The Third UTokyo Strategic Partnership Symposium Report

Friday, March 17th, 2017
Auditorium, Faculty of Science Bldg. 2, UTokyo
1. Peking University / Akio Takahara, Professor, GS of Public Policy
2. Shigeto Sonoda, Deputy Director General, Division of International Affairs
3. Massachusetts Institute of Technology / Kazuo Hiekata, Associate Professor, GS of Frontier Sciences
4. The Australian National University / Ryoji Sato, GS of Arts and Sciences
5. The Australian National University / Yujin Yaguchi, Professor, GS of Arts and Sciences
6. Swiss Federal Institute of Technology in Zurich / Hirokazu Sugiyama, Associate Professor, School of Engineering
7. Peking University / Yuiko Minami, graduate student, GS of Public Policy
8. The Australian National University / Reishi Mitani (right) and Akuru Urayama (left), undergraduate student, College of Arts and Sciences
9. Massachusetts Institute of Technology / Kota Okada, graduate student, GS of Frontier Sciences
11. Princeton University / Yasuyuki Ono, Professor, GS of Frontier Sciences
12. Group of Sweden / Junichiro Shiomi, Associate Professor, School of Engineering
13. Tsinghua University / Ichiro Sakuma, Professor, School of Engineering
14. University of California, Berkeley / Toshitake Kohno, Dean, GS of Mathematical Sciences
15. University of Cambridge / Mikiko Kikuchi, Lecturer, GS of Pharmaceutical Sciences
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# The Third UTokyo Strategic Partnership Symposium

**Program**

**Date and Time:** Friday, March 17th, 2017 from 9:00 - 12:00

**Venue:** Auditorium, 4th Floor, Faculty of Science Bldg. 2

**Moderator:** James Fegan (Project Specialist, International Planning Group, International Affairs Department)

<table>
<thead>
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<th>Time</th>
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<tr>
<td>9:00-9:05</td>
<td><strong>Opening Remarks</strong></td>
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<tr>
<td>9:05-9:20</td>
<td><strong>Introduction</strong></td>
</tr>
<tr>
<td>9:20-10:10</td>
<td><strong>Presentation 1</strong> (15 min/presentation, 5 min Q&amp;A after all presentations)</td>
</tr>
<tr>
<td>9:20-</td>
<td><strong>Peking University</strong></td>
</tr>
<tr>
<td>9:35-</td>
<td><strong>Massachusetts Institute of Technology</strong></td>
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<tr>
<td>9:50-</td>
<td><strong>The Australian National University</strong></td>
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<tr>
<td>10:05-</td>
<td><strong>Q&amp;A</strong></td>
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<tr>
<td>10:10-10:25</td>
<td><strong>Break</strong></td>
</tr>
<tr>
<td>10:25-12:00</td>
<td><strong>Presentation 2</strong> (10 min/presentation, 5 min Q&amp;A after all presentations)</td>
</tr>
</tbody>
</table>

## Presentation 1

9:00-9:05 **Opening Remarks**

- Masashi Haneda  Executive Vice President, Director General of the Division of International Affairs

9:05-9:20 **Introduction**

- Shigeto Sonoda  Deputy Director General, Division of International Affairs

9:20-10:10 **Presentation 1** (15 min/presentation, 5 min Q&A after all presentations)

<table>
<thead>
<tr>
<th>University</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peking University</td>
<td>Akio Takahara  Professor, Graduate School of Public Policy</td>
</tr>
<tr>
<td></td>
<td>Shigeto Sonoda  Deputy Director General, Division of International Affairs</td>
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<tr>
<td></td>
<td>Yuiko Minami  Graduate student, Graduate School of Public Policy</td>
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<td>Yujin Yaguchi  Professor, Graduate School of Arts and Sciences</td>
</tr>
<tr>
<td></td>
<td>Ryoji Sato  Project Assistant Professor, Graduate School of Arts and Sciences</td>
</tr>
<tr>
<td></td>
<td>Akuru Urayama  Undergraduate student, Natural Sciences, Junior Division, College of Arts and Sciences</td>
</tr>
<tr>
<td></td>
<td>Reishi Mitani  Undergraduate student, Natural Sciences, Junior Division, College of Arts and Sciences</td>
</tr>
</tbody>
</table>

10:10-10:25 **Break**

10:25-12:00 **Presentation 2** (10 min/presentation, 5 min Q&A after all presentations)

<table>
<thead>
<tr>
<th>University</th>
<th>Speakers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swiss Federal Institute of Technology in Zurich</td>
<td>Hirokazu Sugiyama  Associate Professor, School of Engineering</td>
</tr>
<tr>
<td>Time</td>
<td>University</td>
</tr>
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<tr>
<td>10:35</td>
<td>Princeton University</td>
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<tr>
<td>10:45</td>
<td>Seoul National University</td>
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<td>10:55</td>
<td>Group of Sweden</td>
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<tr>
<td></td>
<td>(KTH Royal Institute of Technology, Stockholm University, Karolinska Institute)</td>
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<tr>
<td>11:05</td>
<td>Tsinghua University</td>
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<tr>
<td>11:15</td>
<td>University of California, Berkeley</td>
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<tr>
<td>11:25</td>
<td>University of Cambridge</td>
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<tr>
<td>11:35</td>
<td>Q&amp;A</td>
</tr>
<tr>
<td>11:40</td>
<td>Closing Remarks</td>
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</tbody>
</table>
Strategic Partnership Universities: progress to date and where to from now

The 3rd Strategic Partnership Symposium
March 17, 2017

Shigeto Sonoda, Prof.
Deputy Director General
Division of International Affairs
The University of Tokyo
1. What is Strategic Partnerships?
Why The Strategic Partnership Project Was Started

Constructing a Global Campus Model as a leading research university from among the non-English speaking regions

Contribution to knowledge and values of a global society through research and education

6 characteristics of the Global Campus Model at UTokyo

- World-class cutting-edge research
- Comprehensive education reform
- Degree programs in English
- Diversity environment
- High-level research and education in Japanese
- Organization and staff support the Global Campus
1. Comprehensive Reform of Education System
A New and Effective Education System

2. Strategic Partnerships
Global Outreach in Education and Research

3. Building Up a Core Platform
Integrating, managing, and creating effective networks
Strategic Partnerships

• An expansive, mutually-beneficial, and special relationship
• Goes beyond the usual academic exchange agreement with a limited number of univ.
• Takes advantage of the strength of both univ.

✔ To expand the number of fields in which collaboration take place between UTokyo and the partner universities.

✔ To enhance the mobility of faculty, administrative staff and students.

✔ To establish a sustainable relationship with university-wide support from both universities/partners and external funding.
Strategic Partnerships

- **Cutting-edge Research Collaboration**
  in many different fields including emerging topics, interdisciplinary fields and new collaboration networks.

- **Collaboration in Educating Graduate Students**
  based on the research collaboration primarily for graduate students exposing them to high quality research achievements.

- **Promote Undergraduate Student Exchange**
  through a collaborative management of activities such as summer/winter programs.
2. Achievement and Future

Activities carried out in conjunction with the aim of “Vision 2020” and status of “Designated National University” in mind
• Aim to establish strategic partnership
• Identify & connect projects of different & diverse depts.
• 26 overseas univs.
**From Phase 1 to Phase 2**

## Examples of criteria used to prioritize projects

| **Compatibility** | ✓ Institution-to-institution cooperation  
✓ Similar/complementary fields of excellence  
✓ Mutual benefit and shared resources  
✓ Active research collaborations and student exchanges |
| **Sustainable Structure within the University** | ✓ Involving many faculty, staff, and students (institution-wide)  
✓ Interdisciplinary  
✓ Faculty-led |
| **Potential for Growth** | ✓ Expansive vision/plan  
✓ Industry/government relation |

**Excellence**  
**Mobility**  
**Diversity**
10 Primary Strategic Partnership Universities
**Project Progress**

**Phase 1**
- Aim to establish strategic partnership
- Identify & connect projects of different & diverse depts.
- 26 overseas univs.

**Phase 2**
- Convert existing projects to interdisciplinary and university-wide exchanges
- Aim to establish sustainable relationships
- Expand network by involving industry & government
- 10+9 overseas univs.

**Phase 3**

**2014**

**2015**

**2016**

**2017**

**2018**

**2019**

**2020**

**2021**

**2022**

**2023**

**2024**
## 10 Primary Strategic Partnership Universities

<table>
<thead>
<tr>
<th>University</th>
<th>Deps.</th>
<th>Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australian National University*</td>
<td>6 depts.:</td>
<td>School of Science, School of Engineering, Graduate School/College of Arts and Sciences, Graduate School of Public Policy (GraSPP), Atmosphere and Ocean Research Institute, Earthquake Research Institute</td>
</tr>
<tr>
<td>Swiss Federal Institute of Technology in Zurich (ETHZ)*</td>
<td>4 depts.:</td>
<td>School of Science, School of Engineering, Graduate School of Information Science and Technology (IST), International Center for Elementary Particle Physics</td>
</tr>
<tr>
<td>Massachusetts Institute of Technology</td>
<td>6 depts.:</td>
<td>Graduate School of Frontier Sciences (GSFS), School of Engineering, Graduate School of Mathematical Sciences, IST, Institute of Industrial Science (IIS), Center for Research and Development of Higher Education</td>
</tr>
<tr>
<td>Peking University*</td>
<td>5 depts.:</td>
<td>Faculty of Law/Graduate Schools for Law and Politics, School of Engineering, Graduate School/College of Arts and Sciences, Graduate School of Mathematical Sciences, GraSPP</td>
</tr>
<tr>
<td>Princeton University*</td>
<td>8 depts.:</td>
<td>Faculty of Law/Graduate Schools for Law and Politics, Graduate School/Faculty of Medicine, School of Engineering, School of Science, Graduate School/College of Arts and Sciences, Graduate School of Mathematical Sciences, GSFS, VLSI Design and Education Center</td>
</tr>
</tbody>
</table>

