



The Third UTokyo Strategic Partnership Symposium Report

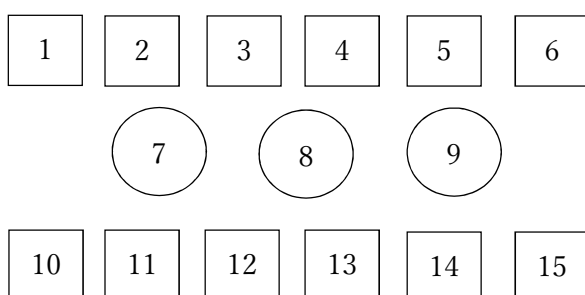
Friday, March 17th, 2017
Auditorium, Faculty of
Science Bldg. 2, UTokyo



国際本部
Division for International Affairs

Front Cover

List of Speaker :



- 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
- 10, Princeton University / Dr. Masaaki Yamada, Princeton Plasma Physics Laboratory, Princeton University
- 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)

9:00-9:05	Opening Remarks
	- <i>Masashi Haneda</i> Executive Vice President, Director General of the Division of International Affairs
9:05-9:20	Introduction
	- <i>Shigeto Sonoda</i> Deputy Director General, Division of International Affairs
9:20-10:10	Presentation 1 (15 min/presentation, 5 min Q&A after all presentations)
	<p>9:20- Peking University</p> <ul style="list-style-type: none"> - <i>Akio Takahara</i> Professor, Graduate School of Public Policy - <i>Shigeto Sonoda</i> Deputy Director General, Division of International Affairs - <i>Yuiko Minami</i> Graduate student, Graduate School of Public Policy <p>9:35- Massachusetts Institute of Technology</p> <ul style="list-style-type: none"> - <i>Kazuo Hiekata</i> Associate Professor, Graduate School of Frontier Sciences - <i>Kota Okada</i> Graduate student, Graduate School of Frontier Sciences <p>9:50- The Australian National University</p> <ul style="list-style-type: none"> - <i>Yujin Yaguchi</i> Professor, Graduate School of Arts and Sciences - <i>Ryoji Sato</i> Project Assistant Professor, Graduate School of Arts and Sciences - <i>Akuru Urayama</i> Undergraduate student, Natural Sciences , Junior Division, College of Arts and Sciences - <i>Reishi Mitani</i> Undergraduate student, Natural Sciences , Junior Division, College of Arts and Sciences
	10:05- Q&A
10:10-10:25	Break
10:25-12:00	Presentation 2 (10 min/presentation, 5 min Q&A after all presentations)
	<p>10:25- Swiss Federal Institute of Technology in Zurich</p> <ul style="list-style-type: none"> - <i>Hirokazu Sugiyama</i> Associate Professor, School of Engineering

10:35- Princeton University

- *Masaaki Yamada Distinguished Research Fellow, Princeton Plasma Physics Laboratory, Princeton University*

- *Yasushi Ono Professor, Graduate School of Frontier Sciences*

10:45- Seoul National University

- *Shigeto Sonoda Deputy Director General, Division of International Affairs*

10:55- Group of Sweden

(KTH Royal Institute of Technology, Stockholm University, Karolinska Institute)

- *Junichiro Shiomi Associate Professor, School of Engineering*

11:05- Tsinghua University

- *Ichiro Sakuma Professor, School of Engineering*

11:15- University of California, Berkeley

- *Toshitake Kohno Dean, Graduate School of Mathematical Sciences*

11:25- University of Cambridge

- *Mikiko Kikuchi Lecturer, Graduate School of Pharmaceutical Sciences*

11:35- Q&A

11:40

Closing Remarks

Yukitsugu Ono General Manager, International Affairs Department

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

Degree programs in
English

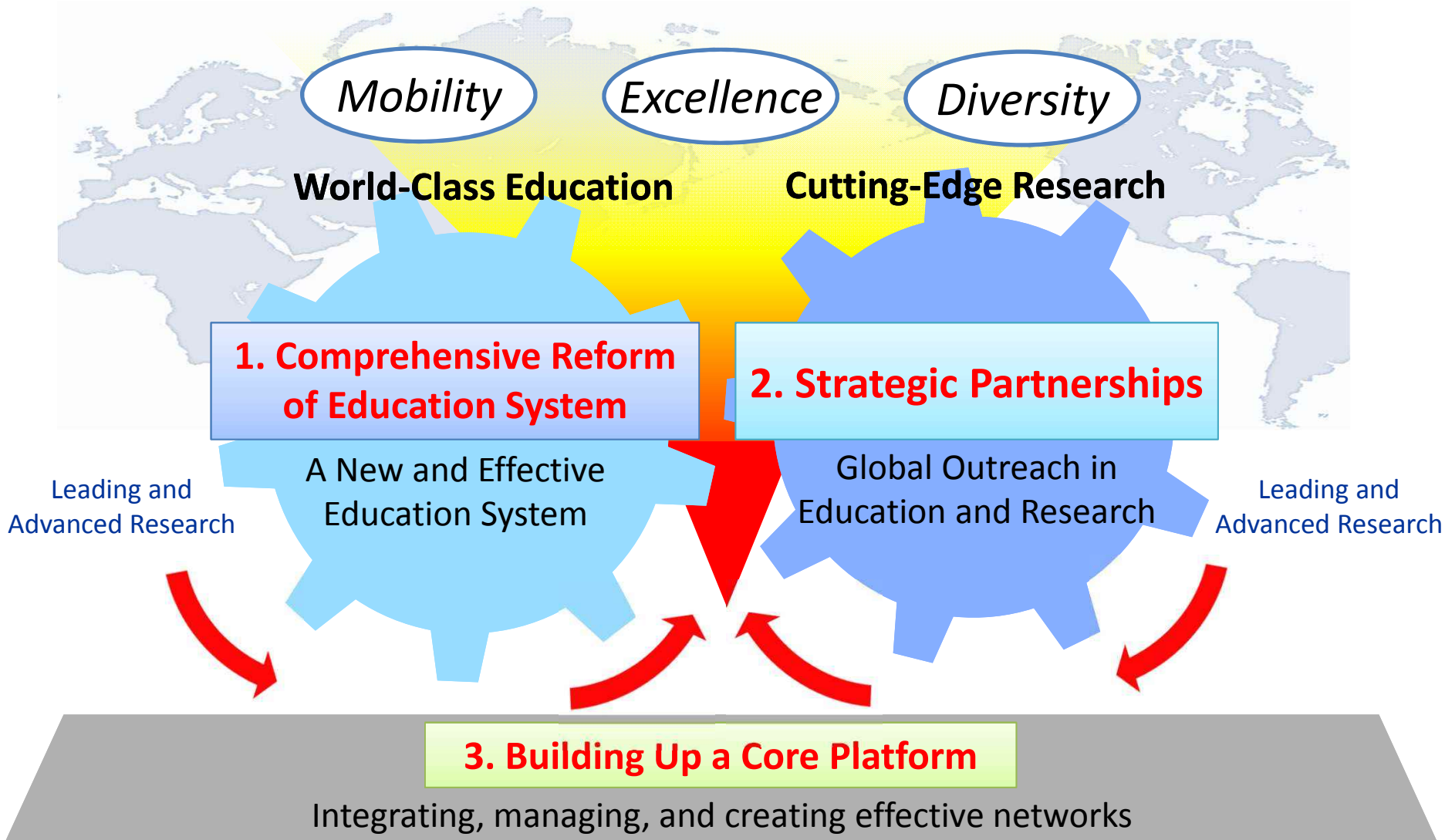
High-level research
and education in
Japanese

Comprehensive
education reform

Diversity
environment

Organization and
staff support the
Global Campus

Constructing a Global Campus Model at UTokyo



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

Project Progress

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

Phase 1

Phase 2

Phase 3

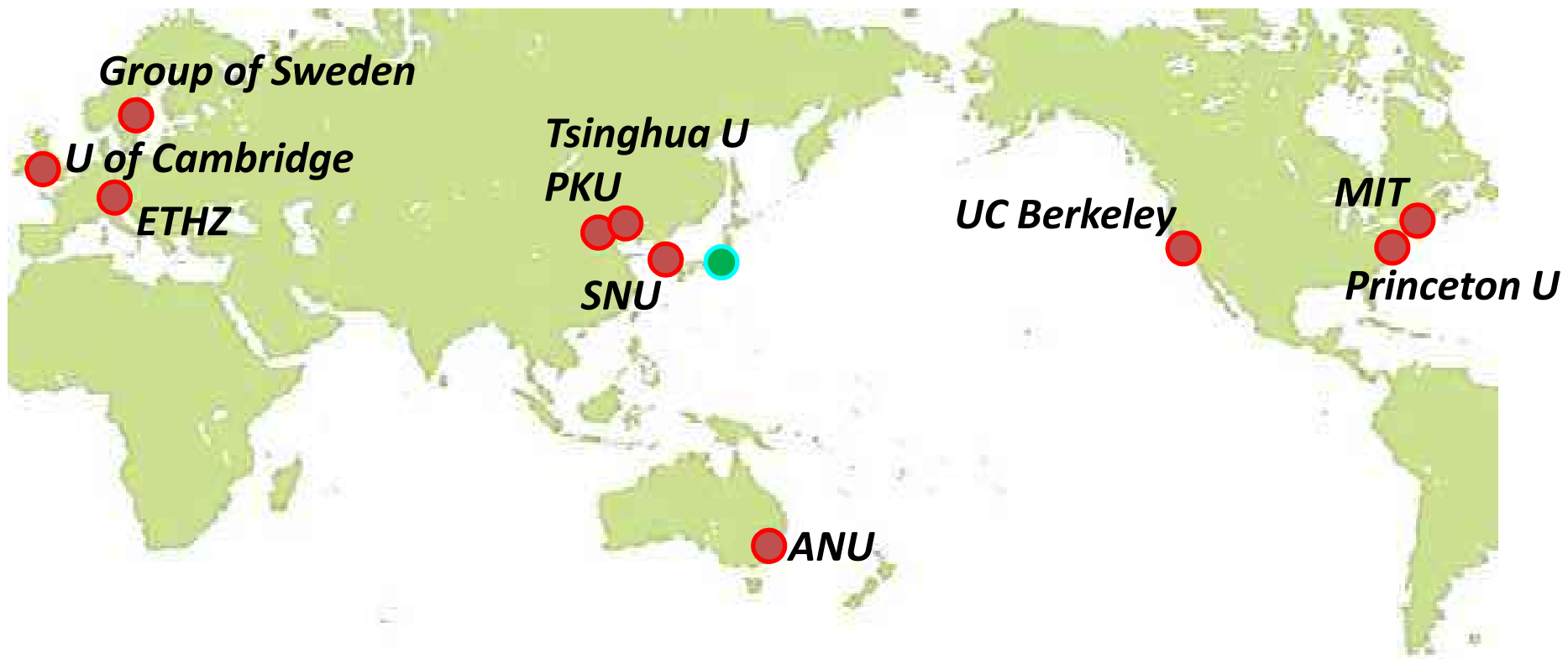
FY2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

From Phase 1 to Phase 2

Examples of criteria used to prioritize projects

Compatibility	<ul style="list-style-type: none">✓ Institution-to-institution cooperation✓ Similar/complementary fields of excellence✓ Mutual benefit and shared resources✓ Active research collaborations and student exchanges	<i>Excellence</i> <i>Mobility</i>
Sustainable Structure within the University	<ul style="list-style-type: none">✓ Involving many faculty, staff, and students (institution-wide)✓ Interdisciplinary✓ Faculty-led	<i>Diversity</i>
Potential for Growth	<ul style="list-style-type: none">✓ Expansive vision/plan✓ Industry/government relation	

10 Primary Strategic Partnership Universities



Project Progress

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

- 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 1

Phase 2

Phase 3

FY2014 2015 2016 2017 2018 2019 2020 2021 2022 2023 2024

10 Primary Strategic Partnership Universities

Australian National University*	6 depts.: 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
Swiss Federal Institute of Technology in Zurich (ETHZ)*	4 depts.: School of Science, School of Engineering, Graduate School of Information Science and Technology (IST), International Center for Elementary Particle Physics
Massachusetts Institute of Technology	6 depts.: 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
Peking University*	5 depts.: 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
Princeton University*	8 depts.: 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

*Strategic Partnership Agreement/MOU already signed

10 Primary Strategic Partnership Universities

Seoul National University*	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
Group of Sweden (Stockholm University, KTH Royal Institute of Technology, Karolinska Institutet)	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
Tsinghua University	7 depts.: School of Engineering, School of Science, Graduate School/College of Arts and Sciences, GSFS, III/GSII, IIS, Institute for Solid State Physics
University of California, Berkeley	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
University of Cambridge*	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

