

Swiss Federal
Institute of
Technology Zürich
(ETH Zürich)

The University of
Tokyo

Project to Establish
a Strategic Partnership

FY2018

Foreword

With the cooperation of the School of Science, the School of Engineering, the Graduate School of Information Science and Technology, and the International Center for Elementary Particle Physics, the University of Tokyo (UTokyo) aims to establish a strategic partnership with the Swiss Federal Institute of Technology Zürich (ETH Zürich) that will promote academic and student exchange between the two institutions. This strategic partnership is being implemented as part of the “Constructing a Global Campus Model at UTokyo” project, which started in FY2014.

There is already a history of interaction between UTokyo and ETH Zürich as a result of collaborative research, symposia, and student and researcher exchanges. Through this project, we intend to extend this interaction over a wider range of disciplines and develop a structured system for academic exchange between the two universities.

Constructing a Global Campus Model at UTokyo

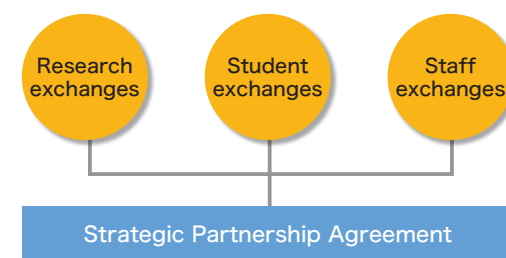
This project was selected as one of the Ministry of Education, Culture, Sports, Science and Technology’s “Top Global University Projects” in FY2014. Its three main aims are:

1. To establish strategic partnerships at the whole-university level, with the aim of developing close, creative, and collaborative relationships with the top universities in the world
2. To radically strengthen our university’s educational capability and comprehensively reform education in response to globalization
3. To establish a core platform to strengthen and integrate our university’s international operations

We aim to construct a model global campus in the 10 years leading up to FY2023.

About the Strategic Partnership Project

UTokyo’s strategic partnerships are close, creative, and flexible collaborative relationships that make use of the strengths of our university as a whole and those of a limited number of partner universities. They are a new type of inter-university relationship that take a step beyond conventional academic exchange agreements with overseas universities. Building on ties established through collaborative research in cutting-edge fields, UTokyo’s strategic partnerships aim to generate a variety of collaborative projects and academic exchanges that fit the circumstances and requests of both institutions.



UTokyo’s first strategic partnership was with Princeton University, and we have now established partnerships with nine other strategic partner universities, including ETH Zürich, and nine prospective strategic partners.

The Strategic Partnership Project aims to open up the frontiers of academic investigation and promote collaborative research through activities such as joint symposia and reciprocal exchanges, primarily involving young researchers. By actively promoting student exchanges, the project will foster “global” scientists who are capable of engaging in activities on an international level. Moreover, exchange of administrative staff members will strengthen the administrative support for academic and student exchanges.

At the start of the Strategic Partnership Project, there were already more than 10 collaborations between researchers at UTokyo and ETH Zürich, mainly in the natural sciences. The Department of Chemistry (School of Science, UTokyo) is particularly active, with researchers interacting across a broad range of fields, including physical, organic, and inorganic chemistry. The Center for Nuclear Study (School of Science), the Departments of Chemical System Engineering and Architecture (School of Engineering), the Graduate School of Information Science and Technology, and the International Center for Elementary Particle Physics at UTokyo also participate in academic and student exchanges with ETH Zürich. Furthermore, the two universities are both members of the International Alliance of Research Universities (IARU), and participate in reciprocal exchanges with the backing of this organization.

A Comprehensive, Close, and Collaborative Relationship



Revision of the Inter-university Agreement

With the agreement of the School of Science, the School of Engineering, the Graduate School of Information Science and Technology, and the International Center for Elementary Particle Physics, as well as the School of Economics, the Graduate School of Frontier Sciences, and the School of Agriculture and Life Sciences, the Strategic Partnership Agreement was signed by Prof. Lino Guzzella, President of ETH Zürich, and Prof. Makoto Gonokami, President of UTokyo, and went into effect on January 12, 2016.