*Strategic Partnership Agreement/MOU already signed
<table>
<thead>
<tr>
<th>University</th>
<th>Depts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seoul National University*</td>
<td>9 depts.: Faculty of Law/Graduate Schools for Law and Politics, Graduate School/Faculty of Medicine, School of Engineering, Graduate School of Agricultural and Life Sciences/Faculty of Agriculture, Graduate School/College of Arts and Sciences, Graduate School of Mathematical Sciences, Interfaculty Initiative in Information Studies(III)/Graduate School of Interdisciplinary Information Studies(GSII), GraSPP, IIS</td>
</tr>
<tr>
<td>Group of Sweden (Stockholm University, KTH Royal Institute of Technology, Karolinska Institutet)</td>
<td>7 depts.: School of Engineering, Graduate School/Faculty of Medicine, Graduate School of Agricultural and Life Sciences/Faculty of Agriculture, Graduate School/Faculty of Education, GSFS, Research Center for Advanced Science and Technology (RCAST), Institute of Gerontology</td>
</tr>
<tr>
<td>Tsinghua University</td>
<td>7 depts.: School of Engineering, School of Science, Graduate School/College of Arts and Sciences, GSFS, III/GSII, IIS, Institute for Solid State Physics</td>
</tr>
<tr>
<td>University of California, Berkeley</td>
<td>6 depts.: Graduate School of Mathematical Sciences, School of Engineering, School of Science, Graduate School/College of Arts and Sciences, Institute of Social Science, Kavli IPMU</td>
</tr>
<tr>
<td>University of Cambridge*</td>
<td>6 depts.: School of Engineering, Faculty of Letters/Graduate School of the Humanities and Sociology, Graduate School/Faculty of Pharmaceutical Sciences, Graduate School of Mathematical Sciences, IIS, RCAST</td>
</tr>
</tbody>
</table>

*Strategic Partnership Agreement/MOU already signed
Prospective Strategic Partners are universities that conform to the principals for the primary strategic partnership universities or complement areas such as ASEAN, France, Latin America, Africa, etc.

- National Taiwan University
- National University of Singapore
- Technische Universität München
- University of Chicago
- University of Chile and Pontificia Universidad Católica de Chile
- University of Nairobi
- Vietnam National University, Hanoi
- Yangon Technological University
- (France: TBD)
**Project Progress**

**Phase 1**
- Aim to establish strategic partnership
- Identify & connect projects of different & diverse depts.
- 26 overseas univs.

**Phase 2**
- Convert existing projects to interdisciplinary and university-wide exchanges
- Aim to establish sustainable relationships
- Expand network by involving industry & government
- 10+9 overseas univs.

**Phase 3**
- Complete a Global Campus model by maintaining sustainable university-wide relationships with strategic partnership univs.

Timeline:
- FY2014
- 2015
- 2016
- 2017
- 2018
- 2019
- 2020
- 2021
- 2022
- 2023
- 2024
International Objectives of UTokyo – Future Goals

- Enhancement of research capability through reforms to graduate schools, increase of overseas students, international education, and global collaborative leading-edge advanced research
- Development of interdisciplinary fusion
- Enhancement the visibility of UTokyo and communication of our work around the world
Thank you very much for your attention!
Strategic Partnership between PKU and UTokyo

AKIO TAKAHARA
PROFESSOR OF GRADUATE SCHOOLS FOR LAW AND POLITICS
Strategic Partnership Projects with PKU

- Graduate Schools for Law and Politics
- Graduate School of Engineering
- Graduate School of Arts and Sciences
- International Affairs Division
- Peking Alumni Association

- Graduate School of Mathematical Sciences
- Graduate School of Public Policy

5 Schools
Strategic Partnership Projects with PKU

- Law School
- School of International Studies
- College of Chemistry and Molecular Engineering
- School of Mathematical Sciences
- Yuanpei College

5 Schools and Colleges

- Office of International Relations
Strategic Partnership Projects with PKU

- Workshops
- Symposiums
- Faculty exchanges
- Double degree
- Joint research
- Student exchanges
- Summer programs
- Winter programs
- Joint courses
- Staff exchanges, etc.
University-wide Activities with PKU

March, 2015  Signing of the Memorandum of Strategic Engagement
July, 2015   PKU Senior Administrators’ Training Program @UTokyo
Oct, 2016   Top level Meeting between Presidents
Nov, 2016   UTokyo Staff Training Program @PKU
Future Plans

Stronger partnership

<University-level>
1. Staff Training Program
2. Joint Summer/Winter Program
3. Student Exchange
4. Cooperation with UTokyo Alumni
5. Top Level Link

<Departmental-level>
Continue and broaden activities
• CAMPUS Asia Program etc.
PKU-UTokyo Joint Summer Program 2016
“Understanding Japanese Companies in China”

Shigeto SONODA

Deputy Director General,
Division of International Affairs,
The University of Tokyo
Timeline

*May    Call for participation @ PKU and UTokyo
*June   Screening of participants
*July 2  Kick-off meeting and grouping @ UTokyo / 8 PKU + 12 UTokyo
*August 20-30 Activities at Beijing
*August 31 Final Presentation

Special thanks to Ms. KAMBARA Miki
Snapshots of Activities

22nd of August, 2016

23rd of August, 2016

23rd of August, 2016

24th of August, 2016
31st of August, 2016
PKU U-Tokyo Summer Program

University of Tokyo,
Graduate School of Public Policy,
International Public Policy Program,
Yuiko Minami
Before the program

- My reasons for application
  1. Experience in Hong Kong
  My images of Mainland China might be biased.
  → I felt I should know China more.
  2. China is changing every day
  I would like to see “today’s China”.

- My past images of Beijing
  Many people, air pollution, censorship...
We learned and enjoyed many things in Beijing

- Many lectures
- Group work
- Sightseeing
- Talk with my roommate
- Enjoy Chinese foods
Most impressive lecture

/Public Diplomacy/

- We learned a concept, “Public Diplomacy (公共外交)” by the lecture in Japanese Embassy in China.
- Japanese embassy tries to appeal Chinese citizens directly (using SNS or promoting travel by issuing VISA, etc), to improve the relationship between Japan and China.
- Knowing each culture is important.
- We felt the possibility of our good relationship in civil level.

/Public Diplomacy and This program/

- This program offered us a chance to communicate with each other.
- We actually do this kind of things trough this program.
The best things of this program

1. We still keep in touch.
2. Some PKU students are considering to study in Tokyo, and some will come to Japan in this Spring to study and to work.
3. Japanese students’ images of Beijing have changed.
4. Before this program, some students had negative images about China.
5. Now, it has changed and we have positive images (Ex. friendly, advanced).
6. I think, now many of us is hoping to build a good relationship between Japan and China.
Thank You !!!
UTokyo/ANU Exchange in Tokyo and Canberra

An interdisciplinary student exchange program
Our activities with ANU

Graduate School of Public Policy:
1. Establishment of a double degree program with the Crawford School of Public Policy, ANU, one UT student will be dispatched in July
2. Two faculty members visiting ANU for Seminar about regional security with Crawford School of Public Policy in March
3. dispatch 3 TAs to UT/ANU exchange program

Faculty of Engineering
UTokyo-ANU Symposium on Quantum Information and Control
(March 6@ANU, 2 faculty members and 6 students from UT participated)

Atmosphere and Ocean Research Institute
UTokyo-ANU partnership symposium 2017 (March 17@Hongo)
UTokyo/ANU exchange

1. Tokyo Component
   (Jan 9-20)

   Tokyo and Yamanaka/Fuji

2. Canberra Component
   (Jan 29-Feb 11)

   Canberra and Kioloa
The program: the UTokyo component

- Focused on Mt. Fuji, aimed to understand the complex social and cultural dynamics operating behind Mt. Fuji
- Topics taught involve: religion, pilgrimage, gender, aesthetics, literature, politics of tourism, climate change, volcanology
The program: the UTokyo component

Three-day trip to Yamanaka/Fuji

Museum

...and some hands-on experiences

Fieldwork

UTokyo students and ANU students staying in Japanese-style shared bedrooms together
The Program: the ANU component

Convened by Simon Haberle, PhD. Professor, Director of the School of Culture, History and Language

Focusing on changing landscapes, learned about environments and cultures, particularly indigenous Australian culture and its technique to maintain natural landscape

- Field trips to Tidbinbilla Nature Reserve and Namadgi National Park National Parks guided by Aboriginal rangers,
- Museum visits: the National Museum of Australia, the National Gallery of Australia
The Program: the ANU component

Welcomed by local indigenous people

Learning indigenous culture indoors and outdoors

Kioloa campus and final presentations

Experiencing Australian culture ...
Student Report

Akuru Urayama  
Undergraduate student, Natural Sciences II,  
Junior Division

Reishi Mitani  
Undergraduate student, Natural Sciences II,  
Junior Division
Summary

- Rare opportunities to learn about unknown aspects of Japan and Australia
- Ample opportunities to interact with ANU students and making lifetime friendship
- High satisfaction level of students

Acknowledgment:
most photos are taken by one of our wonderful TAs, Isaac Lee
EXPERIENCE ABROAD

Akuru Urayama
Impression

Open place and people / multiculturalism

Vast natural environment
Change: before/after

I gonna break down...!
Absent from daily life

◦ "being busy = leading satisfying life”

◦ "can enjoy yourselves = leading satisfying life”
More Interest in Asian countries
Communication skills

- Words, words, words!
- Body languages!!
- Facial expressions!!!
The most important lesson...