*Strategic Partnership Agreement/MOU already signed

9 Prospective Strategic Partners

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

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

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

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

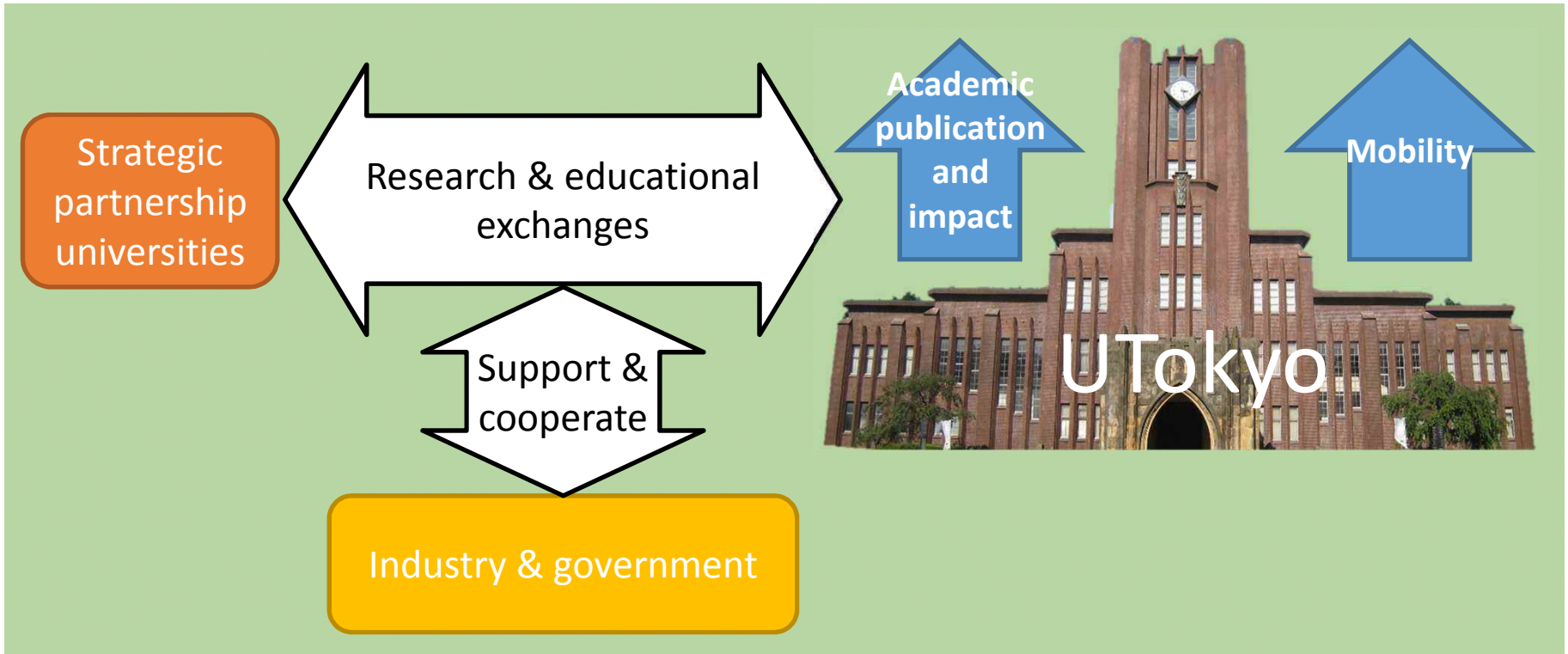
Phase 1

Phase 2

Phase 3

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
- ▶ Graduate School of Mathematical Sciences
- ▶ Graduate School of Public Policy
- ▶ International Affairs Division
- ▶ Peking Alumni Association

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



北京大学
PEKING UNIVERSITY

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

```
graph BT; A[Stronger partnership] <--> B[Departmental-level]; A <--> C[University-level];
```

<Departmental-level>

Continue and
broaden activities

- CAMPUS Asia Program etc.

<University-level>

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



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



25th of August, 2016



26th of August, 2016



27th of August, 2016



29th of August, 2016



Lunch time!
You are having a summer intern at JP& CN. Co
There are three restaurants in the street:




The image shows three logos side-by-side. On the left is the KFC logo featuring the Colonel Sanders character. In the middle is the Yoshinoya logo with the Japanese characters '吉野家' above 'YOSHINOYA'. On the right is the Aoyuan logo with the Chinese characters '真功夫' above a stylized figure.

UTokyo-PKU Joint Summer Program 2016

NATURAL 7-ELEVEN

Make it distinguished

Konno Amane, Hatano Koya, Fu Duanling, Wang Lu
August 31, 2016



WHY IS THERE NO SUNTORY BEER IN 7-11
SUNTORY, VIEWED FROM THE PAST, TODAY, AND THE FUTURE

BY GLOUCE
OVI YUAN,
MINAMI YETERO,
XUN ZHENGYUAN
2016/8/31

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.
- ▶ Some PKU students are considering to study in Tokyo, and some will come to Japan in this Spring to study and to work.

- ▶ 2. Japanese students' images of Beijing have changed.
- ▶ Before this program, some students had negative images about China.
- ▶ Now, it has changed and we have positive images (Ex. friendly, advanced).

- ▶ I think, now many of us is hoping to build a good relationship between Japan and China.

Thank You !!!

March 17, 2017

The Third UTokyo Strategic Partnership Symposium

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)

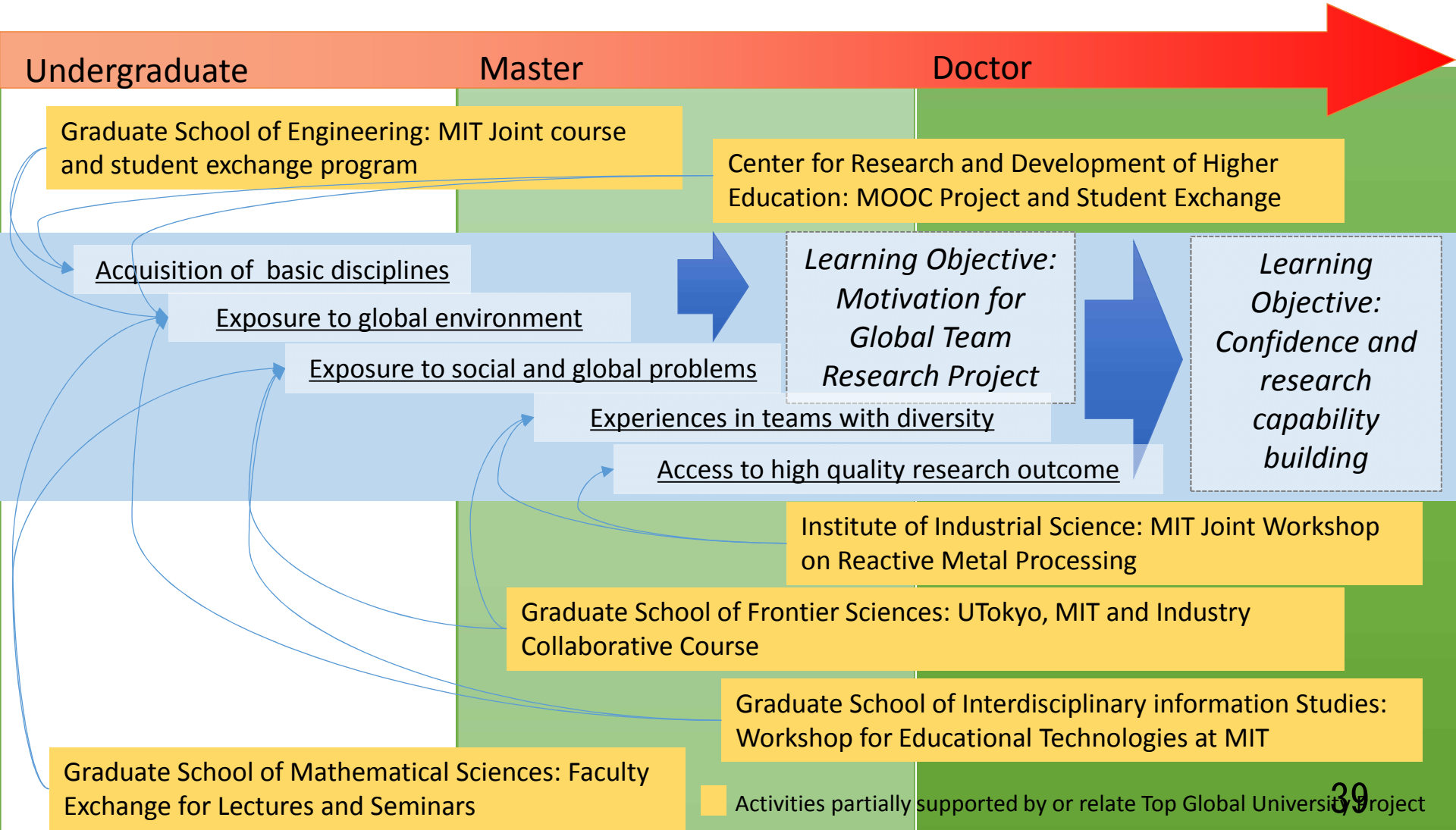
Kota Okada (Graduate Student, Graduate School of Frontier Sciences)

MIT and UTokyo

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

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



– Undergraduate Education –

Exposure to Global Environment

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

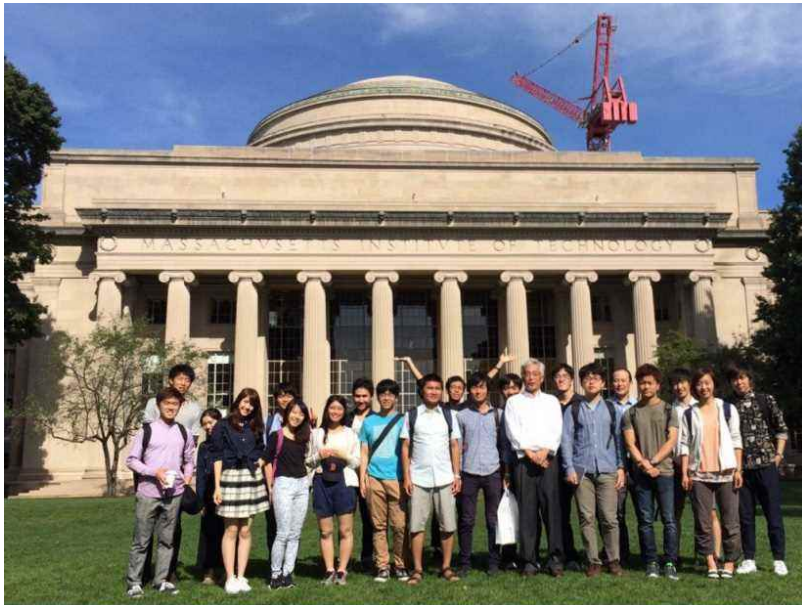
Undergraduate Student Exchange through UT-MIT Joint Activities

- UT-MIT International Lecture

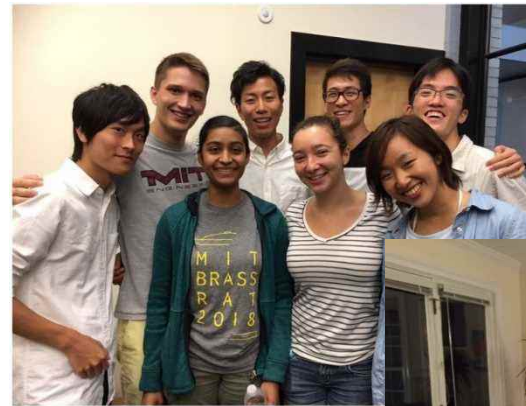
UTokyo students have been stayed in MIT from Sep. to Jan., and MIT students started their stay at UTokyo from Jan.

- 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 –

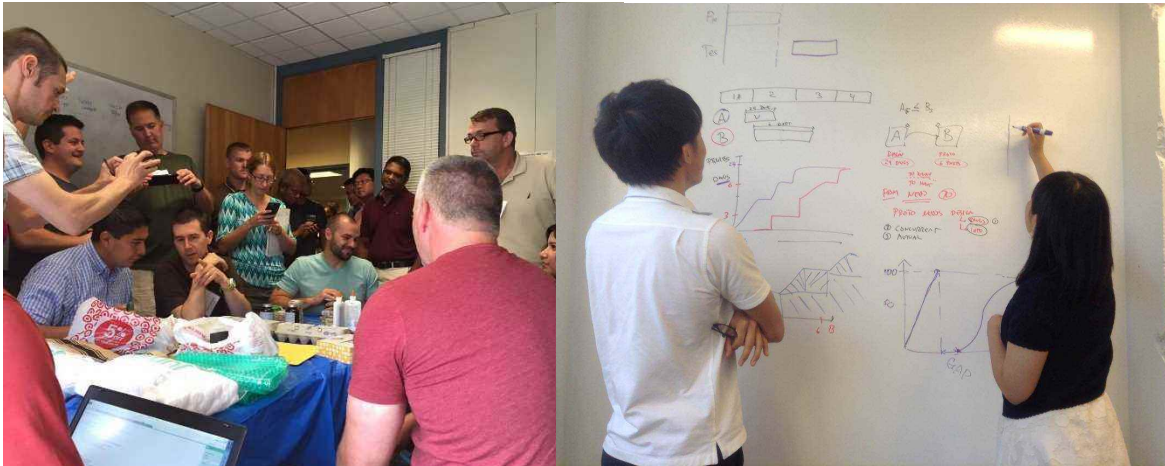
- University-Wide program, Hands-on Activities

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

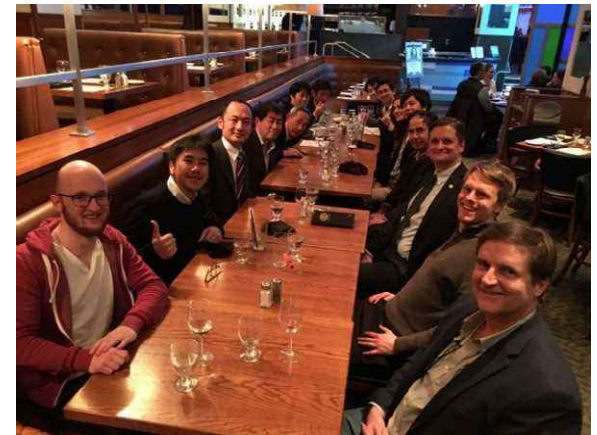
Global Teamwork Lab offers series of UTokyo-MIT and Industry joint activities.

- 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 and 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.



