The JSPS San Francisco and the Center for Japanese Studies (CJS) at the University of California, Berkeley (UCB) held a joint symposium titled “Drive for the Nobel Prize” at the International House in Berkeley on October 31 and November 1.

The objective of this symposium was to discuss the influence that the Nobel Prize has on individuals, institutions and society. The symposium started with opening remarks from UCB chancellor, Carol Christ and Mariko Kobayashi, Director of the International Program at JSPS. Dana Buntrock, Chair of CJS, also gave some context and background to the topic at hand.

Nobel laureates, Yuan T Lee (Chemistry, 1986), Saul Perlmutter (Physics, 2011) and Takaaki Kajita (Physics, 2015) delivered lectures on their research and the topic of the event to more than 80 scholars. The distinguished guests also took numerous questions from the audience.

(Continued on page 2)
The second day included panel discussions on three different topics: “Journalism and the Nobel Prize”, “The Nobel Prize’s Impact on Institutions” and “The Nobel as an Incentive”. The panelists included a Nobel selection committee member, several journalists (from Science, New York Times and the Asahi Shimbun), an official from Japan’s Ministry of Education, Science, and Technology (MEXT), and researchers from the US and Japan.

The JSPS San Francisco will continue to support such symposia while maintaining its close relationship with the University of California.

PAST EVENTS

Summer Researcher Gathering 2017 in the U.S.

On August 5th, JSPS San Francisco held the Summer Researcher Gathering 2017 at the David Brower Center in Berkeley. This biannual gathering provides an opportunity for Japanese researchers to expand their networks by presenting their research and exchanging views on the difference between research environments and methods in the U.S. and Japan.

More than 50 people, including JSPS fellows, visiting and resident scholars, researchers and administrators participated in the event.

Dr. Toru Tamiya, Director of JSPS San Francisco, gave the opening remarks which were followed by presentations from several young researchers who shared their current work. Next Dr. Yoshihiro Izumi-
Ja (an Associate professor at the University of California, Davis’ Department of Dermatology School of Medicine, Comprehensive Cancer Center) gave a presentation on his carrier trajectory and lab while giving tips on acquiring grants. After the presentation, participants divided into 6 groups to exchange views and experiences pertaining to such issues as career advancement and strategies for staying productive as a researcher. After the group discussion the JSPS introduced several funding opportunities available to the participants.

Dr. Izumiya and Dr. Tamiya gave some closing remarks that touched on the history of this event and the life challenges that one often faces as a researcher.

At the evening reception participants were able to further strengthen their connections with one another while enjoying food and drinks.

The next Researcher Gathering will be held this winter in Berkeley.

### 18th Workshop for Japanese University Administrative Staff in the U.S.

On October 23 the JSPS San Francisco held its 18th annual workshop for Japanese university administrative staff in the U.S. at its office in Berkeley. The purpose of this workshop was to provide Japanese university administrative staff with an opportunity for professional development and networking.

The main event was a lecture by Naruyuki Fujita, the Director of New Academic Initiatives at the Center for International Education at UC Davis. He presented some of the many collaborations between UC Davis and Japanese universities and his experience on the job market here in the US. Mr. Fujita also focused on the strengths that Japanese employees often bring to international organizations and how the attendees could benefit from an awareness of these strengths. He also argued that above all, one needs passion to achieve goals.

After the lecture, the diverse group of participants discussed the difference between working styles at American and Japanese universities and the abilities needed to effectively navigate between the two different settings.

(continued on page 4)
The JSPS San Francisco will continue to hold this workshop regularly.

Fellowships for Research in Japan

Informational Session & Networking at the University of Washington, University of California, Berkeley, University of California, Los Angeles and University of California, Davis

JSPS San Francisco held fellowship informational and networking sessions at the University of Washington, the University of California, Berkeley (UCB), the University of California, Los Angeles (UCLA) and the University of California, Davis.

With the generous help from several university staff members numerous participants come to learn about the JSPS’s fully-funded fellowships for research in Japan and to connect with fellow researchers.

The sessions drew a large variety of researchers at different career stages from different fields, including late-term doctoral students, postdocs and faculty members.

The JSPS would like to thank JSPS alumni Steven W. Collins (Associate Professor, Division of Engineering & Mathematics, University of Washington, School of Science, Technology, Engineering & Mathematics), John Harte (Professor, Department of Environmental Science Policy and Management, UCB), Mathew Malkan (Professor, Department of Physics and Astronomy, UCLA) and Thomas L.