"Do you have something you want to talk about?"
Contents of conversation

Skills of English
  (fluency, accent, etc.)
What I noticed

The world we spend daily life is too small.
I need more experiences and interaction with people from different background.
Outlook on my future

- English and other languages
- Scientific knowledges (biology on ecosystem, plants, animals,)
- Environmental problem and food shortages
- Work in a multinational corporation
- or
- International organization
Thank you for listening!
ANU UTokyo Exchange Program

Reishi Mitani
Lake Yamanaka/Kioloa
Top Global University – Strategic Partnership Project –

MIT Team Project for 2016

Graduate School of Frontier Sciences
Graduate School of Interdisciplinary Information Studies
Center for Research and Development of Higher Education
Graduate School of Engineering
Institute of Industrial Science
Graduate School of Mathematical Sciences

Speakers: Kazuo Hiekata (Assoc. Prof., Graduate School of Frontier Sciences)
Kota Okada (Graduate Student, Graduate School of Frontier Sciences)
# MIT and UTokyo

<table>
<thead>
<tr>
<th>History</th>
<th>Incorporated by the Commonwealth of Massachusetts on April 10, 1861</th>
<th>Established in 1877</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motto</td>
<td>Mens et manus—&quot;Mind and Hand&quot;</td>
<td>UTokyo Charter</td>
</tr>
<tr>
<td>Campus</td>
<td>168 acres in Cambridge, Massachusetts 18 student residences, 26 acres of playing fields</td>
<td>304 acres (3 major campuses) 559,176m² (138 acres) in Hongo 352,180m² (87 acres) in Komaba 320,313m² (79 acres) in Kashiwa</td>
</tr>
<tr>
<td>Employees and Faculty</td>
<td>Approximately 12,110 (including faculty) Professors (all ranks): 1,036 (8.6%) Other teaching staff: 827 (6.8%)</td>
<td>10,526 (including faculty) Professors (all ranks): 2,866 (27.2%) Other teaching staff: 1,882 (17.8%)</td>
</tr>
<tr>
<td>Students</td>
<td>11,331 Undergraduates: 4,527 Women: 2,082 (46%) Graduate students: 6,804 Women: 2,265 (33%) *Academic Year 2015–2016</td>
<td>27,937 Undergraduates: 14,050 Women: 2,632 (19%) Graduate students: 13,887 Women: 3,805 (27%) *As of May 1st, 2015</td>
</tr>
<tr>
<td>International Students</td>
<td>Undergraduates: 440 (9.7%) Graduate students: 2,849 (40.4%) Exchange, visiting, special students: 539</td>
<td>Undergraduates: 260 (1.9%) Graduate students: 2,635 (19.0%)</td>
</tr>
<tr>
<td>Cost</td>
<td>Tuition: $44,720 Room and board: $13,224</td>
<td>Tuition: $4,465 (535,800JPY @1USD=120JPY)</td>
</tr>
</tbody>
</table>
### Strategic Partnership Project – MIT Team – Education Platform Integrated with Multidisciplinary Research

**Mission:** Development of education platform to train students to become complex global problem solvers capable of delivering high quality research outcomes in partnership with MIT

<table>
<thead>
<tr>
<th>Undergraduate</th>
<th>Master</th>
<th>Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Graduate School of Engineering: MIT Joint course and student exchange program</td>
<td>Learning Objective: Motivation for Global Team Research Project</td>
<td>Center for Research and Development of Higher Education: MOOC Project and Student Exchange</td>
</tr>
<tr>
<td><strong>Learning Objectives:</strong></td>
<td></td>
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<tr>
<td>Acquisition of basic disciplines</td>
<td></td>
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<tr>
<td>Exposure to global environment</td>
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<td>Exposure to social and global problems</td>
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<tr>
<td>Experiences in teams with diversity</td>
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<tr>
<td>Access to high quality research outcome</td>
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<tr>
<td>Institute of Industrial Science: MIT Joint Workshop on Reactive Metal Processing</td>
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<tr>
<td>Graduate School of Frontier Sciences: UTokyo, MIT and Industry Collaborative Course</td>
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<tr>
<td>Graduate School of Interdisciplinary Information Studies: Workshop for Educational Technologies at MIT</td>
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<tr>
<td>Graduate School of Mathematical Sciences: Faculty Exchange for Lectures and Seminars</td>
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</tr>
</tbody>
</table>

**Activities partially supported by or relate to Top Global University Project**
Undergraduate Education

Exposure to Global Environment

✓ UT-MIT International Lecture, MOOC, Student Exchange, M-Skype and Hands-on Activities
Undergraduate Student Exchange through UT–MIT Joint Activities

- UT-MIT International Lecture
  UTokyo students have been stayed in MIT from Sep. to Jan., and MIT students started their stay at UTokyo from Jan.
- Joint Lectures: Material Engineering Basic and M-Skype
  Joint courses work as the base for student exchange. The courses are powered by MOOC series ”Visualizing Japan” developed by UTokyo, MIT and Harvard.

UTokyo students group enroll in UT-MIT International Lecture visited MIT in Sep. 2016

UT-MIT students at MIT office and a party hosted by Prof. Miyagawa
Undergraduate Student Exchange – Hands-on Activities –

- University-Wide program, Hands-on Activities
  MIT project offers an opportunity to expose undergraduate students to dynamic global environment with support by MIT-SDM(System Design and Management) course.
- Science Camp in Kashiwa
  GTL provide evening video lecture from MIT for Science Camp in Kashiwa in Feb. 2017

Aug. 2016

Feb. 2017
Graduate Education

Exposure to social and global problems
Experiences in teams with diversity

Global Teamwork Lab, i.school and Study Group
Global Teamwork Lab

Global Teamwork Lab offers series of UTokyo-MIT and Industry joint activities.
- Optimal Systems Design and International Systems Design Workshop (Oct-Jan at Kashiwa)
  Two lectures aligned with MIT-SDM course give opportunities to prepare UTokyo students to be prepared the deep discussion with MIT-SDM students on their thesis with systems approach method.
- Intensive Stay in MIT (March-May at MIT)
  UTokyo student and industry participants stay at MIT for 10 weeks to design their future research project.
- Systems Approach Workshop (March 20, 2017 at MIT) and Biweekly Research Session (in semester at Video)
  UTokyo and MIT students hold a regular research sessions via video and will hold a workshop at MIT to present their research (thesis) work in systems approach context at MIT. 12 UTokyo students (from GSFS, SoE graduate and undergraduate) will join.
- Intern program for MIT student (June-Aug at Industry)
  MIT student involved in the UTokyo-MIT joint activity will have a chance for the stay in Japanese industry partners as summer intern based on the activity of Intensive Stay in MIT.
GTL, i.school and Study Group

i.school (Prof. Horii at UTokyo) started to give lectures on innovation at MIT-SDM in 2016. The lecture is aligned with series of GTL activities. Study group, industry workshop by Graduate School of Mathematical Sciences, and GTL is now planning to collaborate to strengthen the relationship between MIT and UTokyo.

Prof. Horii’s lecture at MIT in Jan 2017.

Team gathering of GTL members from MIT, Utokyo and Industry with Prof. Horii in Jan 2017.

GTL held symposium for recruiting new industry partners in March 2017 in Hongo.
– Collaborative Research Activity – Access to high quality research outcome

Joint Seminar, Lecture an Academic Workshop 2016
Joint Seminars and Scholar Exchange

Joint seminar with MIT Media Lab hosted by Graduate School of Information Science and Technology in June 2016.

MIT visit MIT Media Lab in March 2017.

GSFS hosts 20 students from MIT to show the smart city and the industry collaboration. Jan. 2017.

GSFS held a symposium on Bigdata with MIT faculty and industry experts in Feb 2017 in Hongo.
The 12th Workshop on Reactive Metal Processing (RMW12) was held on March 3–4, 2017, at the Massachusetts Institute of Technology (MIT), Cambridge, USA. The RMW, an annual workshop on material processing, is held in collaboration with industry members and universities worldwide, and has been jointly organized by Prof. Toru H. Okabe of IRCSEM and Prof. Donald R. Sadoway of MIT since 2006. Prof. Antoine Allanore of MIT has also participated as an organizer since RMW10, and Assoc. Prof. Shunsuke Yagi of IRCSEM has also participated as an organizer from this workshop. Approximately 45 researchers from a number of countries, such as the USA, Canada, Norway, and Japan, attended this workshop.

During the two-day workshop, eminent professionals delivered presentations on topics of current interest, such as the production/recycle processing of rare metals and advanced battery materials, which are essential for a sustainable society. The participants also actively engaged in discussions. The RMW is a leading workshop facilitating international research activities in the field of reactive metal processing.
Lecture series by David Vogan

David Vogan (MIT) gave a series of lectures "The Size of Infinite-Dimensional Representations" at 18th Takagi Lectures at UTokyo.

Research collaboration

Yukinobu Toda (UTokyo) visited MIT for a long term and deepened collaboration in algebraic geometry with faculty of MIT.

MIT Lectures at UTokyo by Gilbert Strand

The lectures were held at Graduate School of Mathematical Sciences and Faculty of Engineering.

Joint workshop on partial differential equations and mathematical physics

The workshop was held in collaboration with UC Berkeley and MIT at UTokyo from January 9 to January 13, 2017. Semyon Dyatlov (MIT) gave a lecture.
Report by Students
Overview

2016.08.20 – 2016.9.2

Undergraduate student visited MIT as Hands-on Activities.

- Participated in “boot camp” held in MIT-SDM
- Meetings with MIT researchers
- MIT Media Lab visit
- Lectures by Dr. Bryan Moser, MIT-SDM

Fig.1 Participating students

Fig.2 Dr. Bryan Moser
GTL Activities

• Optimal Systems Design and International Systems Design Workshop
  ➢ A class for students at Kashiwa Campus, UTokyo.
  ➢ The aim of OSD is to understand methods and tools of “System Architecture”.
  ➢ Lecturers: Bryan Moser (MIT/U–Tokyo), Kazuo Hiekata, Takuto Ishimatsu (NASA)
  ➢ Language: English
## Curriculum