Reactive Metal Processing (RMW12)

UT-MIT Joint Academic Workshop

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.





Teiji Takagi
(1875-1960)

The Eighteenth

Takagi Lectures

Date : November 5 (Sat) - 6 (Sun), 2016

Place : Graduate School of Mathematical Sciences, The University of Tokyo



Ngô Bảo Châu
(The University of Chicago)



David Vogan
(Massachusetts Institute of Technology)



Geordie Williamson
(Max-Planck-Institut für Mathematik)

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 Strang

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

Tw
Or
Tr



MIT Lecture at UTokyo Open to All Students

MathWorks Professor of Mathematics
Massachusetts Institute of Technology

GILBERT STRANG

Tuesday, January 10, 2017 14:55 - 16:40

Matrix Multiplication and Matrix Factorization

Lecture Hall,
Graduate School of Mathematical Sciences,
(数理科学研究科棟 大講義室) Komaba Campus

Thursday, January 12, 2017 10:25 - 12:10

Eigenvalues, Singular Values, Matrices in Data Science

Seminar Room A (Room 367),
Faculty of Engineering Bldg. No.6,
(工6号館) Hongo Campus



Learn more on UTokyo OCWx
<http://ocwx.ocw.u-tokyo.ac.jp/>
(will be open on January 10, 2017)

This lecture is delivered to several universities
via bidirectional streaming system UTOP.

UTOP

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.

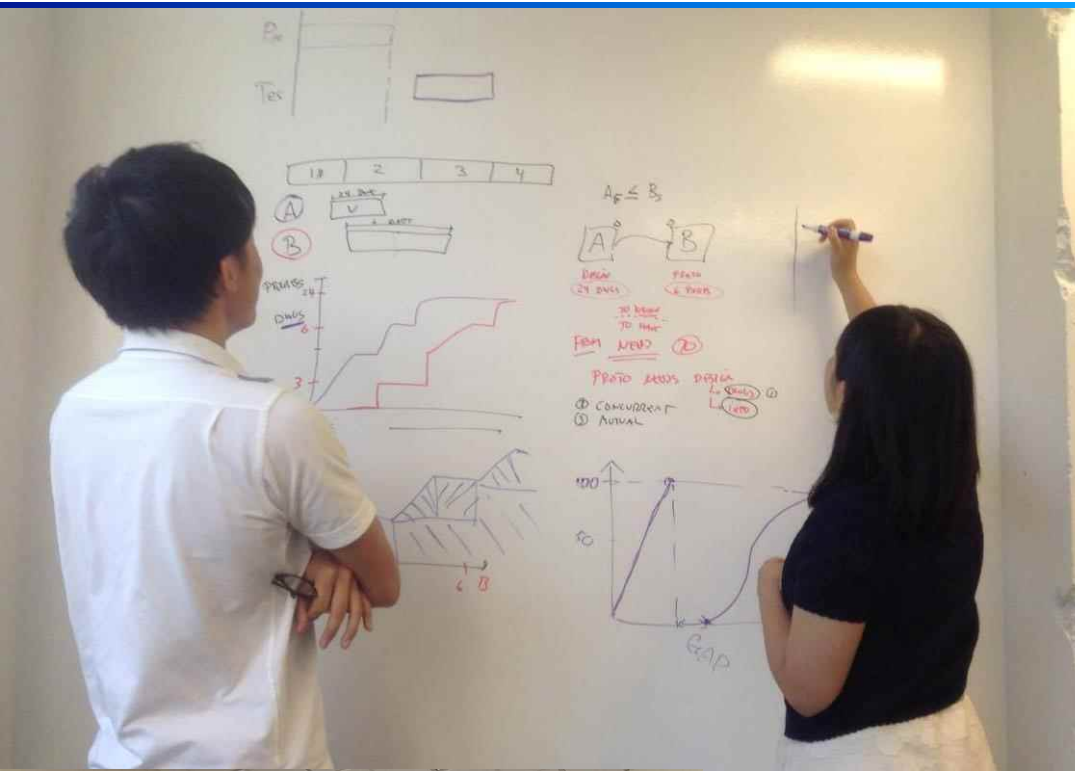
- Participated in “boot camp” held in MIT-SDM
- Meetings with MIT researchers
- MIT Media Lab visit
- Lectures by Dr. Bryan Moser, MIT-SDM



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

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

Schedule and participants

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

Industry



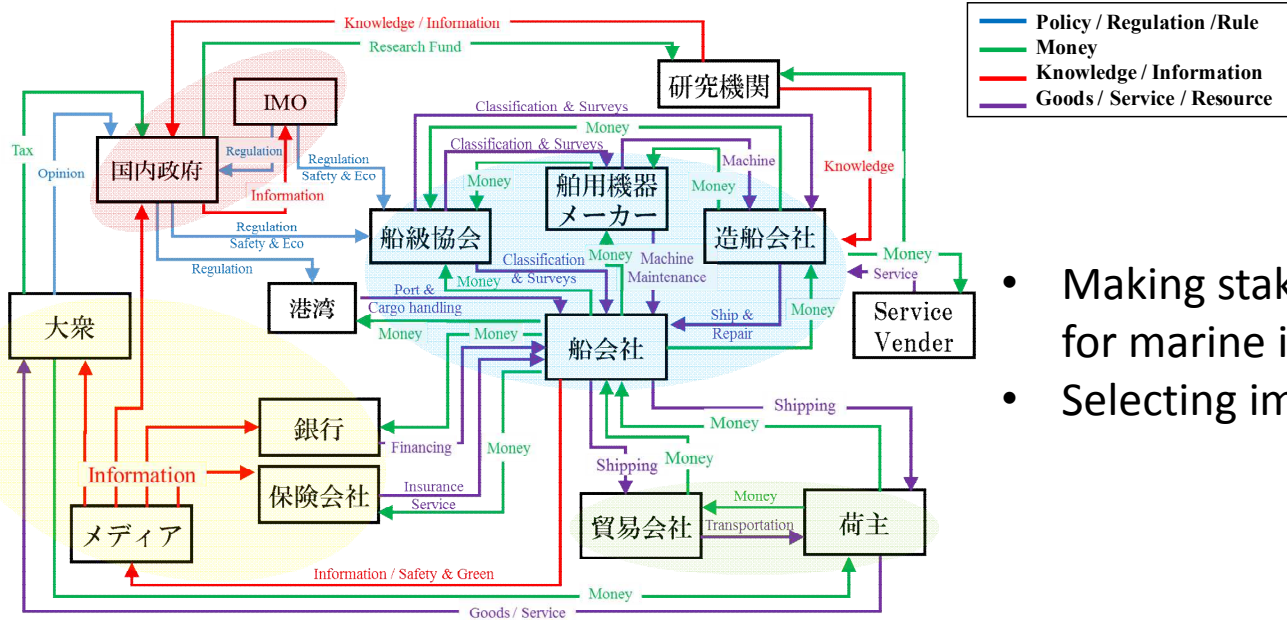
ClassNK

University



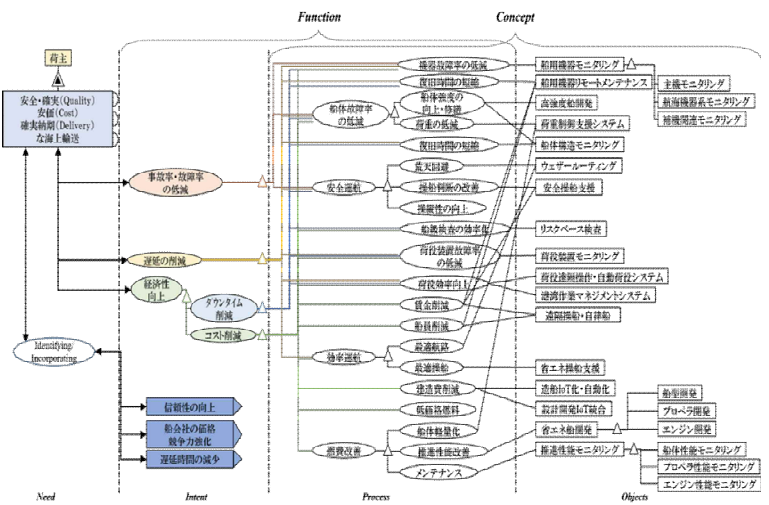
**Massachusetts
Institute of
Technology**

Outcomes from Workshop



- Policy / Regulation / Rule
- Money
- Knowledge / Information
- Goods / Service / Resource

- Making stakeholder value network(SVN) for marine industry.
- Selecting important value flow



IoT技術 (Form)	機能 (Function)	詳細機能
船用機器モニタリング	機器故障率の低減	機器故障率 [case/h]: ↓
船用機器リモートメンテナンス	機器復旧時間の短縮 船員数の削減	復旧時間 [h/case]: ↓ 船員数 [man]: ↓
高強度船開発	船体強度の向上	船体故障寿命 [case/h]: ↑
荷重制御支援システム	船体荷重の低減 船体軽量化	荷重確率分布:改善 船体重量 [ton]: ↓
船体構造モニタリング	船体復旧時間の短縮 船体強度の修繕	修復時間 [h/case]: ↓ 入渠期間:改善
ウェザールーティング	荒天回避 省エネ最適航路	遭遇海象の確率分布:改善
安全船舶支援	船舶判断の改善 船員資金の削減	事故率 [case/voyage]: ↓ 船員資金 [\$ / man · month]: ↓
リスクベース検査	船級検査の効率化	検査費 [\$]: ↓ 検査時間 [h]: ↓
荷役装置モニタリング	荷役装置故障率の低減	荷役装置故障率 [case/h]: ↓ 復旧時間 [h/case]: ↓
荷役遠隔操作・自動荷役システム	荷役効率の向上	荷役時間 [h]: ↓ 荷役遅延率 [case/part]: ↓ 荷役遅延時間 [h/case]: ↓
港湾作業マネジメントシステム	荷役効率の向上	荷役費 [\$]: ↓ 荷役遅延率 [case/part]: ↓ 荷役遅延時間 [h/case]: ↓
遠隔操縦・自律船	船員資金の削減 船員数の削減	船員資金 [\$ / man · month]: ↓ 船員数 [man]: ↓
省エネ船舶支援	省エネ最適船舶	燃費確率分布:改善
造船IoT化・自動化	建造費の削減	建造費 [\$]: ↓
設計開発IoT統合	建造費の削減	建造費 (設計費) [\$]: ↓
省エネ船開発	燃費効率の向上	船体抵抗 [kg]: ↓ プロペラ効率 [EHP/BHP]: ↑ エンジン効率 [BHP/fuel]: ↑
推進性能モニタリング	メンテナンス	入渠期間:改善

- Defining a scenario of adapting IoT technology to marine industry.
- Technology infusion of IoT

Project topic sponsor for MIT-SDM



Company	Title	Selected
JMU	New Container Transport System	<input type="radio"/>
NYK	Feasibility of Autonomous Navigation Ships	<input type="radio"/>
NYK	New Services Possible through the Evolution of the Onboard Broadband Environment and IoT Technology	<input type="radio"/>
NMRI	Ship Performance Prediction using Cyber Physical System	<input type="radio"/>
NK	Verification of Total Safety of Unmanned Ships World ~How to assure safety of AI ?~	<input type="radio"/>
NK	Assured and Accelerated Design Approval System against Complex Technical Requirements	<input type="radio"/>

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



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



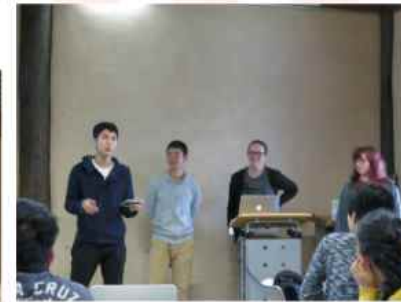
Learning indigenous culture indoors and outdoors



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



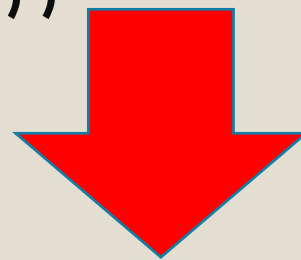
Change: before/after



I gonna break
down...!