Strategic Partnership Agreement between ETH Zürich and UTokyo

Academic Staff Exchanges

◆2018

June Prof. Toshinori Mori and Associate Prof. Wataru Ootani of the International Center for Elementary Particle Physics (UTokyo) visited the Paul Scherrer Institute (PSI) in the ETH Domain. They held a meeting about the summer school program that would be held at PSI in August.

September 5 Dr. Markus Mattern from the Swiss pharmaceutical company F. Hoffmann-La Roche visited Associate Prof. Hirokazu Sugiyama and his research group in the Department of Chemical System Engineering (School of Engineering, UTokyo) to discuss their research.

December 5 – 6 Prof. Kimito Funatsu of the Department of Chemical System Engineering (School of Engineering, UTokyo) participated in the ETH Symposium “RETHINK Drug Design” at swissnex San Francisco, which is run by the Swiss State Secretariat for Education, Research, and Innovation (SERI). RETHINK is an organization based at ETH Zürich that examines trends in research on artificial intelligence (AI). This particular workshop looked at the impact of AI on drug design and was organized by Prof. Gisbert Schneider, Prof. Funatsu’s counterpart at ETH Zürich.



Participants at the ETH Symposium “RETHINK Drug Design” in San Francisco

◆2019

March 27 Prof. Kimito Funatsu of the Department of Chemical System Engineering (School of Engineering, UTokyo) visited ETH Zürich for a meeting about the research that he is carrying out in collaboration with researchers there.

Exchanges and Recruitment of Students and Young Researchers

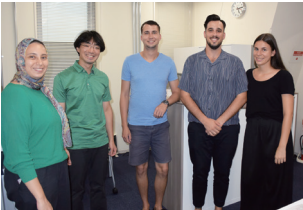
◆2018

From March Dr. Sara Badr, who received her doctoral degree from the Institute for Chemical and Bioengineering (Department of Chemistry and Applied Biosciences, ETH Zürich), joined Associate Prof. Hirokazu Sugiyama’s research group in the Department of Chemical System Engineering (School of Engineering, UTokyo) as a scientific researcher.

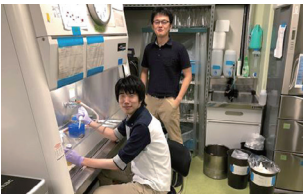
April – August Mr. Philipp Zürcher, a Master’s student in the Institute for Chemical and Bioengineering (Department of Chemistry and Applied Biosciences, ETH Zürich), worked on research for his Master’s thesis under the supervision of Associate Prof. Hirokazu Sugiyama in the Department of Chemical System Engineering (School of Engineering, UTokyo).

April – August Two students from ETH Zürich each spent one semester in the Graduate School of Information Science and Technology (UTokyo) under the University-wide Student Exchange Program (USTEP). Mr. Gani Aliguzhinov, originally from Afghanistan, worked under Associate Prof. Shinpei Kato in the Department of Computer Science, while Mr. Paul Scheffler, from Luxembourg, carried out research under Associate Prof. Hidetsugu Irie in the Department of Information and Communication Engineering.

From May Dr. Naohiro Terasaka, who had been carrying out research under Prof. Donald Hilvert in the Department of Chemistry and Applied Biosciences (ETH Zürich) since 2015, joined Prof. Hiroaki Suga’s research group in the Department of Chemistry (School of Science, UTokyo) as a Project Assistant Professor. Assistant Prof. Terasaka and Mr. Yamato Komatsu, a first-year Master’s student in Prof. Suga’s group, have now started a new collaborative research project with Prof. Hilvert.