<table>
<thead>
<tr>
<th>SYSTEMS CONTEXT</th>
<th>LO1</th>
<th>System</th>
<th>Describe a system and its boundaries</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEMS CONTEXT</td>
<td>LO2</td>
<td>Early PDP</td>
<td>Discuss examples of product development processes (PDP), especially early stages</td>
</tr>
<tr>
<td>SYSTEMS CONTEXT</td>
<td>LO3</td>
<td>Sociotechnical</td>
<td>Convey a product or service as a sociotechnical system</td>
</tr>
<tr>
<td>EXPLORE THE PROBLEM</td>
<td>LO4</td>
<td>Stakeholders</td>
<td>Generate a stakeholder map and analysis of flows</td>
</tr>
<tr>
<td>EXPLORE THE PROBLEM</td>
<td>LO5</td>
<td>Multi-attribute objectives</td>
<td>Express objectives and define as treatable multi-attribute problem</td>
</tr>
<tr>
<td>EXPLORE THE PROBLEM</td>
<td>LO6</td>
<td>System of Systems</td>
<td>Describe 3 level system of systems model: market, system, and operation (for marine)</td>
</tr>
<tr>
<td>EXPLORE THE PROBLEM</td>
<td>LO7</td>
<td>Architectural Decisions</td>
<td>Define architectural decisions in a morphological matrix</td>
</tr>
<tr>
<td>ARCHITECT a SOLUTION SPACE</td>
<td>LO8</td>
<td>Good Models</td>
<td>Select and define model(s) for systems thinking</td>
</tr>
<tr>
<td>ARCHITECT a SOLUTION SPACE</td>
<td>LO9</td>
<td>Model: SD</td>
<td>Develop an System Dynamics of Market/ Operation</td>
</tr>
<tr>
<td>ARCHITECT a SOLUTION SPACE</td>
<td>LO10</td>
<td>Model: DSM</td>
<td>Develop a Design Structure Matrix for the system</td>
</tr>
<tr>
<td>ARCHITECT a SOLUTION SPACE</td>
<td>LO11</td>
<td>Model: STAMP</td>
<td>Understand systemic risk and safety analysis techniques</td>
</tr>
<tr>
<td>ARCHITECT a SOLUTION SPACE</td>
<td>LO12</td>
<td>Model Confidence</td>
<td>Establish validation and confidence in models</td>
</tr>
<tr>
<td>ARCHITECT a SOLUTION SPACE</td>
<td>LO13</td>
<td>Loosely Connected</td>
<td>Analysis using loosely connected models (meta model, interchange approach)</td>
</tr>
<tr>
<td>FRAME a PATH to SOLUTION</td>
<td>LO14</td>
<td>Decisions</td>
<td>Prepare a concept through scenarios, options, and key decisions</td>
</tr>
<tr>
<td>FRAME a PATH to SOLUTION</td>
<td>LO15</td>
<td>Tradespace</td>
<td>Generate a tradespace for architectural system options</td>
</tr>
<tr>
<td>FRAME a PATH to SOLUTION</td>
<td>LO16</td>
<td>Model: Project Design</td>
<td>Design a Complex Systems Project with model-based approach</td>
</tr>
<tr>
<td>FRAME a PATH to SOLUTION</td>
<td>LO17</td>
<td>Re-Frame</td>
<td>Re-frame the architectural choices of system</td>
</tr>
<tr>
<td>FRAME a PATH to SOLUTION</td>
<td>LO18</td>
<td>Next Steps</td>
<td>Propose a research or design challenge for next stage</td>
</tr>
</tbody>
</table>
## Schedule and participants

<table>
<thead>
<tr>
<th>Date</th>
<th>Activity</th>
<th>Additional Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 26</td>
<td>Development of Economic model for marine transportation market</td>
<td></td>
</tr>
<tr>
<td>Nov. 2</td>
<td>Definition of Architectural Decisions for Economic model for marine transportation market</td>
<td></td>
</tr>
<tr>
<td>Nov. 9</td>
<td>Response Surface Generation for Trade Space Exploration</td>
<td></td>
</tr>
<tr>
<td>Nov. 16</td>
<td>Selection of Major Value Drivers for Marine Transportation Market (=Potential Topic for MIT)</td>
<td></td>
</tr>
<tr>
<td>Nov. 30</td>
<td>Expected Outcome Driven by the Changes in Systems Behavior</td>
<td></td>
</tr>
<tr>
<td>Dec. 7</td>
<td>Crafting Presentation Material</td>
<td></td>
</tr>
<tr>
<td>Dec. 14</td>
<td>Dry Run for pitch at MIT</td>
<td></td>
</tr>
</tbody>
</table>

### Industry
- JMU
- NYK GROUP
- NMRI
- ClassNK

### University
- The University of Tokyo
- MIT
- Massachusetts Institute of Technology
Outcomes from Workshop

- Making stakeholder value network (SVN) for marine industry.
- Selecting important value flow
- Defining a scenario of adapting IoT technology to marine industry.
- Technology infusion of IoT
# Project topic sponsor for MIT-SDM

<table>
<thead>
<tr>
<th>Company</th>
<th>Title</th>
<th>Selected</th>
</tr>
</thead>
<tbody>
<tr>
<td>JMU</td>
<td>New Container Transport System</td>
<td></td>
</tr>
<tr>
<td>NYK</td>
<td>Feasibility of Autonomous Navigation Ships</td>
<td></td>
</tr>
<tr>
<td>NYK</td>
<td>New Services Possible through the Evolution of the Onboard Broadband Environment and IoT Technology</td>
<td></td>
</tr>
<tr>
<td>NMRI</td>
<td>Ship Performance Prediction using Cyber Physical System</td>
<td></td>
</tr>
<tr>
<td>NK</td>
<td>Verification of Total Safety of Unmanned Ships World “How to assure safety of AI ?”</td>
<td></td>
</tr>
<tr>
<td>NK</td>
<td>Assured and Accelerated Design Approval System against Complex Technical Requirements</td>
<td></td>
</tr>
</tbody>
</table>

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Intensive Stay in MIT

• Three engineers from industry partners and UTokyo graduate student started their 10 weeks stay at MIT in March 4.

During the intensive stay in MIT program, MIT hosts 12 students from UTokyo to review and re-frame the thesis projects of UTokyo students and the project of industry partners to initiate collaboration on March 20, 2017.
Thank you
Strategic Partnership with ETH Zürich

Hirokazu Sugiyama
Department of Chemical System Engineering
School of Engineering
Strategic Partnership with ETH Zürich

- Asian Top University in Science and Technology
- On the Way of Increasing Internationality

- Continental European Top University
- Outstanding Internationality

Strategic Partnership Agreement was signed off on January 12, 2016
Leading Faculty

School of Science
Chemistry, Physics, Earth and Planetary Science, Biological Science

School of Engineering
Chemical System Engineering, Architecture

Graduate School of Information Science and Technology

International Center for Elementary Particle Physics (ICEPP)

Department of Chemistry and Applied Biosciences (D-CHAB)
Department of Physics (D-PHYS)
Department of Biology (D-BIOL)
Department of Materials (D-MATL)
Department of Computer Science (D-INFK)
Department of Architecture (D-ARCH)
Visit of Former President Professor Eichler on March 10-11

- Many years cooperation in particle physics
- Former director of Paul Scherrer Institute (PSI) which has collaborated with ICEPP for long years
- To explore the possibility of collaboration in new fields

Meeting with Our President Gonokami

Group Photo

Discussion with Partnership Leaders

Visit to Kavli IPMU
# Student Stay/Visit, Enrollment and Employment

## Stay of Graduate Students

<table>
<thead>
<tr>
<th>Time</th>
<th>Name(s)</th>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr-Jul, 2016</td>
<td>Alzbeta Kubinocova, M@ETHZ, Janis Fluri, M@ETHZ</td>
<td>Chemistry@UTokyo</td>
</tr>
<tr>
<td></td>
<td>Julian Riebartsch, M@ETHZ</td>
<td>Physics@UTokyo</td>
</tr>
<tr>
<td>Jul, 2016</td>
<td>Lukas Eberle D@ETHZ</td>
<td>Chemsys@UTokyo</td>
</tr>
<tr>
<td>Sep, 2016-Mar, 2017</td>
<td>Anicia Zeberli, M@ETHZ, Ruben Wuhlgemante, M@ETHZ</td>
<td>GSIST@UTokyo</td>
</tr>
<tr>
<td></td>
<td>Jörg Wieder, M@ETHZ</td>
<td>Physics@UTokyo</td>
</tr>
</tbody>
</table>

## Visit of Graduate Students

<table>
<thead>
<tr>
<th>Time</th>
<th>Name(s)</th>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun-Aug, 2016</td>
<td>Eunice Phua, D1@UTokyo</td>
<td>Material@ETHZ</td>
</tr>
</tbody>
</table>

## Student Enrollment and Employment

<table>
<thead>
<tr>
<th>Time</th>
<th>Name(s)</th>
<th>Departments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apr, 2015 in and after</td>
<td>Naohiro Terasaka</td>
<td>D@UTokyo → PD@ETHZ</td>
</tr>
<tr>
<td>Sep, 2015 in and after</td>
<td>Ryo Asakaura</td>
<td>B@UTokyo → M@ETHZ</td>
</tr>
<tr>
<td>Oct, 2015 in and after</td>
<td>Richard Obexer</td>
<td>D@ETHZ → PD@UTokyo</td>
</tr>
<tr>
<td>Oct, 2015 in and after</td>
<td>Gioele Casola</td>
<td>M@ETHZ → D@UTokyo</td>
</tr>
<tr>
<td>Apr, 2016 in and after</td>
<td>Matthias Strodkötter</td>
<td>M@ETHZ → D@UTokyo</td>
</tr>
<tr>
<td>Sep, 2016 in and after</td>
<td>A GSC student</td>
<td>B@UTokyo → M@ETHZ</td>
</tr>
</tbody>
</table>
Students Presentations on Summer School Programs

✓ Graduate students who have participated Summer School Program at Paul Scherrer Institute (PSI) talk the experiences at the international workshop or seminar on Particle Physics.

International Workshop on Particle Physics in October, 2016 at PSI

International Seminar on Particle Physics in March, 2016 at UTokyo
Extraordinary Seminars and Lectures

✔ Ms. Szedlák, PhD Student (RA) of ETHZ (August, 2016) and Dr. Barba, PD of ETHZ (January, 2017) visited UTokyo and gave lectures at Graduate School of Information Science and Technology.

✔ Roche Researchers Dr. Schmidt and Dr. Mattern visited UTokyo and hold seminars for Chemical System Engineering students in July 5, 2016.

Roche people are closely related to ETHZ (Prof. Hungerbühler) and UTokyo Dept. of Chemical System Engineering (Prof. Sugiyama).
ETHZ professors serve as examiners of doctoral degree at UTokyo and vice versa, which shows the mutual trust.

January, 2016  Prof. Fukuda (D-INFK/ETHZ)  Examiner at GSIST/UTokyo
July, 2016  Prof. Schneider (D-CHAB/ETHZ)  Examiner at Chemsys/UTokyo
November, 2016  Prof. Sugiyama (Chemsys/UTokyo)  Examiner at D-CHAB/ETHZ

Examination on Jan. 8
Joint Symposium of Frontier Chemistry on November 9-10

- The symposium covered the related fields of chemistry from physical to biological.
- Professors, young researchers, and graduate students of ETH Zürich and UTokyo presented their research results alternatively.

Dr. Frey, Head of Science and Technology Office, Swiss Embassy joined the Symposium Reception

Prof. Suga, Dr. Frey, and Prof. Piel

A post-doctoral fellow talking his hot results
Strategic Partnership Symposium with ETH Zürich on January 19-20

✔ The symposium was on Strategic Partnership in itself as well as various fields.
✔ The professors, company researchers, young researchers, and students of both sides discussed alternatively on Science, Design, Manufacturing, and Information.