Absent from daily life

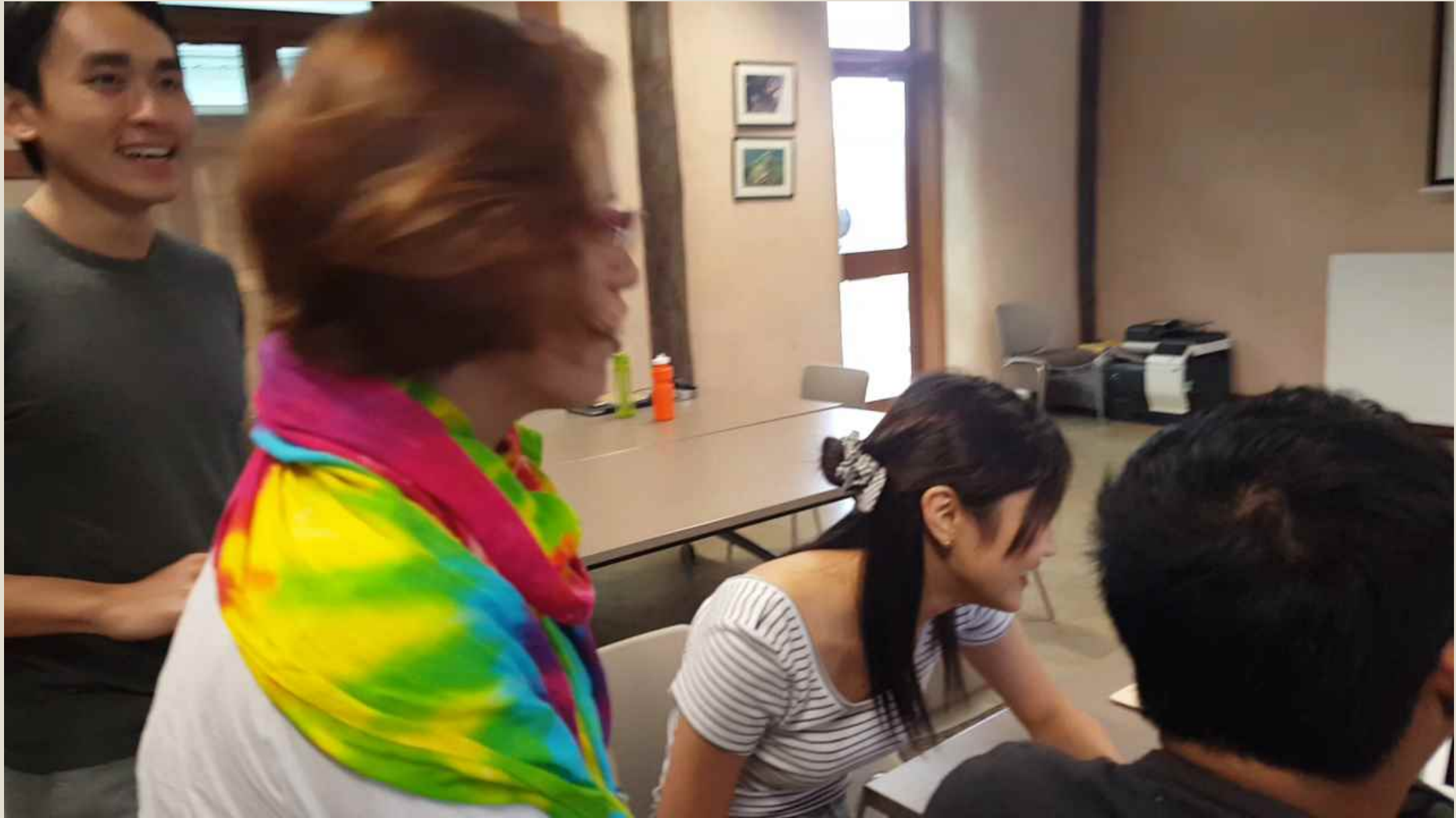
- "being busy = leading satisfying life"



- "can enjoy yourselves = leading satisfying life"

More Interest in Asian countries





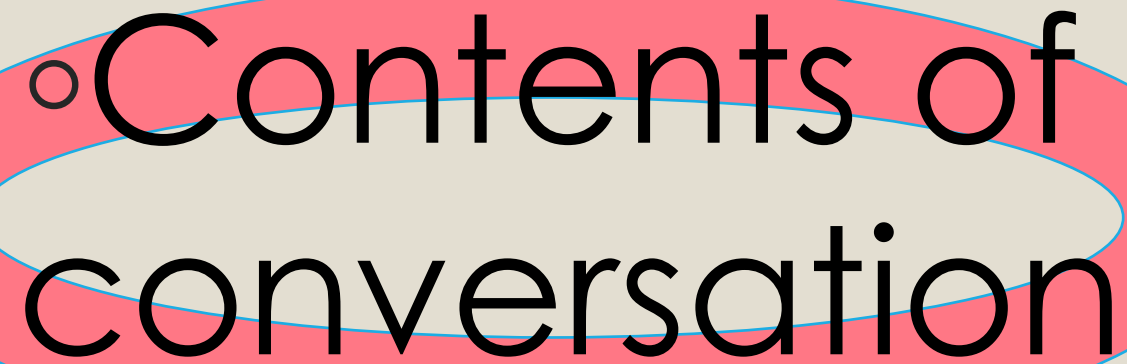
Communication skills

- 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

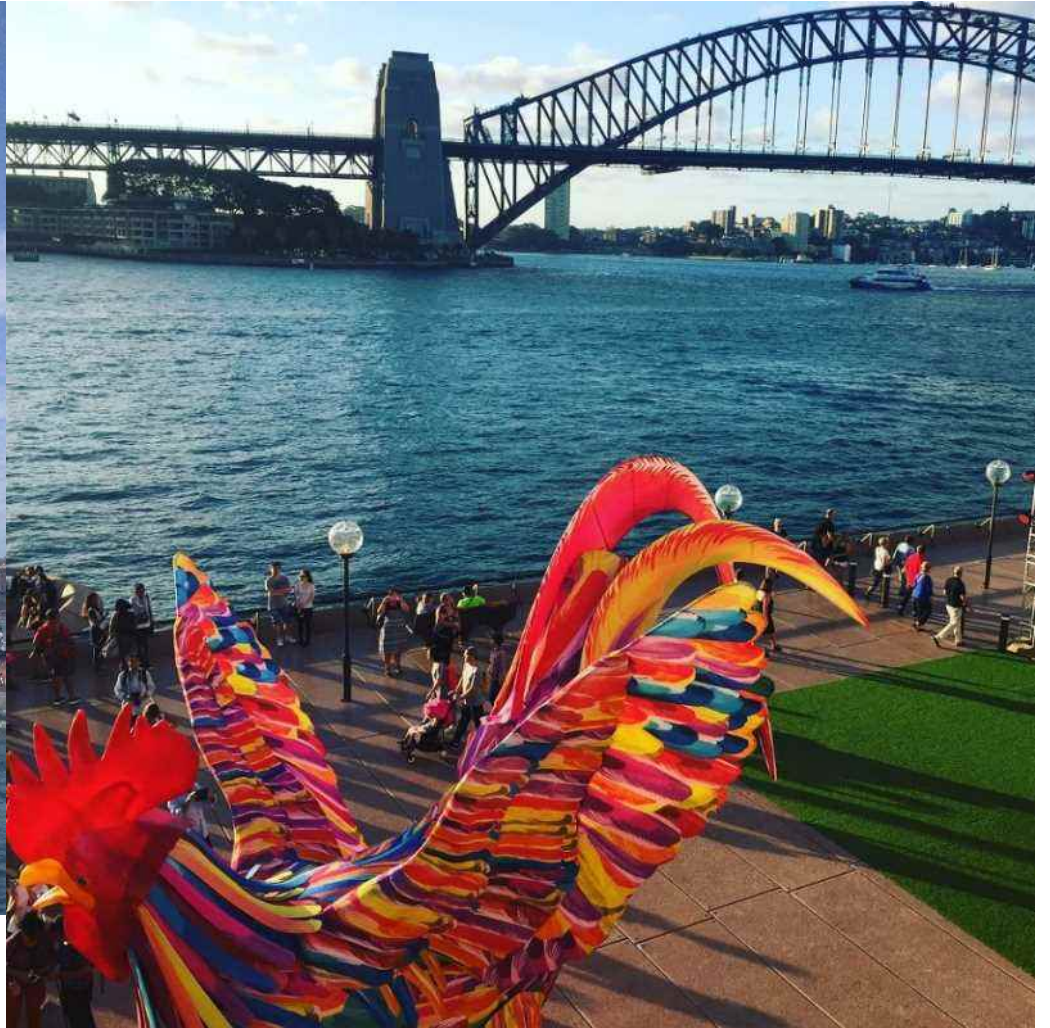
Reishi Mitani



Lake Yamanaka/Kioloa









Strategic Partnership with ETH Zürich

Hirokazu Sugiyama

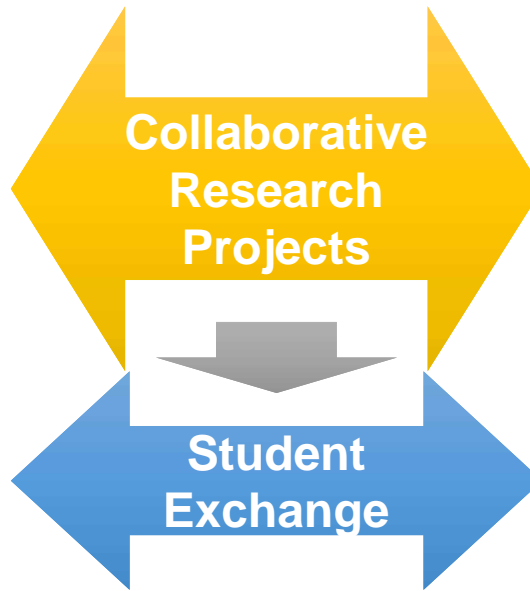
Department of Chemical System Engineering

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



Meeting with
Our President Gonokami

- ✓ 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



Group Photo



Discussion with Partnership Leaders

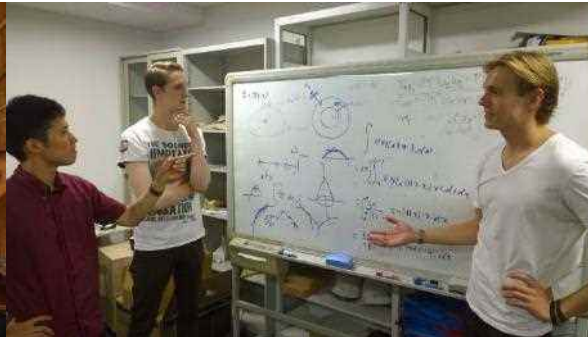


Visit to Kavli IPMU

Student Stay/Visit, Enrollment and Employment



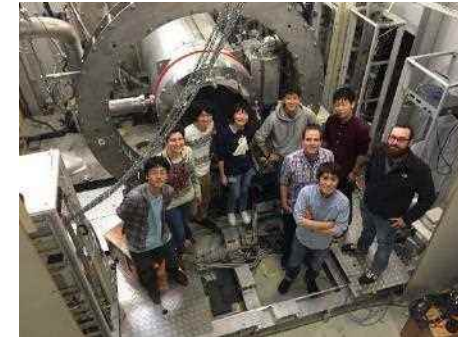
Ms. Kubinocova at UTokyo



Mr. Fluri and Mr. Riebartsch at UTokyo



Ms. Zeberli at UTokyo



Summer School at Paul Scherrer Institute of ETH Domain

Stay of Graduate Students

Apr-Jul, 2016

Alzbeta Kubinocova, M@ETHZ
Janis Fluri, M@ETHZ
Julian Riebartsch, M@ETHZ

Chemistry@UTokyo
Physics@UTokyo
Physics@UTokyo

Jul, 2016

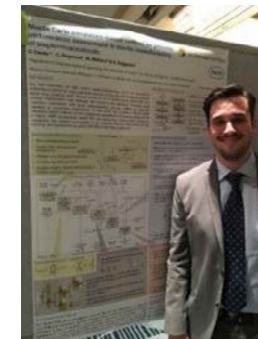
Lukas Eberle D@ETHZ

Chemsys@UTokyo

Sep, 2016-Mar, 2017

Anicia Zeberli, M@ETHZ
Ruben Wuhlgenannt, M@ETHZ
Jörg Wieder, M@ETHZ

Chemsys@UTokyo
GSIST@UTokyo
Physics@UTokyo



Mr. Casola, Doctoral Student of UTokyo



Mr. Strodkötter, Doctoral Student of UTokyo

Visit of Graduate Students

Jun-Aug, 2016

Eunice Phua, D1@UTokyo

Material@ETHZ

Student Enrollment and Employment

Apr, 2015 in and after

Naohiro Terasaka

D@UTokyo

→

PD@ETHZ

Sep, 2015 in and after

Ryo Asakura

B@UTokyo

→

M@ETHZ

Oct, 2015 in and after

Richard Obexer

D@ETHZ

→

PD@UTokyo

Oct, 2015 in and after

Gioele Casola

M@ETHZ

→

D@UTokyo

Apr, 2016 in and after

Matthias Strodkötter

M@ETHZ

→

D@UTokyo

Sep, 2016 in and after

A GSC student

B@UTokyo

→

M@ETHZ

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

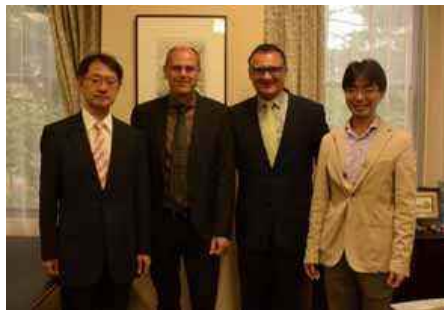


- ✓ Ms. Szedlák, PhD Student (RA) of ETHZ (August, 2016) and Dr. Barba, PD of ETHZ (January, 2017) visited UTokyo and gave lectures at Graduate School of Information Science and Technology.
- ✓ Roche Researchers Dr. Schmidt and Dr. Mattern visited UTokyo and hold seminars for Chemical System Engineering students in July 5, 2016.



Dr. Barba's Lecture on Jan. 23

Roche people are closely related to ETHZ (Prof. Hungerbühler) and UTokyo Dept. of Chemical System Engineering (Prof. Sugiyama).



Dr. Schmidt and Dr. Mattern (Roche) visited Prof. Mitsubishi, Dean of the School of Engineering



Group Photo after open seminars at the Department of Chemical System Engineering

Exchange of Doctoral Degree Examiner



- ✓ 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

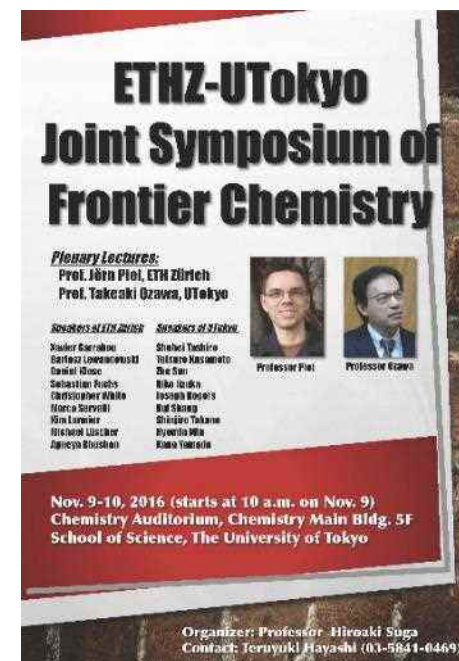
Joint Symposium of Frontier Chemistry on November 9-10



- ✓ 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.