Students and researchers in the Hirao-Sugiyama group with connections to ETH Zürich. From left: Dr. Badr, Associate Prof. Sugiyama, Mr. Zürcher, Dr. Casola, Ms. Zeberli

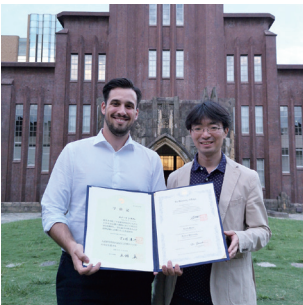


Assistant Prof. Terasaka (right) with Mr. Komatsu (left)

June Associate Prof. Yusuke Obuchi and 10 Master’s students from the Department of Architecture (School of Engineering, UTokyo) visited ETH Zürich, where Ms. Gergana Rusenova, a doctoral student in the Department of Architecture (ETH Zürich), showed the group around the National Centre of Competence in Research (NCCR) Digital Fabrication. Afterwards, the Master’s students from Prof. Obuchi’s group gave a joint presentation/demonstration with two doctoral students from ETH Zürich and exchanged ideas about their research.

August – September Mr. Naoya Ozawa, a first-year Master’s student in Prof. Yasuhiro Sakemi’s research group in the Center for Nuclear Study (School of Science, UTokyo), spent 2 months at ETH Zürich and the Paul Scherrer Institute (PSI). He worked on the development of a magnetometer, one of the research projects that Prof. Sakemi’s group is carrying out in collaboration with ETH Zürich.

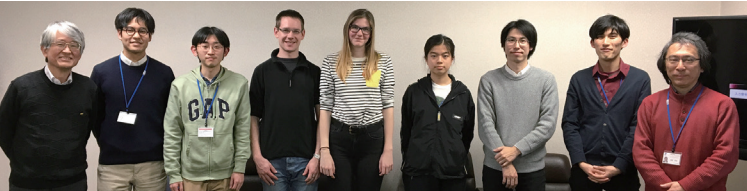
September Mr. Gioele Casola, who received his Master’s degree from the Institute for Chemical and Bioengineering (Department of Chemistry and Applied Biosciences, ETH Zürich), graduated with his doctoral degree from UTokyo. He had been working under the supervision of Associate Prof. Hirokazu Sugiyama in the Department of Chemical System Engineering (School of Engineering, UTokyo) since 2015.



Dr. Casola and Associate Prof. Sugiyama

September An undergraduate student from ETH Zürich visited the Graduate School of Information Science and Technology (UTokyo) under the University-wide Student Exchange Program (USTEP). Although the School does not usually offer undergraduate lectures in English, Prof. Reiji Suda and Prof. Hiroshi Imai of the Department of Computer Science created a collection of seven special classes for this academic year.

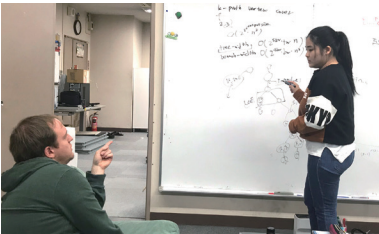
September – February Ms. Rafaela Gsponer, a Master’s student at ETH Zürich, spent 6 months in Prof. Yasuhiro Sakemi’s research group in the Center for Nuclear Study (School of Science, UTokyo) under UTokyo’s University-wide Student Exchange Program (USTEP). She worked mainly on particle physics research using laser-cooled atoms.



Ms. Gsponer (center) with Prof. Sakemi’s research group

December Mr. Edgars Lakis, a doctoral student in Prof. Jörn Piel’s research group in the Institute of Microbiology (Department of Biology, ETH Zürich), spent 2 weeks in Prof. Hiroaki Suga’s research group in the Department of Chemistry (School of Science, UTokyo) to initiate a collaboration between the two groups.

December Mr. Patrick Schnider, a graduate student from ETH Zürich, spent a week in the Graduate School of Information Science and Technology (UTokyo). He delivered a talk on discrete geometry at the Department of Computer Science lecture series and discussed related problems with UTokyo students.