Group Photo of the Symposium

Poster Session

Discussion

Ms. Suzuki, Deputy Head of Science and Technology Office, Swiss Embassy, joined the Symposium.
Public Relations Activity

- Our Partnership Activities attract attentions not only of ETH people but also of Swiss Embassy people
- We are preparing our own webpage and revised booklets

Webpages of Science and Technology Office of Swiss Embassy

Webpages of ETH Zürich

Webpages of UTokyo

Booklet in 2016FY
Thank you for your attention.
Strategic Partnership between Princeton and UTokyo

Yasushi ONO
Professor of Graduate School of Frontier Sciences
Memorandum of Strategic Partnership (January 15, 2013)

- UTokyo’s **first** Strategic Partnership memorandum

- Established to **deepen existing collaborations** (Public Policy and International Relations, East Asian Studies, Astrophysics) and to **extend into new areas** based on sustained reciprocity and mutual benefit

- **Joint Governance Committee**
  - manages tasks according to the memorandum
  - members from both Universities and the equal number

- **Joint Fund**
  - Both universities contribute an equal budget
Based on the memorandum, UTokyo and Princeton provide resources to teaching and research collaborations.

- Two types: **Seed grants** (one year) and **large grants** (three years)

  - Graduate School of Engineering : 2 projects
  - Graduate School of Science/Kavli IPMU
  - Institute for Advance Studies on Asia : 2 projects
  - Graduate School of Science : 3 projects
  - Graduate School of Mathematical Sciences
  - Graduate School of Frontier Sciences
  - VLSI Design and Education Center
  - Graduate School of Arts and Sciences
  - Graduate School of Medicine
  - Graduate Schools for Law and Politics
University-wide Activities

Oct 2013  President Eisgruber visited UTokyo
Oct 2014  UTokyo Day: Celebration of Our Partnership @ Princeton
May 2015  Prof. Tom Gally & Tatsuru Masuda’s (Arts & Sciences) project with Princeton was selected as part of UTokyo’s Top Global University Project to establish strategic partnerships
          • The Ogasawara Foundation for the Promotion of Science & Engineering received the “Shokumon Award”
          • Study Abroad Fair and staff exchange @ Princeton
Oct 2015  • VP Vrachnos visited UTokyo
Mar 2016  Staff exchange & Princeton Day: Progress report of the strategic partnership @ UTokyo
Princeton-UTokyo Educational Partnership in Plasma Physics
Y. Ono, Y. Takase, M. Hoshino, T. Shimizu, C. Z. Cheng: University of Tokyo
S. Prager, M. Yamada, H. Ji, J. M. Stone: PPPL, Princeton University

X-ray Image of Sun

Visible light images of two merging tokamak plasmass
Laboratory observational & theoretical researches have advantages and disadvantages. Interdisciplinary research.

- **Solar Observation**
  - Where is the current sheet? Magnetic field?
  - Nice 2-D photos of the Sun!

- **Magnetosphere Observation**
  - Spatial profile?
  - Nice local measurements!

- **Laboratory Experiment**
  - We can test all kinds of physics using real plasma!
  - How high is the plasma temperature? Reynolds number?
  - Are their assumptions OK?
  - We can test all kinds of problems using simulations!
Summer Research for Princeton Students on Princeton-U.Tokyo Educational Partnership on Plasma Physics

FY 2015 activities
1. A Summer School on Plasma Physics was carried out for June 8-17 at PPPL:
   (1) **June 8-12**: Lecture series on plasma physics jointly with U.S. National Undergraduate Summer School.
   (2) **June 15-17**: Lectures on specific fusion projects and plasma astrophysics at PPPL.
      See attached lecture schedule
2. Summer students internship and training for six (6) weeks; **June 22- August 1**.
   *Four Princeton undergraduates are scheduled to visit Univ. Tokyo during this period, and 4 University of Tokyo graduate and undergraduates students are planning to visit PPPL.*

3. **Summary report (2-3 pages) were submitted to myamada@pppl.gov by September 1, 2015.**
   Contacts: M. Yamada (Academic program), myamada@pppl.gov, C. Austin (Program/Travel supervision), caustin@pppl.gov, D. Ortiz (Summer School Program), dortiz@pppl.gov L. Lauria (Travel arrangements), travel@pppl.gov, T. Greenberg (Program/Travel assistance), tgreenbe@pppl.gov

[Images of NSTX(PPPL), MRX(PPPL), UTST(UTokyo), TS-4(UTokyo)]
### Schedule of Lectures for PUTEP FY2016, Engineering Building No.2, Univ. Tokyo

<table>
<thead>
<tr>
<th>Time</th>
<th>Jul. 11 (Mon)</th>
<th>Jul. 12 (Tue)</th>
<th>Jul. 13 (Wed)</th>
<th>Jul. 14 (Thu)</th>
<th>Jul. 15 (Fri)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00-10:30</td>
<td>Welcome Guidance</td>
<td>Yamada Introduction to laboratory astrophysics</td>
<td>Cheng Introduction to fusion plasma theory II</td>
<td>Yamada Interrelationship between space physics theory</td>
<td>Yokoyama Introduction to MHD simulations</td>
</tr>
<tr>
<td>11:00-12:30</td>
<td>Shimizu Recent solar observations</td>
<td>Inomoto Plasma Diagnostic</td>
<td>Ji US reconnection experiment</td>
<td>Hara Introduction to space physics theory</td>
<td>Ono Introduction to J-reconnection exp.</td>
</tr>
<tr>
<td>14:00-15:30</td>
<td>Cheng Introduction to fusion plasma theory I</td>
<td>Takase Introduction to spherical tokamak</td>
<td>Lazarian (-16:00) Cosmic Ray and MHD Turbulence</td>
<td>NAOJ tour</td>
<td>JAXA tour</td>
</tr>
<tr>
<td>16:00-17:30</td>
<td>Ono Introduction to fusion plasma experiment</td>
<td>U.Tokyo Tour</td>
<td>U.Tokyo Tour</td>
<td>NAOJ tour</td>
<td>JAXA tour</td>
</tr>
<tr>
<td></td>
<td>Reception</td>
<td>Party!</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Joint Lecture in University of Tokyo*  
*Excursion to Nikko National Park*
PrincetonU-UTokyo Educational Partnership in Plasma Physics

Upgraded New Stage Global Science Graduate Course

New Collaborative Educational Program

Interdisciplinary Plasma Course
1) Internship/Practice
2) Plasma Lectures
3) Mini-Workshop

Research Exchange

Workshop

Undergraduate Students
Plasma Courses
Graduate Students
Staff

Projects: Experiments, Observations

Japan

U. Tokyo Plasma Core

Princeton U. Plasma Core

Projects: Experiments, Theory

Dept. Ad. Energy
Dept. Complex Sci.
ISAS
NAOJ

USA

Princeton Plasma Physics Laboratory
Dept. Physics
Dept. Astrophysics

Undergraduate Students

Graduate Students

Staff

Princeton Plasma Physics Laboratory
Dept. Physics
Dept. Astrophysics

MRX
NSTX

TS/UTST
TST-2
Hinode

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Mr. Kadowaki (Advisor: M Yamada) experimentally tested asymmetric reconnected magnetic field in MRX pull-mode reconnection.

Asymmetric in-plane magnetic field

Reconnected field $= B_r [T]$

0.8 mT/cm
2.0 mT/cm

Magnetic Reconnection Experiment (MRX)
Kota Hirabayashi: Dept. Earth & Planetary Science
Adviser: J. M. Stone (Dept. Astronomy)

Report on Collaborative Research at Princeton University

During this dispatch, I have collaborated with Professor James M. Stone, who is an authority on theoretical and numerical studies about accretion disks, and worked on local three-dimensional magnetohydrodynamic (MHD) simulations that take into account the effect of vertical stratification. In particular, I tried the first numerical simulation of a stratified accretion disk with an anisotropic pressure, which is expected to be important in so hot and dilute environment such as black hole accretion flows that momentum exchange through particle collisions does not work efficiently. The code development and the analysis of preliminary results are successfully completed during the stay.

In addition to weekly discussion with Prof. Stone, I have freely attended a lot of seminars including ones held at Institute for Advanced Study. All the information on daily seminars and visiting researchers are systematically shared on a webpage and mailing lists, which makes everyones easy to join the discussion. It is also a nice culture that many of the group members gather at a hall on every morning to discuss new papers with coffee and bagels. I felt the entire group successfully worked as a highly unified research environment, compared with Japanese astrophysical groups.

I have also learned the usage of Athena code developed by the group of Prof. Stone in order to crosscheck the results. It is surprising for me that all the MHD simulations in the group use Athena, or its successor Athena++, which allows all the users, including graduate students, to join the code development. A similar project in the Japanese astrophysical community, CANS, seems of small-scale in terms of both the number of users and developers. Throughout this stay, I strongly felt the necessity that we Japanese astrophysicists should be more social and more organized.

Adviser: M. Yamada (PPPL)

Asymmetric Magnetic Reconnection in outflow using MRX device

We measured the energy flows in both outflows by using many in situ probes. A 2D magnetic probe array which consists of 250 small coils is main diagnostics. Langmuir probes which measures the electron density and temperature are inserted in each four regions separated by the separatrices. Mach probe is used to measure the outflow velocity of ions. Spectroscopy probe which measures the ion temperature is also used. Potential probe array in the downstream region is used to measure in-plane electric field generated by two-fluid effect. The data obtained from every shot are automatically processed into the form which is very easy to analyze.

The largest components in the measured energy flows are different as shown in Fig. 1. In the experiment, the left side is stronger initial plasma side which has a smaller reconnection angle, smaller reconnected magnetic field and 10–20% higher electron temperature. This might be unfair comparison because the calculated thickness of reconnected fluxes at the diagnostic probes in each outflows were not the same. Therefore, these values are preliminary.