(Continued on page 5)
Rost (Professor Emeritus, Department of Plant Biology, College of Biological Sciences, UCD) for sharing their experiences researching in Japan on JSPS Fellowships. Their talks were the highlights of each session, providing attendees with valuable insight through their first-hand perspectives.

The JSPS also thanks guests from Japanese University Network in the Bay Area (JUNBA), Kazuhiko Hasegawa (Regional Director, Osaka University North American Center for Academic Initiatives), Mari Maruyama (Executive Director, Obirin Gakuen Foundation of America) and Yoichi Aizawa (Executive Director, San Francisco Office, Waseda USA) for their participation in the short networking events following each session. Ichiro Hashimoto (Consul (Science and Technology) from the Consulate-General of Japan in San Francisco) also participated in the short networking event following the session at UCB. They shared viewpoints about the state of research in Japan and their experience of accepting overseas researchers.

JSPS San Francisco will continue to hold regular networking info sessions at universities around the Bay Area. All interested researchers are welcome to attend.

For more information about upcoming info sessions, as well as fellowship eligibility, and other details, please contact the JSPS San Francisco Office: fellowships@jspsusa-sf.org or visit us at our website: http://www.jsps.go.jp/english/e-fellow/
## PAST INFORMATION SESSIONS

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<tr>
<td>October 12, 2017</td>
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<td>October 18, 2017</td>
<td>University of California, Berkeley</td>
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<td>October 26, 2017</td>
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<td>November 8, 2017</td>
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JSPS San Francisco will continue to hold informational sessions at universities on the West Coast. Please check our website for the most updated information: [http://www.jspsusa-sf.org/fellowships.html](http://www.jspsusa-sf.org/fellowships.html)
UPCOMING EVENTS

JANUARY

JSPS Fellowship Information Session
Stanford University
Date: January 30 2018
Details coming soon

FEBRUARY

JSPS Researcher Gathering

We will hold a gathering for Japanese researchers and JSPS alumnus.
Date: February 3
Venue: David Brower Center (2150 Allston Way Berkeley, CA 94704)
To RSVP, please contact us: gathering@jspsusa-sf.org

“The Political Economy of Japan under the Abe Government”

Symposium Sponsored by Japan Society for Promotion of Science, Freeman Spogli Institute for International Studies (Stanford University), and Shorenstein Asia Pacific Research Center (Stanford University)
Date: February 8-9
Venue: Philippines Room, Encina Hall, Stanford University
Kyoto’s Living Legacy of Quantifying the Invisible
Scientific inquiry from the infinitesimal to the infinity of space

This year’s awarding of the Nobel physics prize — to three researchers instrumental to LIGO’s success in detecting gravitational waves — was a cause of jubilation for Kyoto University’s YITP, the Yukawa Institute for Theoretical Physics, in particular because many of the Yukawa scientists have worked closely with Dr. Kip Thorne, one of the awardees.

YITP doctoral candidate Joseph M. Fedrow — Joey to his friends — is a native of Long Island, New York. An alumni of The Evergreen State College, he received his Master’s degree in astronomy from San Diego State University while completing his thesis in theoretical physics as a visiting graduate student at UC San Diego.

Strongly interested in education, Joey is passionate about using interdisciplinary methods to bring science to a wider audience. This passion brought him to Japan, not initially as a researcher, but rather to teach English to primary and secondary school students.

Now he is back in academia at Kyoto University, in the lab of Professor Misao Sasaki, using numerical relativity to better understand gravitational waves from extreme astrophysical sources. In other words, he surfs the waves of space to hunt black holes.

YITP has a long history of fostering talented physicists like Joey. Founded in 1953, the institute is named after Hideki Yukawa, the 1949 recipient of the Nobel prize in physics, and Japan’s first Nobel laureate. Since its inception, YITP has been a world leader in theoretical physics, supporting cutting-edge researchers from the fields of cosmology, particle physics, field theory, astrophysics, and condensed matter physics.

“Theoretical physics is all about quantifying the invisible,” explains Joey. “We use mathematics as a microscope to probe the fundamental laws of nature. Professor Yukawa’s award-winning research — predicting the existence of mesons — is a shining example of the power of theoretical physics.”