Group Photo of the Symposium Participants



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

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

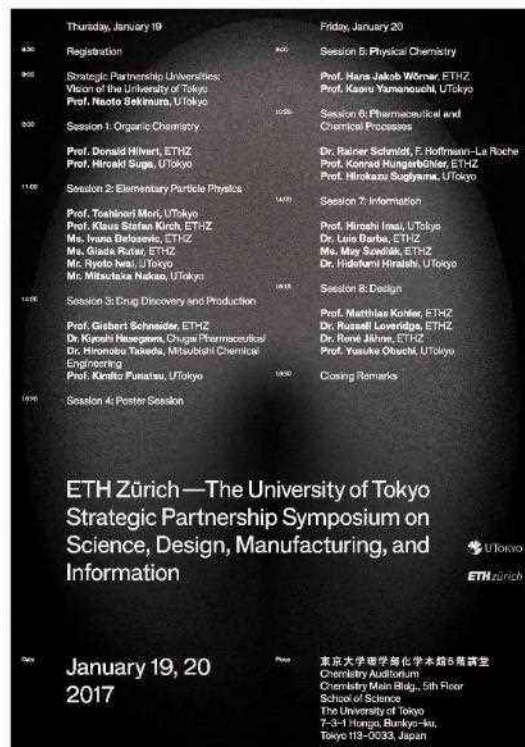
A post-doctoral fellow talking his hot results



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

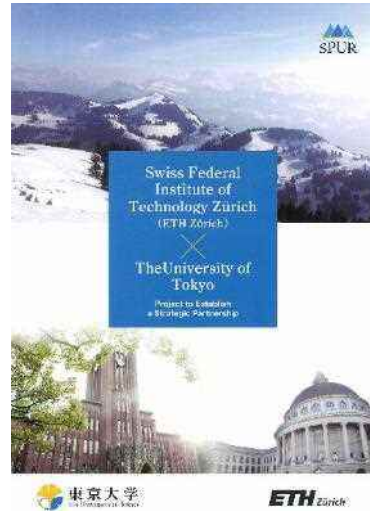


Ms. Suzuki, Deputy Head of Science and Technology Office, Swiss Embassy, joined the Symposium

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



Booklet in 2016FY



Webpages of UTokyo



Webpages of ETH Zürich



Webpages of Science and Technology Office of Swiss Embassy



Thank you for your attention.

Strategic Partnership between Princeton and UTokyo

Yasushi ONO

Professor of Graduate School of Frontier Sciences



Background and Feature

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**

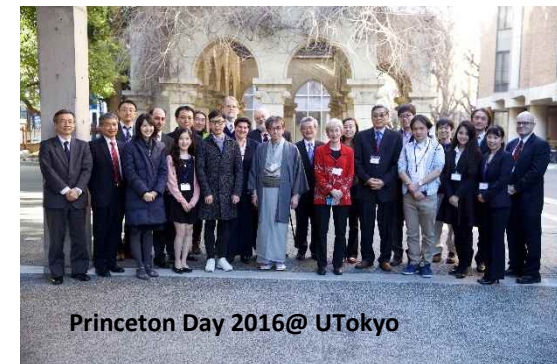
Both universities contribute an equal budget

Princeton-UTokyo Partnership Initiatives: Teaching and Research Collaboration

- 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)
- Grant Awarded Projects: 14 Projects / 4 times proposal (2013-2017)
 - 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

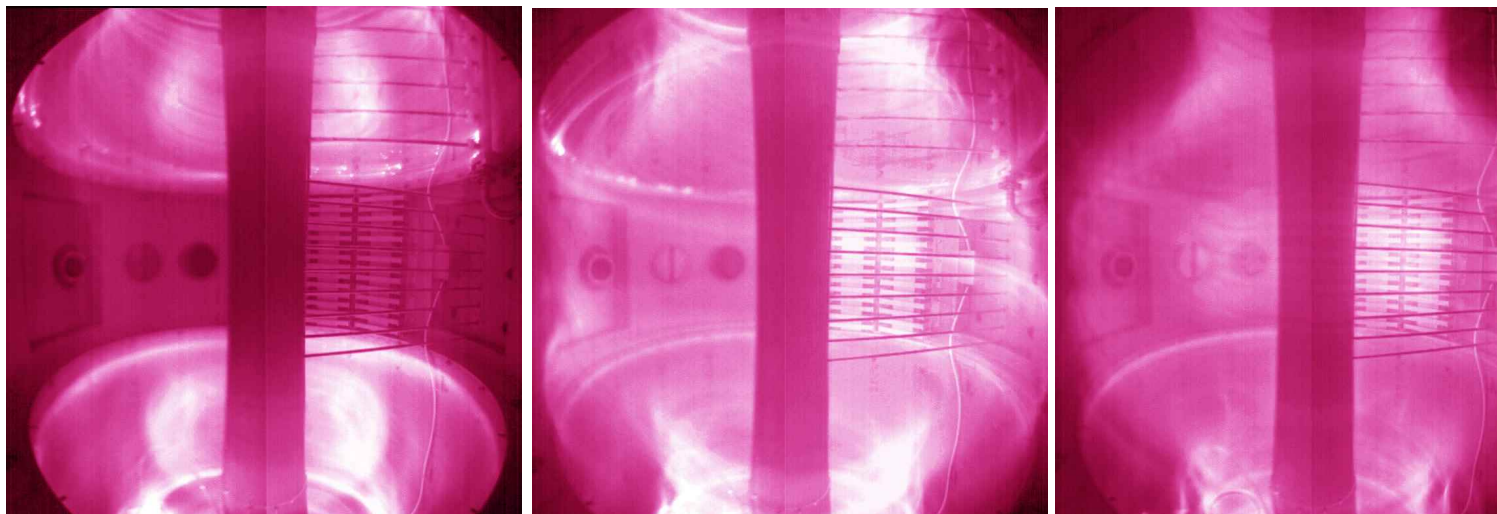
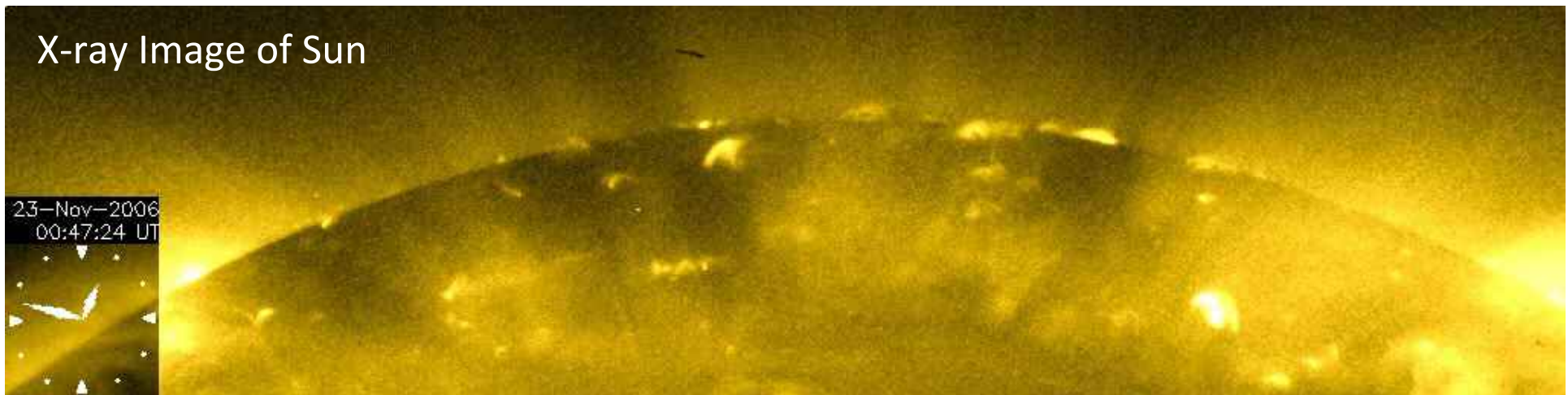
- Oct 2013 President Eisgruber visited UTokyo
- Oct 2014 UTokyo Day: Celebration of Our Partnership @ Princeton
- May 2015 Prof. Tom Gally & Tatsuru Masuda's (Arts & Sciences) project with Princeton was selected as part of UTokyo's Top Global University Project to establish strategic partnerships
- Oct 2015
- The Ogasawara Foundation for the Promotion of Science & Engineering received the "Shokumon Award"
 - Study Abroad Fair and staff exchange @ Princeton
 - VP Vrachnos visited UTokyo
- Mar 2016 Staff exchange & Princeton Day: Progress report of the strategic partnership @UTokyo



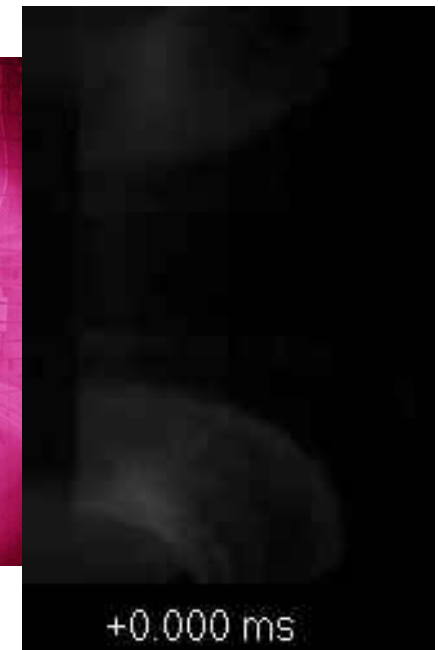
Princeton-UTokyo Educational Partnership in Plasma Physics

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

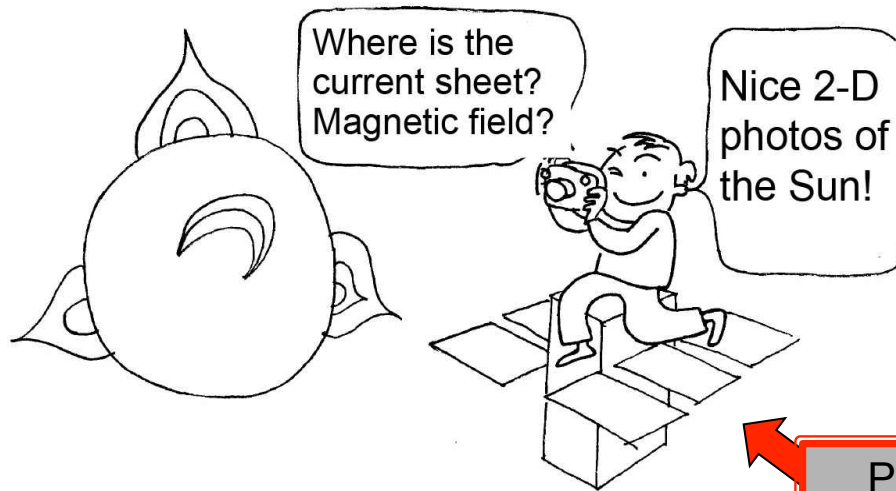


Visible light images of two merging tokamak plasmas



Laboratory observational & theoretical researches have advantages and disadvantages → Interdisciplinary research

