they can clearly answer what they want to be and want to do. By working with people in the U.S., I would become a scientist who can self-manage my life.

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

When I conduct research in the U.S., there are two apparent merits that I noticed; open collaboration and open discussion environments. We can easily access the knowledge and facilities in other labs and equally discuss with each other, even between professors and students. Thus, I feel that it is reasonably easy to conduct research if we have clearly laid out what we want to do in the U.S.

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

for young researchers?

I am always thinking about how every person, including myself, can feel good and what can be a truly better society for everyone. I feel that my research field could contribute to that through providing alternative biorefinery technology. For now, I want to keep doing and keep moving forward with my research and let everyone know how important mushrooms are as I believe my research activities will somehow be linked to the future of human society.

For my advice, I think it is important to keep an attitude of flexibility to the differences and also set some goals during studying abroad. "When you dive into a different world, you can have a wider vision and maturity in your own life." I often heard it when I was studying in Japan and, after I experienced it, I can feel it is right. Keep optimistic and have fun!

INTERVIEW WITH JSPS FELLOW IN THE U.S



Dr. Masashi Nakatani

2008: Ph.D., Graduate School of Information Science and Technology,
The University of Tokyo

2008 - 2012: Researcher, Private cosmetic company

2012 - present: JSPS Postdoctoral Fellow
Visiting scholar, Graduate School of System Design Management, Keio University
Postdoctoral Research Fellow, Columbia University Medical Center

After receiving a Ph.D. in engineering, **Masashi Nakatani** worked for four years in the cosmetic industry where he developed a sensor system that evaluates skin softness. He returned to academic research in the spring of 2012 and started to conduct interdisciplinary research between sensor engineering and skin physiology. He also pursues to make a connection between research outcomes in academia and industry, represented by his recent collaborative activity called TECHTILE (TECHnology based tactile design).

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

The short answer is that the only laboratory where I can research my topic is in the U.S. The long answer is the following. I have been studying the sense of touch since I was an undergraduate student. During my study in graduate school, I reported a novel phenomenon called "Fishbone Tactile Illusion," and I hypothesized the rationale why this perceptual illusion happens in terms of touch receptors response in the skin. However, touch is the least understood sense, especially since the mechanism of how touch receptors can transduce tactile stimuli to sensory neurons is enigmatic. I decided to focus my research interest on touch receptors, especially to Merkel cells that are related to my reported illusion. I chose Dr. Lumpkin's lab in Columbia because of its intensive research environment in studying Merkel cells.

Q2: What is your impression of the research environment in the U.S.?

How is it different from your lab in Japan?

The best description of my impression is that the research environment is far more competitive than I imagined. Principal investigators need to choose an appropriate

research topic that is publishable in high impact journals and achievable within short periods (e.g., five years at the longest). If not, the lab members cannot continue research and they even leave for another university. This tendency is strong in Columbia, because principal investigators are required to have large grant like a R01 grant, which is the biggest grant from NIH, in order to keep their labs. Because of this reason, I feel a kind of positive pressure that the research interest is very focused and the funded research must be successful. I think this is the reason why researchers in the US can exceed in many research fields by concentrating on a research topic of high priority, and this is most striking difference from the lab in Japan.

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

I can list the following three advantages. The first advantage is that researchers can easily move to different research institutions. For example, one can get a PhD in the east coast, and finish postdoctoral research in the west coast (or even in Europe), get an academic position in the south, and come back to the east coast as a tenured professor. This is something like a migrant fish that grows up by moving from one environment to another. The second advantage is that collaboration between researchers in different fields is highly recommended and is also supported by national funding. This is a good practice in learning how to interact with people of different research cultures. The third advantage is that it is smoother than in Japan to conduct translational research, in which the research outcome from basic research is applied to clinical study. This is because NIH funding re-

quires a concrete mission statement when principal investigators submit a grant, and the clinical significance of the study is an important item in writing the grant. This practice is also good for always reminding the social accountability of the research study.

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

My dream for the next ten years is to establish a research field called Machine Touch. Machine Vision is a popular research area in computer science, but its counterpart concerning touch has not been established yet. Machine Touch enables a system to detect, recognize or even categorize the characteristics of a contacting object through tactile sensors. For achieving my goal, both study on physiological characteristics of tactile receptors and its computational model on how touch information is processed in cognition, which are my current research topics, are required. I can feel I'm embarking on my dream.

As my take home message, I hope young researchers do not hesitate to choose research careers outside Japan. Japan has a lot of advantages in conducting research, but I feel the academic culture is not fully at a global standard, in terms of the way of critical thinking and conducting research. By living or even struggling in a different research culture, it is possible to learn how to communicate and work in productive ways with researchers outside Japan. You may have some bitter experiences, but it will turn into a wonderful opportunity to awaken your eyes in the long run.