Joey explains that YITP’s stimulating international research environment — where students and professors are encouraged to focus on individual research interests — is particularly unique. The open atmosphere enables groundbreaking science (Continued on page 9)
The population of cities keeps growing. According to the UN[1], 54% of the world’s population currently lives in urban areas, demanding infrastructures that support a satisfactory level of service. Mobility represents a constant challenge in those cities where transportation infrastructure is inadequate. Additionally, in large cities located in developing countries, the number of vehicles is increasing, rendering mobility problems even worse. The redesign of road network infrastructure in those countries implies substantial costs that are hardly affordable. Hence, a way to reduce traffic congestion is to make better use of existing infrastructures.

Joey is also part of the collaborative “International Research Unit of Advanced Future Studies”, or AFS, in which 15 research organizations from across the university are joining their intellectual efforts to guide the future of humanity. It is an environment where Joey enjoys the freedom to pursue his own interests. As a result, he has started to work with scientists at other institutions such as Caltech.

“I am continually inspired by the power of theoretical physics to elucidate the macroscopic manifestation of microscopic phenomena underlying all of nature. In addition, one of the best parts about being a theoretical physicist is that people without much scientific background, even kids still in grade school, can understand and appreciate the basics of what we do. As a result, I hope to inspire more students to become scientists and more adults to become scientifically literate.”

“My ultimate research goal is to bring about social justice through astrophysics.”

For additional info:
• Yukawa Institute for Theoretical Physics https://www.yukawa.kyoto-u.ac.jp/en-GB/
• International Research Unit of Advanced Future Studies http://www2.yukawa.kyoto-u.ac.jp/~future/?lang=en

Evolutionary Design of Sustainable Transportation

Rolando Armas, Hernán Aguirre and Kiyoshi Tanaka
Frontiers in Massive Optimization and Computational Intelligence
Shinshu University
https://sites.google.com/view/lia-modo

A computer simulation of Joey’s investigation of black holes and gravitational waves
infrastructure, which can be achieved in part by a proper set of traffic signals or improving the level of service of the system while reducing the density of vehicles on the streets.

Quito Metropolitan District - DMQ (Ecuador) is a perfect example of a city that has grown in recent years increasing traffic congestion, gas emissions, pollution, and use of energy. Our research integrates evolutionary computation, traffic simulation, emission models, and data mining tools to gain a better understanding of DMQ’s complex mobility and transportation system in order to propose solutions sustainably. We particularly focus on Quito’s business district, which covers approximately 5x8 km².

The first study dealt with the optimization of 70 traffic signals. The proper setting of traffic signals helps to reduce emissions and induce traffic patterns to control speed in sensible areas to increase pedestrian security. We used an evolutionary algorithm together with a traffic simulator (MATSim) to obtain optimal signal settings, minimizing average travel time and emissions simultaneously[2]. We implemented several genetic operators and designed several experiments to find a proper configuration that allows a fluid traffic through a proper coordination between signals. Using data mining techniques, we group the optimal solutions in clusters. Finally, we analyze the effects of traffic signal settings respect to the environmental impact using the output data from the MATSim emission module. Fig.1 illustrates in blue the area where CO₂ emissions can be significantly reduced by adopting an appropriate signal configuration found by the evolutionary algorithm.

A second study examined traffic density levels in urban transportation. We define Level of Service (LoS) in terms of traffic density and use the evolutionary algorithm to search combinations of the number of private/public transportation users, the capacity of buses, and the time interval between bus departures of five main Bus Rapid Transit (BRT) corridors on DMQ scenario [3]. The evolutionary algorithm searches for solutions which minimize traffic density, travel time and fuel consumption simultaneously. Fig. 2 shows the trade-off between travel time and density. This figure is colored according to the proportion of agents NPt that use public transportation and includes vertical lines to mark the ranges of LoS A-D.

We also analyze the effects of BRT headway configurations on Particulate Matter (PM) emissions. Fig. 3 shows PM emissions differences between two different BRT headways configurations.

(Continued from page 9)

Fig. 1 Reduction of CO₂ by traffic signal optimization

(Continued on page 11)
Third Joint Committee meeting of the Trans-Pacific Human Capital Development Program and short-term training at the Pontifical Catholic University of Peru

University of Tsukuba, Global Commons

The Trans-Pacific Human Capital Development Program, a student-exchange project adopted and supported by the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT), currently in its third year of activities, held its Third Joint Program Meeting of the Steering Committee at the campus of one of its Latin American partner universities, the Pontifical Catholic University of Peru (PUCP), on September 14th and 15th of this year.