Solar Observation

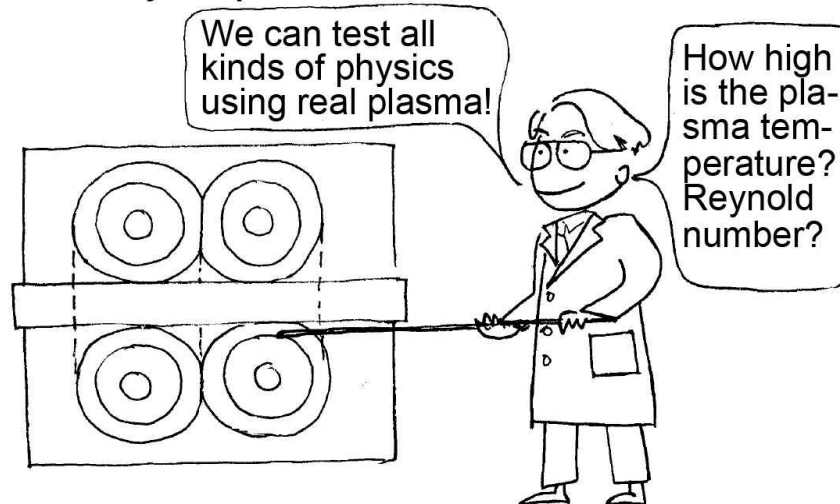


Magnetosphere Observation



PU-UT
J-Education

Laboratory Experiment



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

Schedule of Lectures for PUTEP FY2016, Engineering Building No.2, Univ. Tokyo

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



Joint Lecture in University of Tokyo



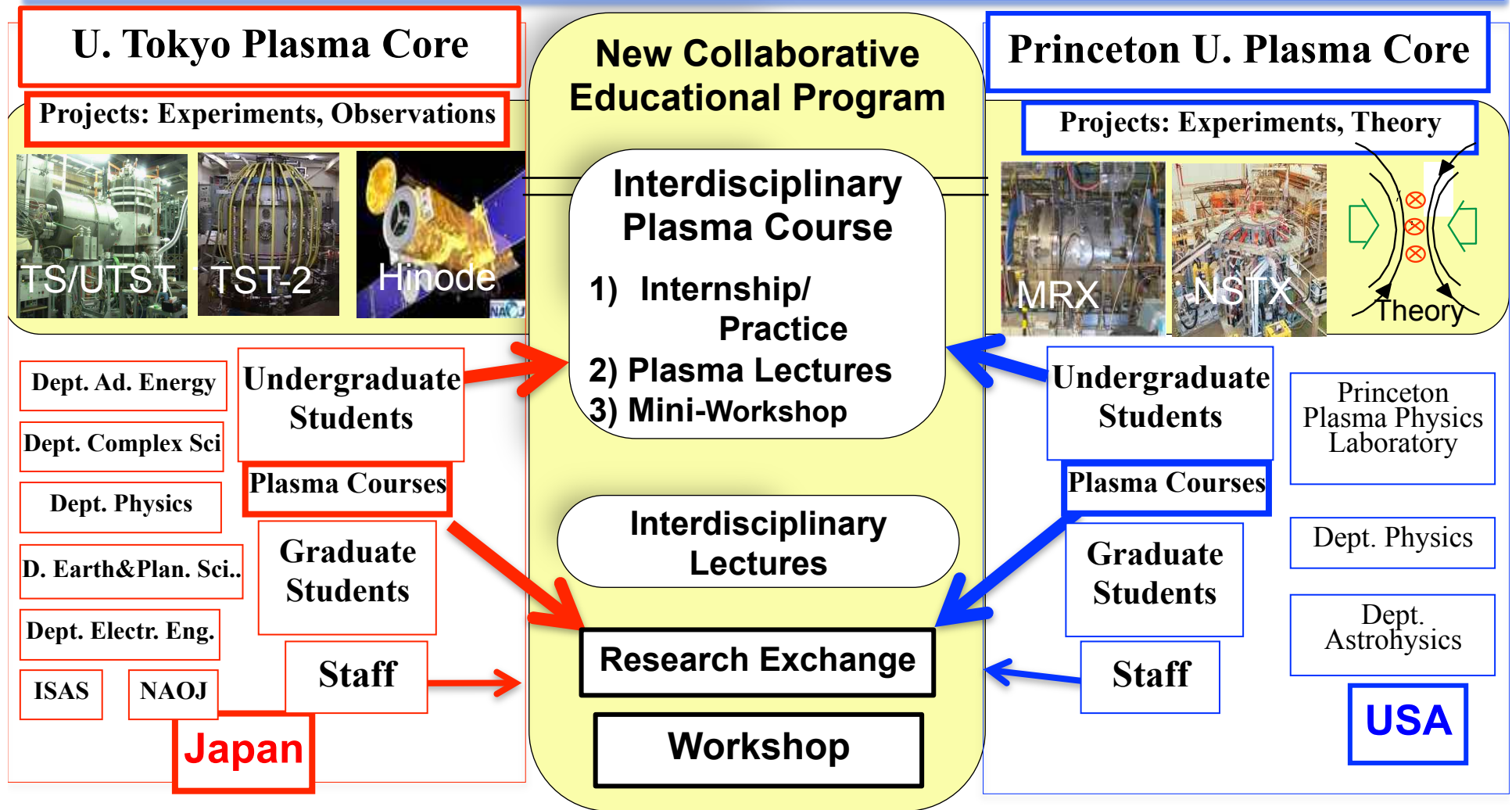
Excursion to Nikko National Park



PrincetonU-UTokyo Educational Partnership in Plasma Physics

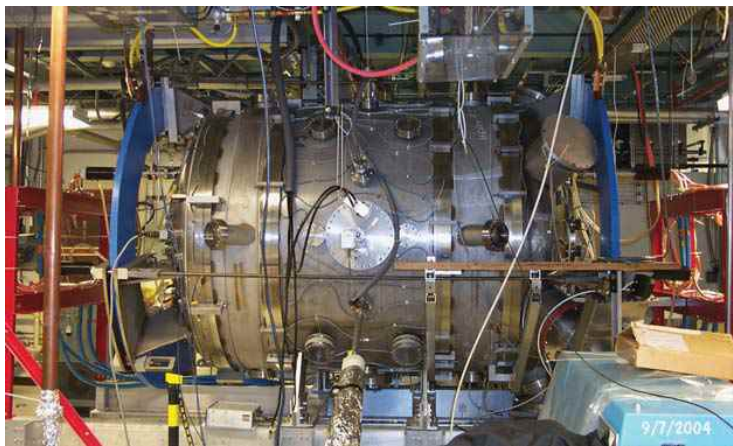
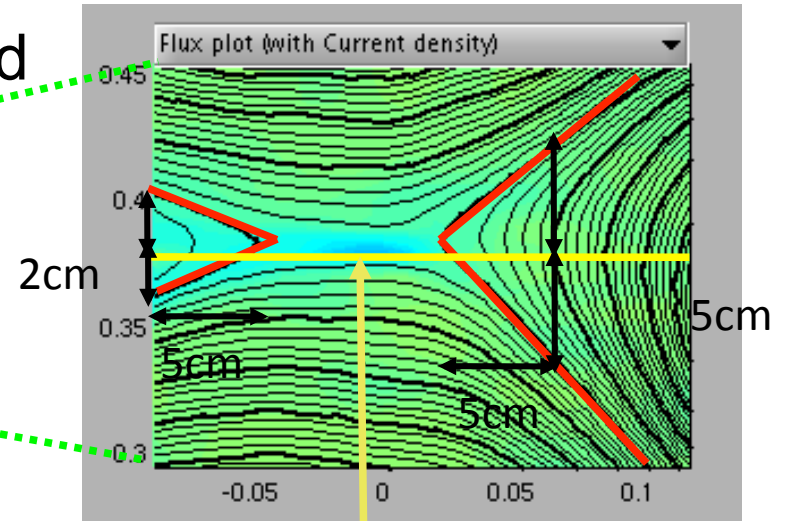
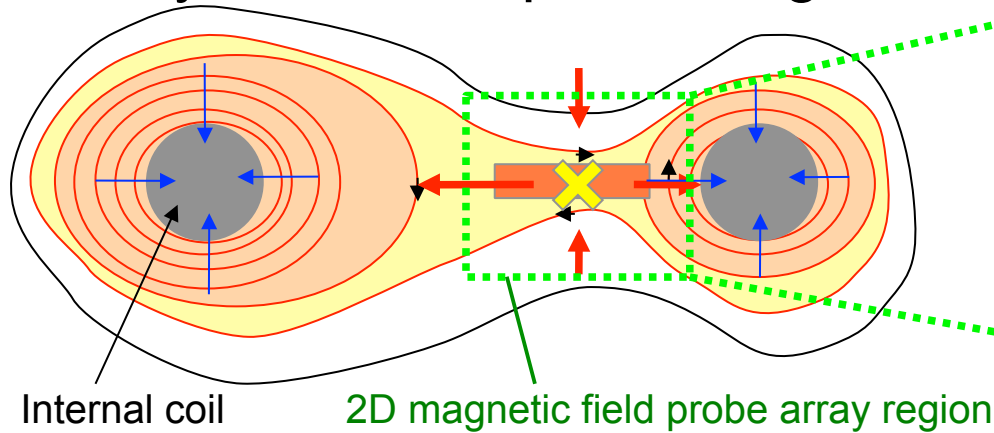


Upgraded New Stage Global Science Graduate Course 国際卓越大学院

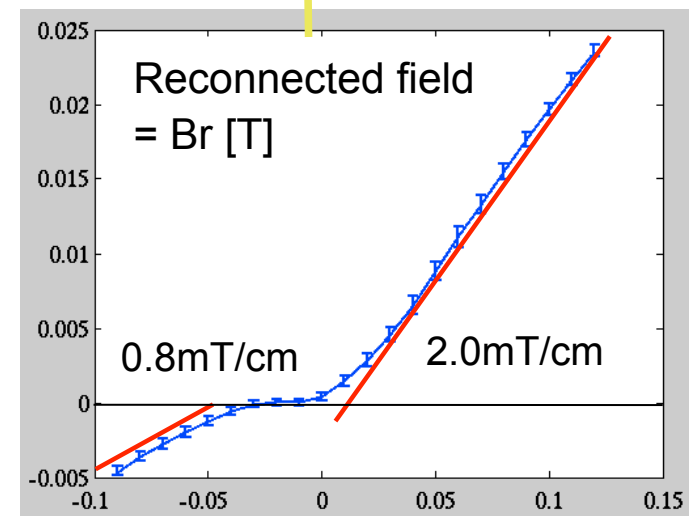


Mr. Kadowaki (Advisor: M Yamada) experimentally tested asymmetric reconnected magnetic field in MRX pull-mode reconnection.

Asymmetric in-plane magnetic field



Magnetic Reconnection Experiment (MRX)



Reports presented by 5 UTokyo Students

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

Report on Collaborative Research at Princeton University

Name:	Kota Hirabayashi
Affiliation:	Department of Earth and Planetary Science (UTokyo)
Period:	Oct. 5, 2015 ~ Oct. 23, 2015
Place:	Department of Astrophysical Sciences (Princeton)

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 weakly 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 everyone 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.

Kazutake Kadowaki: Dept. Electrical Eng.)
 Adviser: M. Yamada (PPPL)

Asymmetric Magnetic Reconnection in outflow using MRX device

Kazutake Kadowaki

Department of Electrical Engineering and Information Systems, Graduate School of Engineering, University of Tokyo

From the last May to July I visited Princeton Plasma Physics Laboratory (PPPL) and made a new plasma experiment using the Magnetic Reconnection eXperiment (MRX). The research target was the reconnection under the different boundary condition in each downstream regions which simulates the reconnection at Magnetotail. We successfully realized the asymmetric reconnection in outflow, and measured each components of the energy flows into each downstream.

Keywords: Plasma physics, Laboratory astrophysics, Asymmetric magnetic reconnection

Magnetic reconnection is a fundamental process in magnetized plasmas. It is observed in the solar corona, the Earth's magnetosphere, and even in laboratory plasmas for nuclear fusion research. During the reconnection, the energy stored in the magnetic field is efficiently converted into the kinetic and thermal energy of plasma. Recently, Yamada¹ reported the detailed energy inventory in well-controlled, quasi-steady, collisionless, two-fluid reconnection in the MRX. One of the remaining problems is the interaction between reconnecting region and the downstream region. There are many situations in nature and the laboratory for which the outflow is asymmetric. The example is the reconnection in the Earth's magnetotail² which is recognized as the most important process in substorm which is widely known as the generating mechanism of beautiful aurora.

In MRX, asymmetry is generated during the plasma formation period by changing the strength of the inductive electric field around the each internal coils which accelerates the electrons along the magnetic field and occurs a discharge. The initial two torus plasmas have different plasma currents and poloidal minor radii, which shifts the x-line toward the weak plasma side, and reconnection angles in each side also have different values.

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 separatrix. 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

- [1] M. Yamada *et al.*, Nat. Commun., 5, 4774 (2015).
- [2] J. Eastwood *et al.*, Phys. Rev. Lett., 110, 225001 (2013).

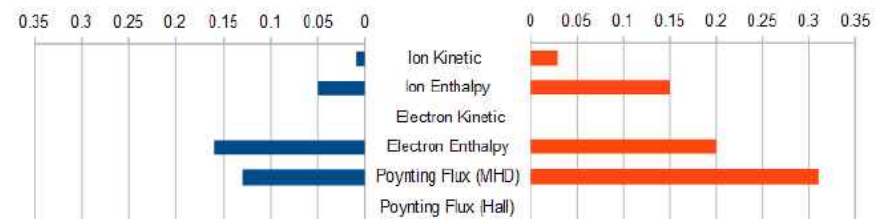


Fig. 1. Measured rate of energy flux of outflow in the (right) +Z and (left) -Z direction.