References

Fig. 1. Measured rate of energy flux of outflow in the (right) +Z and (left) -Z direction.
Stratified Simulations of Collisionless Accretion Disks

Plentiful dynamics are driven by angular momentum transport via MHD turbulence

\( \gamma \)-rays \(~\) radio
collimated jet
disk wind
Strategic Partnership between SNU and UTokyo

Shigeto Sonoda
Deputy Director General, Division of International Affairs
Professor of Sociology and Asian Studies, Graduate School
of Interdisciplinary Information Studies & Institute for
Advanced Studies on Asia
Strategic Partnership Projects with SNU

- Graduate Schools for Law and Politics
- Graduate School of Engineering
- Graduate School of Public Policy
- Research Center for Advanced Science and Technology
- Graduate School of Interdisciplinary Information Studies
- Graduate School of Mathematical Sciences
- Institute of Industrial Science
- Graduate School of Agricultural and Life Sciences
- Graduate School of Medicine
- Policy Alternatives Research Institute

10 Schools/Institutes/Centers

- Workshops
- Symposia
- Faculty exchanges
- Double degree
- Joint research
- Student exchanges
- Summer programs
- Joint courses, etc.
**University-wide Activities with SNU (1)**

- **2014/4/14**  Opening of the “Seoul National University UTokyo Office”
- **2014/6/3**  Opening of the “The University of Tokyo SNU Office”
- **2015/2/17**  Visit from the President of SNU
- **2015/8/3 - 8/12**  SNU-UTokyo Joint Summer Program 2015 in Tokyo
  - Participants: 15 SNU students & 11 UTokyo students
  - Activities: 5 academic lectures, 5 fieldtrips to public/private sectors, Final group presentation, etc.
- **2015/11/6**  SNU-UTokyo Strategic Partnership Meeting
  - VP of Int’l Affairs and counterparts of SNU as well as project representatives from UTokyo side attended
University-wide Activities with SNU (2)

2016/7/22 Signing MoU on Strategic Partnership by Presidents @ Kaitokukan

  * Participants: 29 SNU students & 14 UTokyo students
  * Activities: 5 (6) academic lectures, 5 fieldtrips to public/private sectors, Final group presentation, etc at each round

2017/2/24 Staff Meeting and Explanation Session for Study in Utokyo (東京大学留学説明会) @ CJ International Center, SNU
Future Plans

<Departmental-level>
Continue and broaden activities

<University-level>
1. SNU Day in Tokyo/UTokyo Day in Seoul
2. Joint (Summer) Program

Stronger partnership
Top Global University Project

Strategic Partnership with Sweden
- Country-based Collaboration through Cross-departmental Projects -
5 graduate schools, 1 institute and 1 center work together in collaboration with the leading universities in Sweden to develop a strategic partnership through research collaborations, education for young researchers, and student exchanges.
Sweden
Partners Complementing Each Other in Stockholm

Stockholm University [http://www.su.se/english/about/events/orientation-week/orientation-day/orientation-day-presentations](http://www.su.se/english/about/events/orientation-week/orientation-day/orientation-day-presentations)
## Collaboration in Progress

### UTokyo and Sweden

<table>
<thead>
<tr>
<th>Year</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>• Agreement on Academic Exchange (UTokyo-KTH)</td>
</tr>
<tr>
<td>2002</td>
<td>• Agreement of Academic Exchange (UTokyo-SU)</td>
</tr>
<tr>
<td>2012</td>
<td>• Agreement for Student Exchange (Graduate School of Engineering-KTH)</td>
</tr>
</tbody>
</table>
| 2014 | • Memorandum on Student Exchange (Graduate School of Education-SU Department of Education)  
• Exchange Program for Global Mechanical Engineers (Engineering)  
• Seminars and intensive lecture series at UTokyo (Engineering) |
| 2015 | • SGU Sweden kick-off meeting at UTokyo  
• KTH President visited UTokyo  
• Japan-Sweden University Presidents' Summit in Tokyo  
• Joint International Seminar at SU (Education)  
• Exchange Program for Global Mechanical Engineers (Engineering)  
• Seminars and intensive lecture series at UTokyo (Engineering)  
• International Symposium at UTokyo (Frontier Sciences)  
• Invited Lectures and seminars at KTH (Agricultural and Life Sciences)  
• Workshop at SU (Agricultural and Life Sciences) |
| 2016 | • Exchange Program for Global Mechanical Engineers (Engineering)  
• Seminars and intensive lecture series at UTokyo (Engineering)  
• Faculty workshop on education (Engineering)  
• Core multi-school research collaboration  
• Joint International Seminar at SU (Education)  
• Co-supervising PhD student (Education)  
• Exchange Program for Global Mechanical Engineers (Engineering)  
• Seminar at KTH (Agricultural and Life Sciences)  
• International Symposium at Sweden (Frontier Sciences)  
• Global Field Exercise Sweden (Frontier Sciences)  
• Official agreement on strategic partnership (KI-KTH-SU-UTokyo)  
• Working Group members selected for International Workshop (Sep.2017) |
International Workshop

- Theme: Healthy Aging
- Dates: September 21-22, 2017
- Venue: Stockholm (tbc)
- Organizers: SU, KTH, KI, UTokyo (supported by JSPS)
- Purpose: Share existing researches and search for possible research collaboration
- Working Group: Members from four institutions
- Inviting some scholars/experts from other institutions both in Sweden and Japan
- Pre-celebration of the 150th Anniversary of the diplomatic relationship between Sweden and Japan
Graduate School of Engineering

Key partner: KTH Royal Institute of Technology

Exchange Program for Global Mechanical Engineers (2014-2016)

• Joint student project on solar boat
• Education based program: 1 month
  Research based program: 3-10 months

Seminars and intensive lecture series at UTokyo (2014-2016)

• Intensive lecture series “Introduction to lightweight materials” by Professor Stefan Hallström, KTH (2016)
• Intensive lecture series “Fluid mechanics in small systems” by Professor Gustav Amberg, KTH (2015)
• Invited speakers from KTH for 4 seminars

Faculty workshop on education (2014, 2016)

• 3-days workshop on reviewing and planning of exchange programs and international education, and faculty development (with UT-Education, Frontier Sciences)
• Workshop on interactive lectures by KTH faculties (2014).

Core multi-school research collaboration (2016)

• STINT/JSPS research proposal on cellulose-nanofiber technology (with UT-Agriculture)

Sabbatical leave in KTH (2014)
UT – KTH Workshop on Education and Academic Mobility (3 days)

6 faculties 5 staffs 2 students
10 faculties 5 staffs 4 students

- Inputs:
  - Presentations of the past/on-going activities.
  - Questionnaire for all the past exchange students (50% answered).

- Discussions:
  - Step 1: Confirming/reconsidering the objectives of internationalization.
  - STEP 2: Reviewing the past activities
  - STEP 3: Generating actions

- Outputs:
  - Action plans
  - "Guide" for exchange students
  - Report

Outputs:
- Action plans
- "Guide" for exchange students
- Report
Graduate School of Education
Key partner: Stockholm University

• “Education in the Era of Globalization”
• 22 students (Education), 2 researchers (2015)
  29 students (Education, Agricultural and Life Sciences), 2 researchers (2016)
  22 students (Education, Engineering, Law), 2 researchers (2017) from UTokyo
• Joint seminar, Study tour to local schools, student discussions

International Symposium at UTokyo (Nov. 2015)
• “4th GPSS-GLI International Symposium”
• Invited a presenter from SU

Open Lecture at UTokyo (Nov. 2015)
• “Sustainable Education in Sweden”
• Invited a lecturer from SU

Joint workshop for faculty members (Sep. 2016)
Student exchanges and Co-supervising (2016, 2017)
Graduate School of Agricultural and Life Sciences

Key partner: KTH Royal Institute of Technology

International Seminar in Japan (Nov. 2014)
- “Structure/function studies of biomass-degrading enzymes at SLU, Uppsala, Sweden”
- Invited a speaker from Swedish University of Agricultural and Sciences

2 seminars and 2 invited lectures at KTH (-2015)

Prof. Akira Isogai won 2015 Marcus Wallenberg Prize in Sweden
- Energy-saving method

Workshop at Stockholm University (Sep. 2015)
- “Sweden-Japan Workshop of Radioecology for Students”
  Graduate students from the Graduate School of Agricultural and Life Sciences (6 days)

Seminar at KTH (Nov. 2016)
- Nanocellulose studies at the University of Tokyo
Graduate School of Frontier Sciences

Key partners:
Lund University, Center for Sustainability Studies
Stockholm University, Stockholm Resilience Center

Joint workshops (2013)
• With Lund University and Stockholm University
International symposium (Nov. 2015)
• "GPSS-GLI Developing A New Evaluation Scheme for Sustainability Science Programs in Higher Education"
• Invited a keynote speakers and presenters from SGU-Sweden and the partners in Sweden

Global Field Exercise Sweden (Sep. 2016)
• Send two students to Lund University for 2 weeks
International symposium (Dec. 2016)
• "Framing in Sustainability Research and Education"
• Invited a keynote speakers and presenters from SGU-Sweden and the partners in Sweden

GPSS-GLI International Symposium
http://www.sustainability.k.u-tokyo.ac.jp/events/3623.html
Opportunities for Future Collaboration

UTokyo and Sweden

- Joint symposiums/workshops
- Joint faculty development
- Further collaboration in educational programs
- Collaborative research projects
- Co-supervising PhD students
- Joint lectures
Tsinghua University Team

Ichiro Sakuma
Vice Dean, Graduate School of Engineering

Graduate School of Engineering
Graduate School of Science
Graduate School of Frontier Sciences
Graduate School of Interdisciplinary Information Studies
Institute for Industrial Science
Institute for Solid State Physics
Graduate School of Arts and Sciences
Strategic partnership with Tsinghua

- Historical important partner: Agreement from 1999
- Personal to lab/institute-level activities in various fields

Major activity:
Joint symposium and satellite events

Other activities
- Workshops
- Joint research
- Student Exchange / Education Program

Strategic Partnership
The first stage of strategic partnership

1\textsuperscript{st} Joint symposium in March 2016

Discussion in VIP meeting
- Promote strategic partnership relation
- Discuss action plan
- Regular meetings
- Promote inter/multi-disciplinary activities

2\textsuperscript{nd} joint symposium at Tsinghua
- Participation of humanities

Materials physics, science and engineering
Eng., Sci. & Frontier Sci., IIS, ISSP, RCAST

Precision engineering
Eng., IIS, RCAST

Infrastructure
- Hydro-Science (Eng. & Frontier Sci., IIS)
- Disaster Prevention (IIS)
- Architecture (IIS & Eng.)