Prior to the meeting of the committee, Professor Shigeo Osonoi, Chair of the program and Provost of the Faculty of Humanities and Social Sciences of this university; Dr. Mari Minowa and Dr. Saori Isoda of the Faculty of Humanities and Social Sciences; Keiko Sekimoto, head of the Global Commons office; and Dr. Paola Sanoni, International Associate, made a courtesy visit to the president of the PUCP, Dr. Marcial Rubio, together with representatives from the other five partner universities that participate in the Trans-Pacific consortium: El Colegio de Mexico, the University of Guadalajara (Mexico), Los Andes University (Colombia), the University of Sao Paulo (Brazil), and the University of Chile. Professor Osonoi expressed his deep gratitude to the PUCP family, and to Dr. Rubio in particular, for their cooperation in hosting the meeting of the Steering Committee, and for receiving our students in the short-term training program. The visit to Dr. Rubio was then followed

References:

(Continued from page 10)

Fig. 3 PM emissions difference between two BRT configurations

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by an exchange of opinions with all the representatives present about strengthening the collaboration between partner universities. At the two-days meeting of the committee, the future agenda of the program (now reaching its halfway point) was presented, with particular attention to the further promotion of exchange and the expansion of the network. These points were lively discussed, and they set the tone for the exchange program.

Besides the high-level meeting, the PUCP also hosted the Short-Term Training Program of our students from September 3 to 21. As part of the program, other than taking classes of Spanish language and Peruvian culture and society, students had an enriching experience which included visits to the Japanese Embassy, the Japanese-Peruvian Association (Nikkeijin Kyokai), JICA Peru, JETRO Lima, the Japan-Peru Chamber of Commerce and Industry, Peru Shimpo, and the Japanese company.

(Continued on page 13)
Ajinomoto, etc. Through these interactions, the students gained further understanding of the active relationship between the two countries. During their time at the PUCP, the students also enjoyed the opportunity to meet alumni of the Trans-Pacific Program who had studied in Tsukuba in the past. On September 19, the last day of their training program, the students presented their findings and conclusions at the final presentation held for that purpose. Overall, we expect that the experience will lead them to their next professional step, and to become a bridge between Latin America and Japan.

(Continued from page 12)

Newly discovered brain chemical “NPGL” controls appetite and body fat composition

The latest discovery by the group of Professor Kazuyoshi Ukena, along with collaborators from Japan and UC Berkeley, adds to our understanding of how the brain regulates energy usage and feeding habits – the control mechanisms of which are not yet fully understood. They found that NPGL, a recently discovered protein involved in brain signalling, has been found to increase fat storage by the body – even when on a low-calorie diet in rats. In addition, NPGL was shown to increase appetite in response to high caloric food intake. This latest research into NPGL has greatly increased our understanding and should guide scientists in finding ways to assist the evolutionary-survivalist human body to adapt to a calorie-intense 21st century environment.

Related articles

(Continued on page 14)
Unravelling the Mechanism of the Decline in Fertility with Age & Developing a Technique for Ovarian Rejuvenation

Fertility decreases slightly in women around the age of 30, but is clearly evident at a median age of 40. As a consequence, many women in developed countries including Japan, USA, UK and EU countries rely on assisted reproductive technology (ART) to become pregnant. However, the success rate of ART in women more than 40 years old women is low.

In our study (Umehara et al., Aging Cell 2017), using the unique ovarian aging model mice, we revealed that the growth of fibrosis tissue in ovarian stroma is induced by the high serum levels of LH present with increasing age. The fibrosis is associated with the arrest of follicular development. Thus, GnRH antagonist treatments might provide a new, non-invasive strategy for improving fertility in a subset of non-responder aging women before menopause.

Reference:
Takashi Umehara, Tomoko Kawai, Ikko Kawashima, Katsuhiro Tanaka, Satoshi Okuda, Hiroya Kitasaka, JoAnne S. Richards, Masayuki Shimada. The acceleration of reproductive aging in Nrg1flox/flox;Cyp19-Cre female mice. Aging Cell (2017) DOI: 10.1111/acel.12662

You can also refer to the following articles.
Latency of seizures determined by diet: estrogen-mediated brain protection directly linked to intake of fatty acids found in oils

Conclusion of Inter-university agreement with National Autonomous University of Mexico (UNAM)
UPCOMING APPLICATION DEADLINES: FELLOWSHIP PROGRAMS

Application deadline to JSPS Tokyo Office:

**January 4 - 11, 2018** *

Postdoctoral Fellowship for Research in Japan

- Short-term Program (1-12 months)

*The deadline is for the host institution to submit the application to JSPS Tokyo; generally, applicants must submit documents to host institution 1-2 months prior to this deadline.