Kota Hirabayashi

Department of Earth and Planetary Science (UTokyo)

→ Department of Astrophysical Sciences (Princeton)

Host Professor: Professor James M. Stone

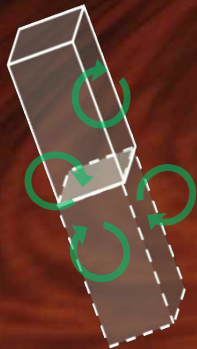
Stratified Simulations of Collisionless Accretion Disks

collimated jet

γ -rays ~ radio



disk wind



Plentiful dynamics are driven by angular momentum transport via *MHD turbulence*



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 SNU-UTokyo Joint Summer Program 2015 in Tokyo
- 8/12 • 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*
- 2016/8/1-10 SNU-UTokyo Joint Summer Program 2016 (Tokyo
/8/15-24 Round and Seoul Round)
 - 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 -



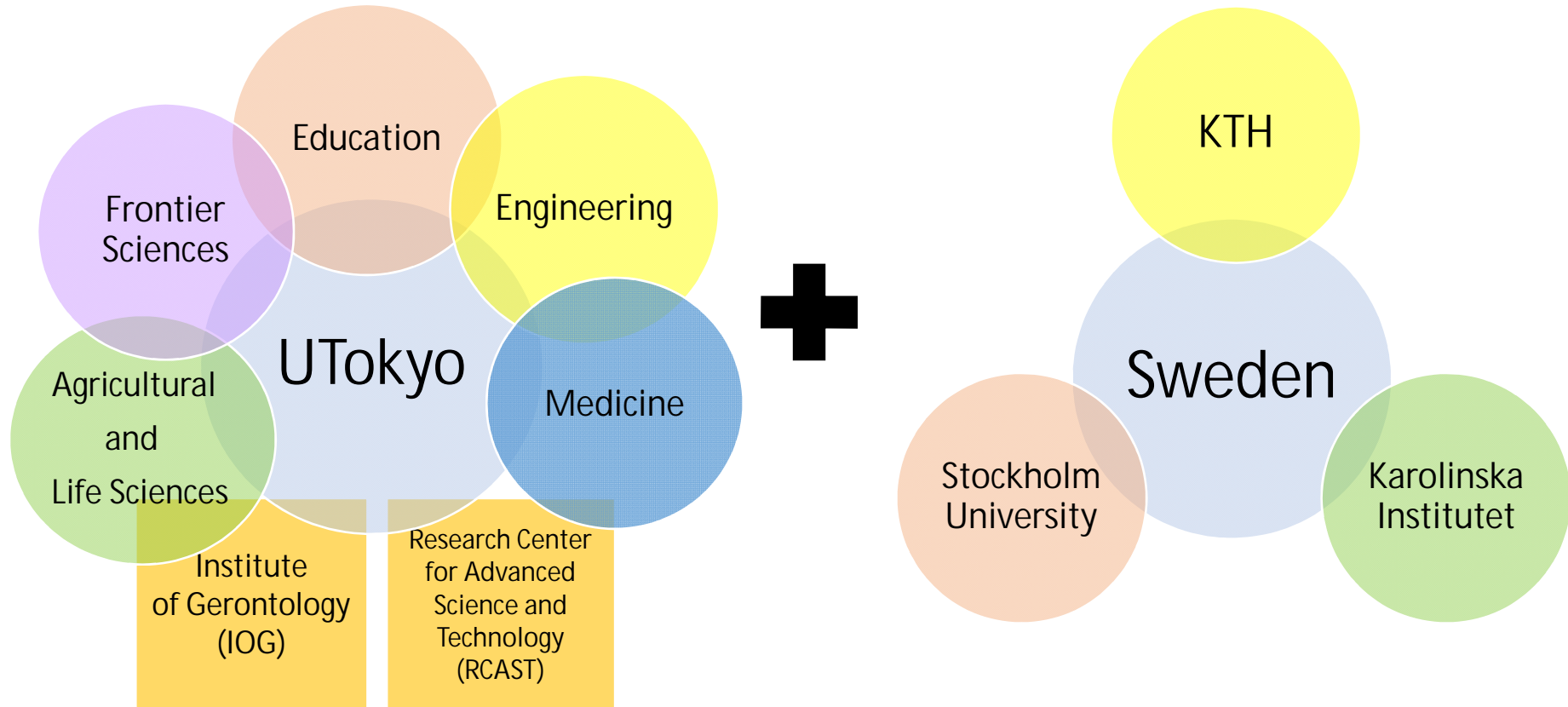
東京大学
THE UNIVERSITY OF TOKYO

UTokyo Strategic Partnership-Sweden

Country-based Partnership with Leading Universities

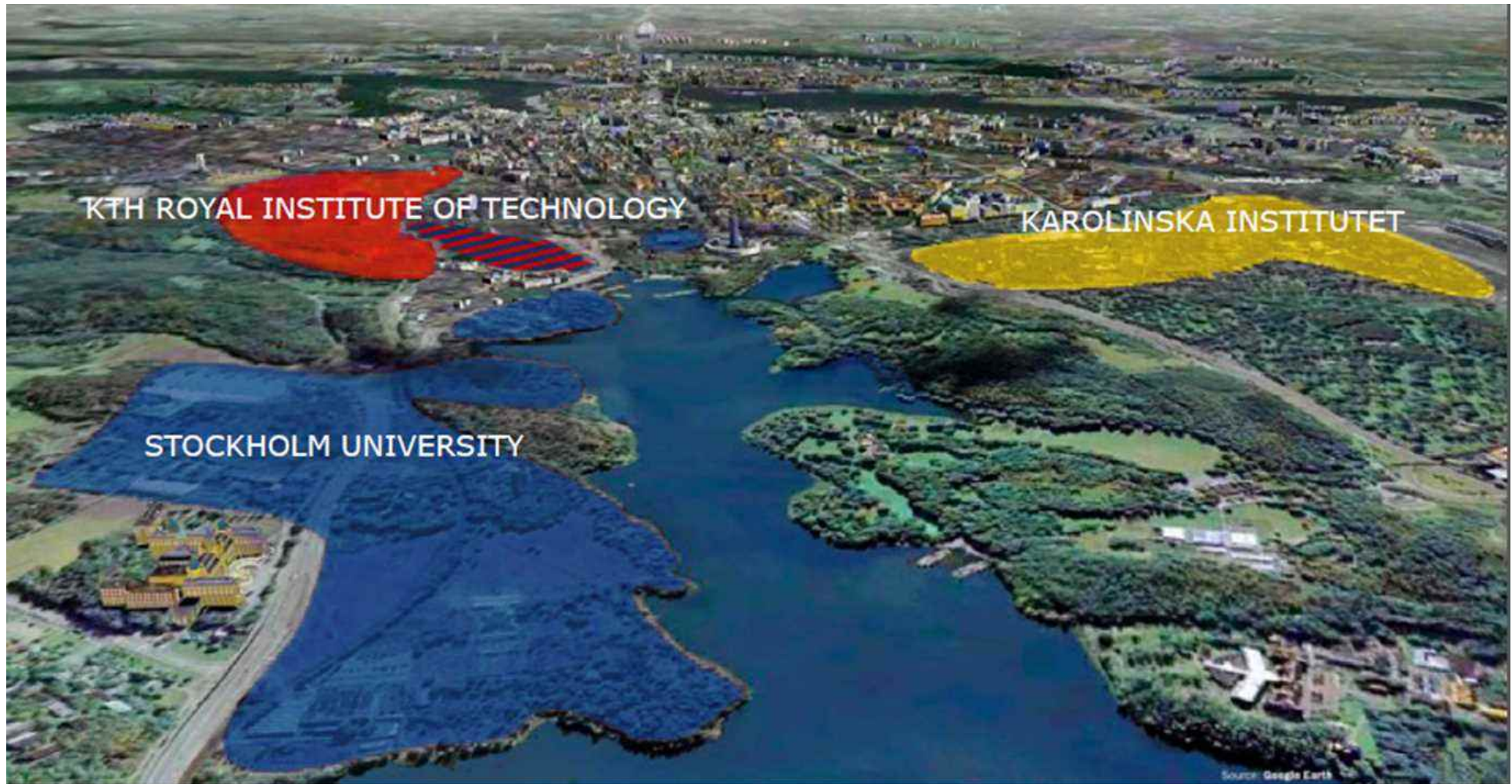


5 graduate schools, 1 institute and 1 center work together in collaboration with the leading universities in Sweden to develop a strategic partnership through research collaborations, education for young researchers, and student exchanges.



Sweden

Partners Complementing Each Other in Stockholm



Stockholm University <http://www.su.se/english/about/events/orientation-week/orientation-day/orientation-day-presentations>

Collaboration in Progress

UTokyo and Sweden

2001	<ul style="list-style-type: none"> • Agreement on Academic Exchange (UTokyo-KTH)
2002	<ul style="list-style-type: none"> • Agreement of Academic Exchange (UTokyo-SU)
2012	<ul style="list-style-type: none"> • Agreement for Student Exchange (Graduate School of Engineering-KTH)
2014	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • 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)

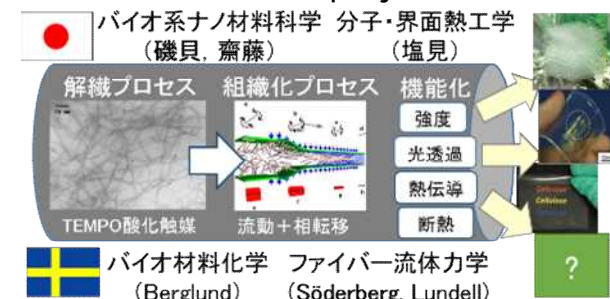
Solar boat project



Lecture exchange



Research projects



Co-author publication

SCIENCE ADVANCES | RESEARCH ARTICLE

FLUID DYNAMICS

Electrostatic cloaking of surface structure for dynamic wetting

Satoshi Nita,¹ Minh Do-Quang,² Jiayu Wang,¹ Yu-Chung Chen,¹ Yuji Suzuki,¹ Gustav Amberg,² Junichiro Shiomi^{1,2,*}

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).

UT students



KTH students



Faculties



Discussions:

- Step1 Confirming/reconsidering the objectives of internationalization.
- STEP 2: Reviewing the past activities
- STEP 3: Generating actions

Sub-Groups



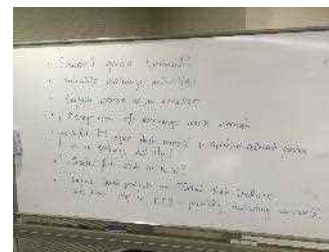
Whole-Groups



Outputs :

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

Action plans



Guide for exchange



Article



Graduate School of Education

Key partner: Stockholm University



Joint International Seminar in Stockholm (2015, 2016, 2017)

- “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

【募集終了】 ストックホルム大学での環境放射能汚染... http://www.agc.a.u-tokyo.ac.jp/wp/stockholm_university_2015/

AGRI-COCOON Food Science
産学官民連携型 農学生命科学研究インキュベータ機構

English / Japanese

Browse: Home / 【募集終了】 ストックホルム大学での環境放射能汚染に関するワークショップ参加学生の募集

CALENDAR

2016年2月
日 月 火 水 木 金 土
1 2 3 4 5 6
7 8 9 10 11 12 13
14 15 16 17 18 19 20
21 22 23 24 25 26 27
28 29
< 1月

2015/9/1~9/6
ストックホルム大学での環境放射能汚染に関するワークショップ
応募が切 5/29 FRI.

Stockholm University

2015/05/29 - by agri-cocoon - in FG6
農における放射線影響フォーラムグループ



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)

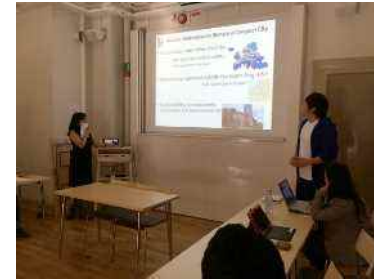
- "GPSS-GLI Developing A New Evaluation Scheme for Sustainability Science Programs in Higher Education"
- Invited a keynote speakers and presenters from SGU-Sweden and the partners in Sweden

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



Global Field Exercise (GFE) Sweden 2016



The 5th GPSS-GLI International Symposium
"Framing in Sustainability Research and Education"

December 2-3, 2016
Kashirwanoha Conference Center

Organized by
Graduate Program in Sustainability Science-Global Leadership Initiative

Co-organized by
Graduate School of Frontier Sciences, The University of Tokyo
Integrated Research System for Sustainability Sciences (IRSS), The University of Tokyo



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



The 3rd UTokyo Strategic Partnership Symposium
17 March 2017



清華大學
Tsinghua University

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

2

- 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

The first stage of strategic partnership

3

1st Joint symposium in March 2016



Discussion in VIP meeting

- Promote strategic partnership relation
 - discuss action plan
 - regular meetings
 - promote inter/multi-disciplinary activities
- 2nd joint symposium at Tsinghua
 - participation of humanities

Materials physics, science and engineering

Eng., Sci. & Frontier Sci., IIS, ISSP, RCAST

Precision engineering

Eng., IIS, RCAST

Satellite meetings

Infrastructure

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

Bioengineering

Eng.

March toward the second stage (1)

4

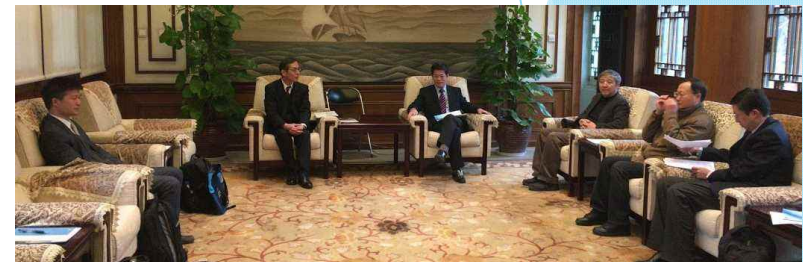
- ▶ Vice president meeting in July @ UTokyo
 - Discuss the bilateral strategic partnership agreement based on the Asian Universities Alliance (AUA)