Mr. Schnider with Ms. Eriko Kurimoto

◆2019

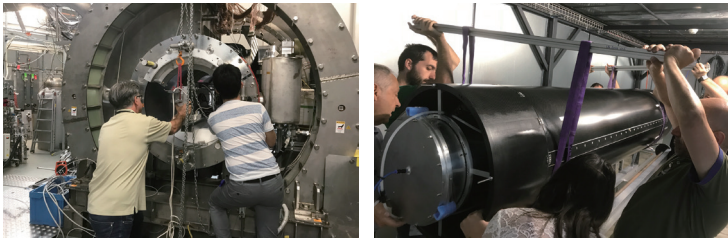
February 21 – 25 Associate Prof. Hirokazu Sugiyama of the Department of Chemical System Engineering (School of Engineering, UTokyo); Dr. Sara Badr, a scientific researcher; and Ms. Kozue Okamura and Ms. Nozomi Takahashi, undergraduate students in Prof. Sugiyama’s research group, visited F. Hoffmann-La Roche and ETH Zürich to discuss their research.

Summer Programs

◆2018

July 31 – August 2
& August 21 – 22

Five Master’s students from the Department of Physics (School of Science, UTokyo), three graduate students from ETH Zürich, and six students from Italy participated in the fourth summer school program held at the Paul Scherrer Institute (PSI). The program offered hands-on training through participation in the international collaborative research being carried out at PSI, and the students learned about cutting-edge research in particle physics as well as the experimental technology used for the research.



Summer school program at PSI

August –
September

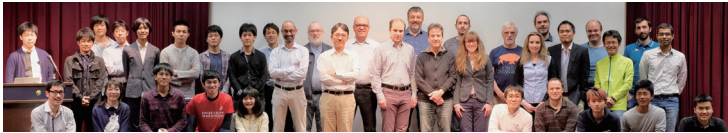
Mr. Naoya Ozawa, a first-year Master’s student in Prof. Yasuhiro Sakemi’s research group in the Center for Nuclear Study (School of Science, UTokyo), attended the Paul Scherrer Institute (PSI) summer school program during his 2-month stay in Switzerland.

Symposia, Seminars, and Workshops

◆2018

April 5 – 6

An international seminar on international collaborative research being carried out at the Paul Scherrer Institute (PSI), as well as other related research, was held at UTokyo. To coincide with the start of the JSPS Core-to-Core Program “Global Developments of Researches in Lepton Flavor Physics with Muons,” the participants held in-depth discussions on the current state of the field and their expectations for future experimental research. A total of 35 participants attended the seminar, including seven Master’s students from the Department of Physics (School of Science, UTokyo) and one graduate student from ETH Zürich, who reported their results from last year’s summer school program. Several researchers from related fields also joined the discussions about developments in student education, which focused on the results and future plans for the summer school program. Related seminars were held in Switzerland in June and October, and in Japan in March, 2019. The seminar in March also included a report of the summer school program held at PSI in August.



International seminar on collaborative research at PSI

The JSPS Core-to-Core Program led by Prof. Toshinori Mori of the International Center for Elementary Particle Physics (ICEPP, UTokyo) is a collaboration among ICEPP, PSI, and the National Institute for Nuclear Physics (Istituto Nazionale di Fisica Nucleare, INFN) in Pisa, Italy. It focuses on research and student exchange.

June

Associate Prof. Yusuke Obuchi and 10 Master’s students from the Department of Architecture (School of Engineering, UTokyo) visited the Swiss Institute (Istituto Svizzero) in Rome. There, they participated in a review of digital fabrication research carried out by the group of Profs. Fabio Gramazio and Matthias Kohler in the Department of Architecture (ETH Zürich), toured the final work, and exchanged ideas.