Bioengineering
Eng.
March toward the second stage (1)

▶ Vice president meeting in July @ UTokyo
  ➢ Discuss the bilateral strategic partnership agreement based on the Asian Universities Alliance (AUA)

▶ Asian Deans’ Forum in October @ UTokyo
  ➢ Strengthen relationships in the engineering schools of six leading Asian universities

▶ VIP meeting in November @ Tsinghua
  ➢ Exchange views of 2nd joint symposium

▶ Student Workshop in January @ UTokyo
  ➢ Between Grad. Sch. Eng., UTokyo and Shenzhen Grad. Sch., Tsinghua
  ➢ Various fields in Engineering
March toward the second stage (2)

New Participating School & Institute

- Science
- Frontier Sciences
- Engineering
- Interdisciplinary Information Studies
- Solid State Physics

New Collaboration

- Barrier free society
- University Corporate Relations
- Arts and Sciences
- Beijing Alumni Association

Interdisciplinary field
- First in architecture field for disabled person
- Expand to the field of gerontology

Innovation
- Enabling students to imagine, innovate and implement
- Business model innovations and support social activism

Support from outside
- Sustainable support for bilateral collaboration
- Exit strategy

The participator in 2nd stage
The second stage of strategic partnership (1)

Natural Science
- Material & Physics
- Precision
- Bioengineering
- Hydro-science
- Architecture
- Disaster resilience

Innovation & Entrepreneurship
- Technology + business
- Innovation, Entrepreneurship
- Leadership Track

Humanities
- Integrated human sciences
- Barrier free society

Student Exchange
- Summer program
- Shenzhen international campus

- Conclusion of strategic partnership agreement
- Annual bilateral symposium for research and education collaboration
- Support from alumni and enterprise
- Asian University Alliance and Asian Deans’ Forum
- Exploring the possibility of joint research center with Shenzhen Grad. Sch.
The second stage of strategic partnership (2)

Student Exchange / Education Program

**Student Workshop**
- Joint symposium
- Research communication

**Short-term exchange**
- Joint research workshop
- Laboratory stay

**Medium-term exchange**
- Summer Program
- SAKURA Exchange Program in Science

**Long-term exchange**
- Student exchange by MOU
- Special PhD program for Tsinghua and SNU
- China Scholarship Council
Strategic Partnership Project
UC Berkeley / UTokyo

The Third UTokyo Strategic Partnership Symposium
March 17, 2017

Toshitake Kohno
Graduate School of Mathematical Sciences
Kavli IPMU
Overview

Mathematics and Physics

Promoting world-class, cutting-edge research and new interdisciplinary education system beyond traditional boundary of fields in collaboration with UC Berkeley.

Social Science and Humanities

Institute of Social Science is creating networks with UC Berkeley in political science and other fields of social science. Graduate School of Arts and Sciences is collaborating with Center for Japanese Studies, Berkeley in linguistics and other areas in humanities.

Engineering

School of Engineering

Collaborations in the field of energy, radiological resilience and architecture.

Interdisciplinary activities
– Collaboration with Center for Japanese Studies -

TOMOHIRO TACHI
Assistant Professor, The University of Tokyo

COMPUTATIONALLY DESIGNING ORIGAMI STRUCTURES

Wednesday
November 16, 2016
5:00 pm

250 Sutardja Dai Hall
University of California, Berkeley

- The colloquium was co-sponsored by Department of Mathematics, UCBerkeley and was organized by Professor Dana Buntrock, Chair of Center for Japanese Studies. He was joined for a discussion and a question and answer session by UC Berkeley Professors Nicolai Reshetikhin and Vaughan Jones and UTokyo Associate Professor Yusuke Obuchi. Tachi discussed his research on the art of making origami, computational approaches to exploring the Japanese craft, and potential applications for origami as a folding system for the construction of structures and architecture.

Tachi's origami talk at Berkeley was wildly successful. This talk was entirely thanks to the University of Tokyo; all of us were very impressed. There were roughly 80 people in attendance at a busy time of year. They ranged from what I can only take to be extremely bright 10-year-olds who were completely engaged with the mathematical discourse to the head of a Federal (national) research center located on our campus, the MSRI. There were a number of high-level mathematicians in the room, from many countries around the world. Everyone was simply delighted.

- Dana Buntrock, Chair of Center for Japanese Studies, UC Berkeley
Autumn School and Winter Workshop – Mathematics and Physics –

Berkeley-Tokyo Autumn School
"Quantum Field Theory and Subfactors"
1015 Evans Hall, UC Berkeley
November 14 -- 23, 2016

Organizers:
V. Jones, N. Reshetikhin (UC Berkeley), Y. Kawahigashi (UTokyo)

Lecturers:
Marcel Bischoff, Robert Coquereaux, F. Alberto Grunbaum
Vaughan F. R. Jones, Yoshiko Ogata, Nicolai Reshetikhin
Yoshisasa Saito, Jun'ichi Shiraishi, Yuji Tachikawa
James Tener, Feng Xu

Participants include 10 students from UTokyo.

Tokyo-Berkeley Mathematics Workshop
"Partial Differential Equations and Mathematical Physics"
UTokyo, January 9 -- 13, 2017

Organizers:
S. Nakamura (UTokyo), M. Zworski (UC Berkeley)

Minicourses by:
S. Dyatlov, P. Hintz, K. Ito, T. Yoneda, M. Zworski

Lecturers:
K. Abe, A. Drouot, F. Macia, H. Mizutani,
Y. Miyamoto, M. Tsujii, S. Yamada

Participants include 2 students from UC Berkeley.

Additional funding:
Japan Student Services Organization (JASSO)
Leading Graduate Course for Frontiers of Mathematical Sciences and Physics (FMSP),
Program for Leading Graduate Schools, MEXT, Japan

Vaughan F.R. Jones
Lecture series in Mathematics

Lecture 1: Special subspaces in symplectic vector spaces
April 11, 2016
Lecture 2: Geometric and algebraic Poisson modules
April 14, 2016
Lecture Hall, Kavli IPMU

Introduction to Logarithmic Geometry
November 14 -- 25, 2016
Graduate School of Mathematical Sciences

The lecture series by A. Ogus was held as an official intensive course of UTokyo and students got credits.
IPMU Week @ Berkeley

January 11 -- 13, 2017
Venue: 402 Old LeConte Hall, UC Berkeley

Speakers / Titles:
Raymond Co (Berkeley) / Crucial Effects of Saxion Cosmology on Dark Matter
Peter Cox (IPMU) / The Unnatural Composite Higgs at the LHC
Dorota Grabowska (Berkeley) / Using Extra Dimensions to Understand Chiral Gauge Theories
Simon Knapen (Berkeley) / Light Dark Matter in Superfluid Helium
Ian Moult (Berkeley) / Jet Substructure at the LHC
Kyohei Mukaida (IPMU) / Primordial Black Holes in Inflationary Cosmology
Satoshi Shirai (IPMU) / WIMP at Collider
Michihisa Takeuchi (IPMU) / Tagging a Monotop Signature in Natural SUSY
Matthias Weissenbacher (IPMU) / String Length Induced Operators in EFT

Discussion: Phenomenology of the Heavy QCD Axion in Collider Physics and Cosmology
Institute of Social Science (ISS) invited faculty members from UC Berkeley, and hosted lectures/seminars in collaboration with Graduate Schools for Law and Politics and Graduate School of Arts and Sciences.

Special Lectures:
“Politics in Eastern Europe” (15 lectures for graduate/undergraduate students)

Seminars:
“America the Blue? Racial Divides and Partisan Coalitions in the Age of Obama”
Taeku Lee, July 8, 2016
“Slouching Toward Authoritarianism? Hungary under Fidesz-Hungarian Civic Alliance Since 2010”
Jason Wittenberg, June 28, 2016

Panel Discussion “Identity and Politics: Research Frontiers”
July 12, 2016
Panelists:
Taeku Lee (Department of Political Science, UC Berkeley)
Kenneth McElwain (Institute of Social Science, University of Tokyo)
Rieko Kage (Graduate School of Arts and Sciences, University of Tokyo)

Graduate School of Arts and Sciences organized the following lecture.
Lecture "WA and GA"
Yoko Hasegawa (UC Berkeley)
January 6, 2017, Collaboration Room 1, Building 18, Komaba Campus
Workshop in Fukushima:
In the workshop “2nd International symposium for resilient communities, NextGen workshop” held in Kooriyama, Fukushima on 14th and 15th April 2016, students of both UCB and UTokyo (Mr.Yusuke Kawauchi, undergraduate student, faculty of engineering) made presentations of their research achievements about nuclear engineering and they have intensified the international exchange.
International Exchange of Faculty:

- Prof. Kai Vetter in UCB NE visited UTokyo twice and Prof. Hiroyuki Takahashi in UTokyo visited UCB once a year respectively, and both universities have continuously cultivated research dialogue about advanced topics of nuclear engineering at a faculty level. Prof. Takahashi had meeting with Dr. Andy Haefner, UCB NE/LBNL (Lawrence Berkeley National Laboratory) in 16th January 2016 and will visit UCB again from 20th to 21st March for the meeting about international collaborative research and education and gamma-ray imaging system.
- Associate Prof. Komiyama in UTokyo visited both UCB and LBNL from 28th February to 1st March 2017, and discussed joint research possibility about renewable energy.

International Exchange of Students:

- A PhD student of UTokyo (Ms. Yuri Yoshihara, Department of Nuclear Engineering and Management) experienced long-term stay in UCB NE/LBNL Applied Physics Laboratory and was engaged in gamma-ray imaging system by using Drone from 24th August 2016 to 10th February 2017. Moreover, a PhD student (Mr. Ryan Pavlovsky) of UCB visited UTokyo in 13th February 2016 and both universities have deepened exchanges at a student level as well.
Higher Education Program
Graduate School of Education

• Comparative Study in University Management
  – Summer Intensive Program for graduate students
  – July 25 to 29, 2016 @UC Berkeley

Program Overview

• Hosted by Global Engagement Office & Center for Studies in Higher Education, UC Berkeley
• 13 presenters from all around Berkeley Campus
• 12 graduate students and 3 UTokyo staffs
• Interactive Session with JSPS San Francisco Office
• Campus visit to Stanford University and City College of San Francisco
• Selected as one of 2017 programs to support studying abroad by JASSO as “Professional Program for Higher Education Management in Global Age”
• Planning our next program at Berkeley in 2018
• “The Student Experience in the World’s Leading Universities: Results from SERU-International”
• John A. Douglass (Senior Research Fellow, Center for Studies in Higher Education, UC Berkeley)
• May 27, 2016 @ Graduate School of Education, UTokyo
Plan for the Next Academic Year

We aim to promote interdisciplinary collaboration in research and education. Center for Japanese Studies, UC Berkeley will play a role of hub.