Application Deadline to NIH:

**January 31, 2018**

Postdoctoral Fellowship for Overseas Researchers

https://www.fic.nih.gov/Programs/Pages/japan-fellowships.aspx

- Short-term for North American and European Researchers (1-12 months)
- Standard (12-24 months)

OFFICE STAFF SWITCH

Introducing New Deputy Director, Liaison Officer and International Program Intern

Yumiko Minoura (Deputy Director from Nagoya University)

Yumiko Minoura joined the JSPS San Francisco Office on September 1 as the 8th Deputy Director. Since then she’s been enjoying meeting new people, walking in the beautiful Northern California sunshine and learning more about American culture. She is very excited to work in Berkeley where diversity and freedom is in the air. Before starting her tenure at JSPS SF, she worked at Nagoya University for 13 years and recently became involved in international collaboration. One of Nagoya University’s strengths is in its international approach which is unique in that it pays focus closely

(Continued on page 16)
on Asia. The university has several productive and harmonious relationships with other Asian counties. Right before transferring to the SF Bay Area, Yumiko worked for two years for the university’s Asian Satellite Campuses Institute that runs the flagship program, the ‘Transnational Doctoral Programs for Leading Professionals in Asian Countries.’ This program exclusively aims to provide educational opportunities to government officials in six countries (Cambodia, Vietnam, Mongolia, Uzbekistan, Laos and the Philippines) where NU Satellite Campuses are located. Through her work, Yumiko has gained professional experience in international cooperation while working with Japan’s Ministry of Foreign Affairs, Japan International Cooperation Agency and MEXT. Back in 2009, she spent a total of 12 months in Montana and North Carolina, participating in the Long-term Education Administrator Program, supported by MEXT. Just few years later, she made a triumphant return to the U.S. in order to attend the Academic Residency of Education’s USA Leadership Institute on Campus Internationalization: Institutional Structures to Support Inbound and Outbound Student Mobility, sponsored by the U.S. Department of State’s Bureau of Educational and Cultural Affairs (ECA). She is thrilled to work with her American colleagues and is always seeking out opportunities to deepen her understanding of higher education in the US while expanding her personal network. She is a frequent traveler and has visited fifteen countries for business and/or pleasure and is looking forward to the opportunity to discover many more different and new places here in the U.S.

(Nashville, November 2017)

(Uzbekistan, May 2017)

Chris Reed (Liaison Officer)

Chris Reed joined the JSPS San Francisco Office as Liaison Officer in August. Previously he worked for the Asahi Shimbun’s San Francisco Bureau reporting on technology and breaking news in the SF Bay Area. Chris has spent a total of 5 years living in Japan, first as an Assistant Language Teacher on the JET Program in Nagasaki and later as a graduate student in the department of Political Science at Waseda University, where he researched pre and post-war kamishibai ("paper theater") propaganda. During his time as an undergrad at the University of California, Davis he spent 10 weeks on an internship living and working in Ise (located in Mie prefecture) at a “children’s home”

(Continued on page 17)
with disadvantaged youth, an experience that jumpstarted his interest in Japan.

Chris is excited to play a role in higher education and furthering academic ties between Japan and the US. He’s also excited to be working with a dynamic and engaging group at JSPS San Francisco while continuing the notable tradition of JET alumni filling the position of Liaison Officer. In his spare time Chris enjoys reading nonfiction (mainly history and economics), cooking (cauliflower Parmesan casserole is his go-to), listening to records (recently he’s taken an interest in early 90s Detroit Techno and early 80s electro-pop from Japan), playing his Sega Genesis (known in Japan as the Sega Mega Drive), and going on outings with his young daughter (she hates being coopted up indoors).

Kaori Enoki joined the JSPS San Francisco Office as International Program Intern at the beginning of July 2017 and will stay for two years. Prior to JSPS, she was working for the High Energy Accelerator Research Organization (KEK, Tsukuba City, Ibaraki Prefecture) for eight years. Her last position in KEK was at the J-PARC Center Users Office where she worked in operations and dormitory and apartment maintenance for J-PARC Center facilities users.

She is grateful for the opportunity to experience not only the dynamism of physics but of the scientific research community as a whole.