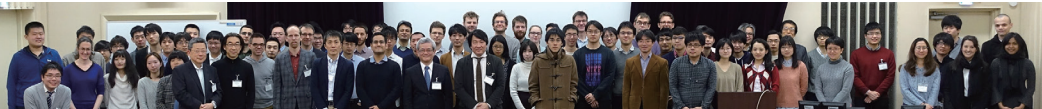


Research review meeting at the Istituto Svizzero

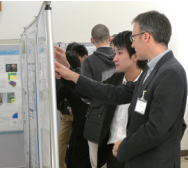
◆2019

January 21 – 22

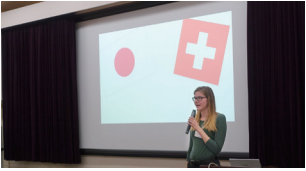
The “3rd ETH Zürich-The University of Tokyo Strategic Partnership Symposium on the UN Sustainable Development Goals and Innovation” was held at UTokyo. Over 100 students and researchers attended the symposium, including five faculty members and three graduate students from ETH Zürich. The main scientific sessions covered fields as diverse as architecture, particle physics, chemistry, and information science and technology, and a poster session gave the participants a chance to ask questions and discuss ideas in more detail, strengthening the interaction between the two universities. With a view to introducing exchange in the area of entrepreneurship, Mr. Takafumi Yamamoto, President and Representative Director of Todai TLO, was invited to give a plenary lecture on university-industry collaborations in Japan.



Group photo



Poster session



Presentation by Ms. Rafaela Gsponer



From left: Prof. Wörner (ETH Zürich), Prof. Yamanouchi (UTokyo), Prof. Sekimura (UTokyo), Mr. Meyer (Embassy of Switzerland in Japan)

Naoya Ozawa

First-year Master’s student, Department of Physics, Graduate School of Science

“The symposium gave me the chance to meet some of the people I got to know in Switzerland for a second time and to continue our research exchange. I also learned about research that I did not know about before now, both in my own and other fields.”

Atsushi Oya

First-year Master’s student, Department of Physics, Graduate School of Science, and International Center for Elementary Particle Physics

“For me personally, the poster session was particularly worthwhile. It not only gave us students the chance to deepen our understanding of each other’s research, but also provided a rare opportunity to talk to students from ETH Zürich about their daily lives and to get to know them better.”

Kozue Okamura

Fourth-year Bachelor’s student, Department of Chemical System Engineering, Faculty of Engineering

“There were many different themes in the symposium, and each was very interesting. The session on physical chemistry was especially impressive, since it deepened my understanding of the subject. Also, the opportunity to exchange research and knowledge was valuable and exciting for me. I would like to participate in the symposium again next time.”

January

The Graduate School of Information Science and Technology (UTokyo) held a 1-day discussion meeting on social ICT and market sustainability with Dr. Spencer Wheatley of the Chair of Entrepreneurial Risks (Department of Management, Technology and Economics, ETH Zürich) and Project Assistant Prof. Ryohei Hisano of the Social ICT Research Center (Graduate School of Information Science and Technology, UTokyo).

March

Associate Prof. Yusuke Obuchi of the Department of Architecture (School of Engineering, UTokyo) organized a meeting at ETH Zürich to present and discuss the design of a pavilion that will be built for the 2020 Tokyo Olympics in collaboration with researchers from ETH Zürich. The team are preparing to start building a prototype of the pavilion in Tokyo in June 2019.

Other Activities

◆2019

March 15

Prof. Naoto Sekimura, Vice President of UTokyo, and Prof. Hiroaki Suga of the Department of Chemistry; Dr. Satoru Nogami, Senior URA; and Dr. Kate Harris, URA, (all three of the School of Science, UTokyo) met Mr. Thomas Meyer, Head of the Science & Technology Office Tokyo of the Embassy of Switzerland in Japan, to discuss future ideas regarding the strategic partnership between UTokyo and ETH Zürich.



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- School of Engineering
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