In mathematics and physics, we are planning joint Summer School with MSRI, Berkeley. The first joint school will be held in May, 2017 in Japan. The lecturers will include:
- David Eisenbud (UC Berkeley), Shunsuke Takagi (Utokyo)

ISS is planning to invite other professors in the next academic year and also to send our young researchers to Berkeley.

Graduate School of Arts and Sciences seeks for further collaboration in the fields of linguistics, psychology and cognitive brain science.

Both department of nuclear engineering and management and department of architecture at UTokyo continuously aim to deepen cooperation with UCB in a wide range of fields such as international cooperative education, research and joint symposium.
The Third
UTokyo Strategic Partnership Symposium
第3回 戦略的パートナーシップシンポジウム
Friday, March 17th, 2017

The University of Tokyo

University of Cambridge

Mikiko Kikuchi
Graduate School of Pharmaceutical Sciences
The Second Cambridge-UTokyo Joint Symposium
January 31, 2017 at Ito International Research Center

Series of lectures by professors of both institutes

• Strategic Partnership Universities: Visions of the University of Tokyo by Prof. N. Sekimura
• Introducing CRASSH and Collaborative Research within Europe by Prof. R. Gagne
• Deans Forum by Prof. M. Mitsuishi
• Lessons learned from a decade of Intercontinental Collaborative Research by Prof. P. St. George-Hyslop
• Student Education & Mobility between Japan and UK by Prof. Y. Kasai
Open discussion took place on the progress and future direction of the strategic partnership between the two universities. Benefits as well as issues in carrying out international collaborative research were pointed out and other topics of interest for both universities were discussed.

- Funding
- Short term exchange of graduate students through summer internships
In the workshop between CIMR and Graduate School of Pharmaceutical Sciences, we had 10 presentations by PIs and 32 poster sessions by graduate students from both institutes, which were followed by animated and interesting discussions.
Cambridge-UTokyo Strategic Partnership Symposium on Chemistry and Chemical Biology was held between Cambridge’s Department of Chemistry and UTokyo on February 8 and 9 at Graduate School of Pharmaceutical Sciences.
The First day, Graduate School of Pharmaceutical Sciences hosted symposium consists of presentations by students and young researchers.

The second day was dedicated to symposium with mainly professors as speakers.
Strategic Plans for Fiscal Year 2017

• Sep 18-19, 2017
  3rd CIMR/Dep. of Chemistry, Cambridge –
  Graduate School of Pharmaceutical Sciences, UTokyo Workshop
  at St Catharine’s college, Cambridge

• Sabbatical Researchers exchange with
  CIMR/Dep. of Chemistry/Cambridge Neuroscience

• Summer Student Internship Program

  ✓ Scientific interactions
  ✓ Mutual international collaborations
  ✓ Researchers/Students exchange program
Strategic Plans for Fiscal Year 2017

We have secured an external funding for Top Global University Project activities from Tokyo Foundation for Pharmaceutical Sciences

- Sep 18-19, 2017
  3rd CIMR/Dep. of Chemistry, Cambridge – Graduate School of Pharmaceutical Sciences, UTokyo Workshop at St. Catharine’s college, Cambridge

- Sabbatical Researchers exchange with CIMR/Dep. of Chemistry/Cambridge Neuroscience

- Summer Student Internship Program
  ✓ Scientific interactions
  ✓ Mutual international collaborations
  ✓ Researchers/Students exchange program
More external funding for International collaborations

Joint event with
TOP GLOBAL UNIVERSITY INITIATIVE /GPLLI/Core-to-Core Program

- Aug-Sep, 2017
  Student seminar series at Top universities in UK
- Student Internship Program
The Deans' Forum was started in 2011 as a strategic response from leading engineering schools to the issues that society is facing in the 21st century.
Deans’ Forum on Engineering

The Fourth Deans’ Forum
Sep. 19-20, 2016, Cambridge

CAM joined the forum in 2015
- Enhancing the existing bilateral CAM-UT educational cooperation through the DF multilateral approach.
- Has effectively strengthened the activities of the forum.

University-Industry Collaboration (UIC) was the core topic of this forum
- UTokyo proposed the 5 UIC patterns which reflect typical trends. The proposition offered a platform for further discussions.

Research Workshops

Organizational Education Collaboration: Intensive Summer Course
UIC patterns

Types

I
Needs-Seeds Matching

II
Solution by U's Seeds

III
Collaborative Innovation

IV
Open Innovation

V
Closed Innovation

Co.

Section (Need)

Section

Researcher

Researcher

Co's lab on campus

Univ.

Professor (Seed)

Solution C

Consortium

Professor

Professor

Consortium

Professor

Section

Section

Section

Section

Section
CAM-UT Strategic Plans for Fiscal Year 2017

1. Organizational Exchange in Education
   a. Faculty Exchange and Collaborative Teaching for Intensive Lectures on interdisciplinary research themes will be discussed.
   b. Discussions will be continued to make adjustments to reach mutual understanding and to find a solution for differences in the educational system between CAM and UTokyo.
   c. Credit approval system for graduate level lectures will be discussed.
   d. Cooperative framework of the DF Internship Program will be expanded to an international research internship system between university laboratories for PhD students and young faculties.

2. Organizational Exchange in Research
   a. So as to identify common issues, organizational research tasks will be discussed in the fields of Biomedical, Engineering, Smart city, etc.
   b. Existing common research tasks will be deployed.

3. Common Items
   Kick-off event will be organized at CAM.
Visiting Fellowship and Visiting Students in Fiscal Year 2016

< Visiting Fellowship >

<table>
<thead>
<tr>
<th>Period of Stay</th>
<th>Title of Dispatched VF</th>
<th>Affiliation (Research Field)</th>
</tr>
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<tbody>
<tr>
<td>Jan-Mar 2017</td>
<td>Professor Izuru Makihara</td>
<td>RCAST (Political Administrative System)</td>
</tr>
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</table>

< Visiting Students in Summer >

<table>
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<tr>
<th>Affiliation</th>
<th>Sex</th>
<th>Course (Summer School/Exchange)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineering AIS D2</td>
<td>Male</td>
<td>Academic Exchange</td>
</tr>
<tr>
<td>Engineering AIS D2</td>
<td>Male</td>
<td>Academic Exchange</td>
</tr>
</tbody>
</table>

* Summer School Course includes attending the Summer School in University of Cambridge.
Other relationships as mutual strategic partners

February 2016 ~ March 2019

- Prof. Cope* became a RCAST Fellow

November 2016

- Seminar by Prof Cope for Faculty Members of RCAST
- RCAST arranged a meeting between Prof. Sekimura ** and Prof. Cope

* Prof. David Cope: Foundation Fellow, Asian Regional Officer and Professor at Clare Hall
** Prof. Naoto Sekimura: Deputy Director General of the Division of International Affairs, The University of Tokyo
Plans for Fiscal Year 2017

• Continue exchanges with Clare Hall through the Visiting Fellowship and Visiting Student programme

• Based on the relationship between Clare Hall and RCAST, development of new relationships between UTokyo and laboratories of University of Cambridge for both research and education is expected.
The University of Tokyo has a long history of academic exchange in mathematics with University of Cambridge. Dairoku Kikuchi, the first professor in mathematics appointed at the University of Tokyo in 1877, had studied at University of Cambridge. Sir Michael Francis Atiyah (Mater of Trinity College, Cambridge) and Kunihiko Kodaira organized the International Conference “Manifolds Tokyo 1973”.
A new generation in mathematics has been creating research networks.

Cambridge--Tokyo Algebraic Geometry workshop 2017
(March. 16-17, 2017)

Speakers:

- Gabriele Di Cerbo (Columbia University)
- Ruadhai Dervan (University of Cambridge)
- Sho Ejiri (University of Tokyo)
- Akihiro Kanemitsu (University of Tokyo)
- Yusuke Nakamura (University of Tokyo)
- Julius Ross (University of Cambridge)
- Hiromu Tanaka (Imperial College London)

There are graduate students among the speakers.

Organizers:
Caucher Birkar, Yoshinori Gongyo, Roberto Svaldi, Shunsuke Takagi
If you have any requests or need any help, please contact rs872 (at) cam.ac.uk

Location:
Seminar Room 1 at Issac Newton Institute for Mathematical Sciences, Cambridge
We co-organize programs at Isaac Newton Institute for Mathematical Sciences.

The following program is held for the period from January to June 2017.

Operator algebras: subfactors and their applications

Subfactors, K-theory and conformal field theory

**Workshop**
12th June 2017 to 16th June 2017

**Organisers:** David Evans (Cardiff University)
Masaki Izumi (Kyoto University)
Vaughan Jones
Yasu Kawahigashi (University of Tokyo)
Roberto Longo (Università degli Studi di Roma Tor Vergata)

**Workshop Theme**

This workshop will focus on merging ideas between subfactors, equivariant K-theory and K-homology, indeed bivariant KK-theory, non commutative geometry, and vertex operator algebras together with their applications in conformal quantum field theory. Spectral triples and Dirac operators are present in the conformal net picture of conformal field theory, through K-theory and K-homology pictures of the Verlinde ring and the KK-picture of modular invariance.

**Deadline for applications:** 12th March 2017
Future Prospects

• In addition to UTokyo’s 3 graduate schools and one research institute, Professors from Graduate School of Humanities and Sociology participated in Cambridge-UTokyo Joint Symposium as well as a professor from CRASSH.

• The four graduate schools and two research institutes will respectively advance the depth of cooperation through relevant research projects.
Future Prospects

Based on the relationship between University of Tokyo’s graduate schools and research institutes with relevant counterparts of Cambridge, it is expected that mutual exchange of professors, post-doctoral students and graduate students will be enhanced.

In conclusion, we are all the more looking forward to furthering this special relationship with University of Cambridge for both research and education.