- ▶ 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



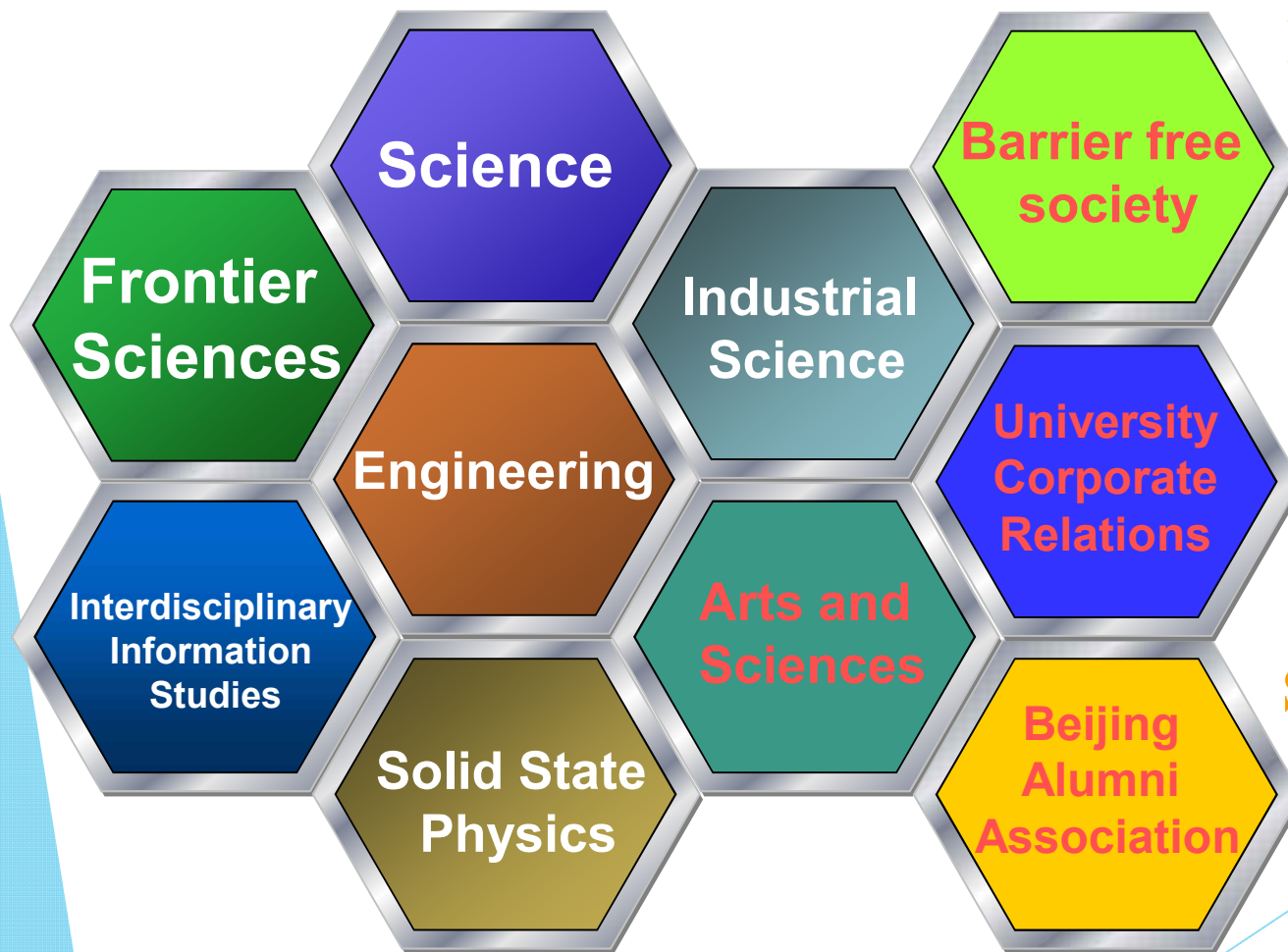
- ▶ Student Workshop in January @ UTokyo
 - Between Grad. Sch. Eng., UTokyo and Shenzhen Grad. Sch., Tsinghua
 - Various fields in Engineering

March toward the second stage (2)

5

**New Participating
School & Institute**

**New
Collaboration**



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

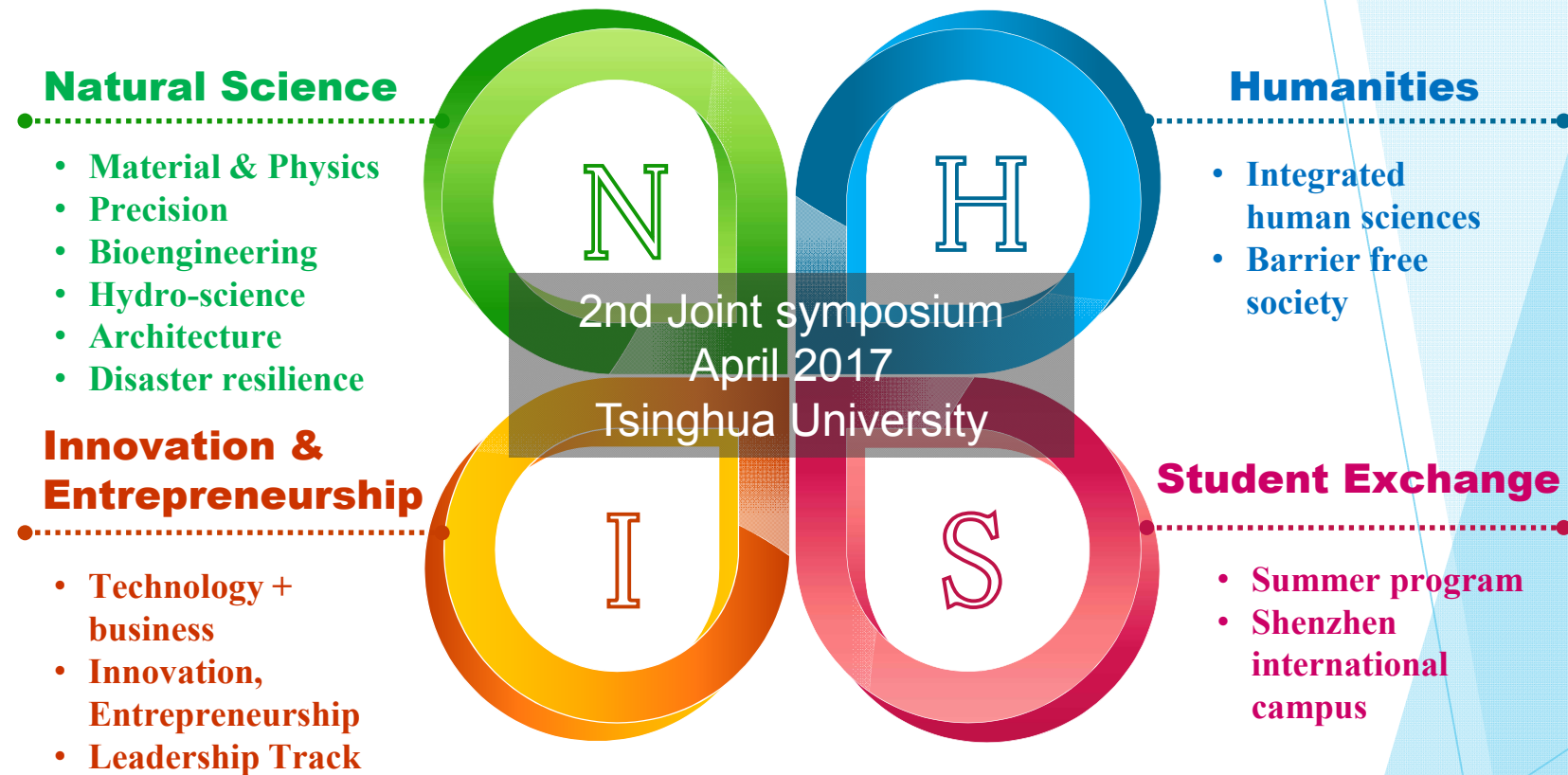
Support from outside

- Sustainable support for bilateral collaboration
- Exit strategy

The participator in 2nd stage

The second stage of strategic partnership (1)

6



- ✓ 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)

7

Student Exchange / Education Program

Student Workshop

- Joint symposium
- Research communication

Short-term exchange

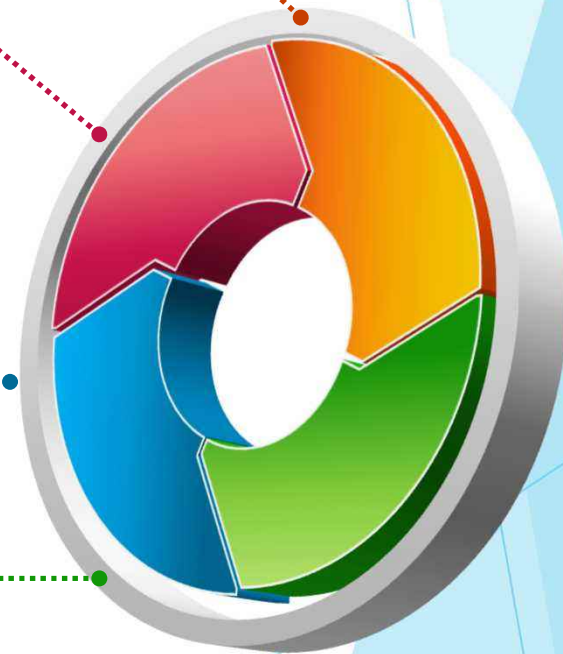
- Joint research workshop
- Laboratory stay

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



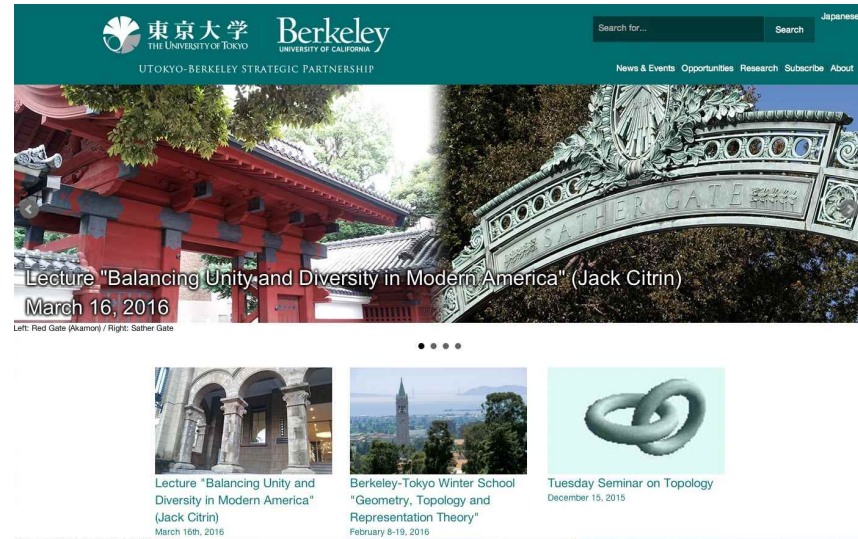
Institute of Social Science is creating networks with UC Berkeley in political science and other fields of social science. Graduate School of Arts and Sciences is collaborating with Center for Japanese Studies, Berkeley in linguistics and other areas in humanities.

Engineering

School of Engineering



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



<http://utokyo.ucberkeley.jp/en/index.html>

Interdisciplinary activities

– Collaboration with Center for Japanese Studies –



The poster features the Center for Japanese Studies logo at the top left, with the text 'Center for Japanese Studies University of California, Berkeley'. To the right is the word 'Colloquium'. Below this, the speaker's name 'TOMOHIRO TACHI' is prominently displayed, followed by 'Assistant Professor, The University of Tokyo'. The logo for 'TOP GLOBAL UNIVERSITY JAPAN' is on the right. The title 'COMPUTATIONALLY DESIGNING ORIGAMI STRUCTURES' is in large green letters. A photograph of a white origami structure is on the left. The date and time 'Wednesday November 16, 2016 5:00 pm' are in the center, with '...' below. The location '250 Sutardja Dai Hall University of California, Berkeley' is at the bottom.



- The colloquium was co-sponsored by Department of Mathematics, UC Berkeley 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
Yoshihisa Saito, Jun'ichi Shiraishi, Yuji Tachikawa
James Tener, Feng Xu

Participants include 10 students from UTokyo.



Vaughan F.R. Jones

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

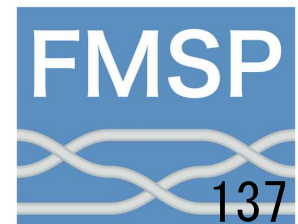
Lecturers :

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



Lecture series in Mathematics



Alan Weinstein
UC Berkeley

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



Arthur Ogus
UC Berkeley

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 Mould (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

Lectures and Seminars in Social Science and Humanities

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

Graduate School of Engineering

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 and Students

Graduate School of Engineering

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

International Research Seminar Graduate School of Education

- “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.

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.

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

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

Strategic Partnership Cambridge-UTokyo



Graduate School of
Pharmaceutical Sciences

Biochemistry,
Genetics,
Molecular
Biology,
Neuroscience,
Chemistry

Cambridge Institute for
Medical Research (CIMR)
Department of Chemistry

Graduate School of Engineering

Engineering

Department of Engineering

Research Center for Advanced
Science and Technology (RCAST)

Interdisciplinary
Studies

Clare Hall

Graduate School of
Mathematical Sciences

Mathematics

Department of
Pure Mathematics &
Mathematical Statistics

Strategic Partnership Cambridge-UTokyo

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

Strategic Partnership Cambridge-UTokyo

Round Table

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



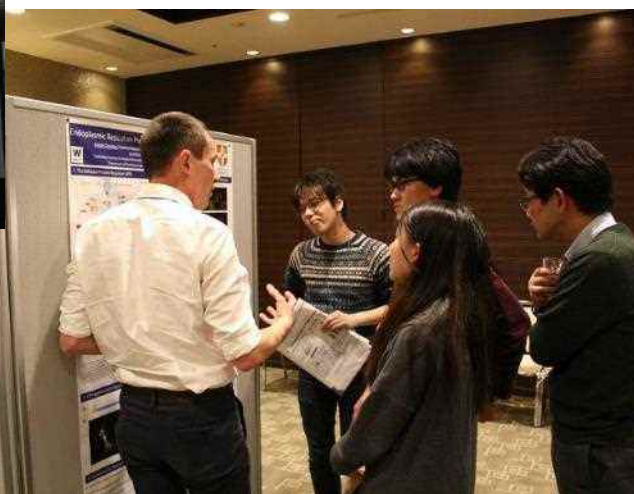
CIMR, Cambridge
—
Graduate School of Pharmaceutical Sciences, UTokyo
Workshop/Retreat program


January 31 – February 2, 2017
Hakone, Kanagawa, Japan



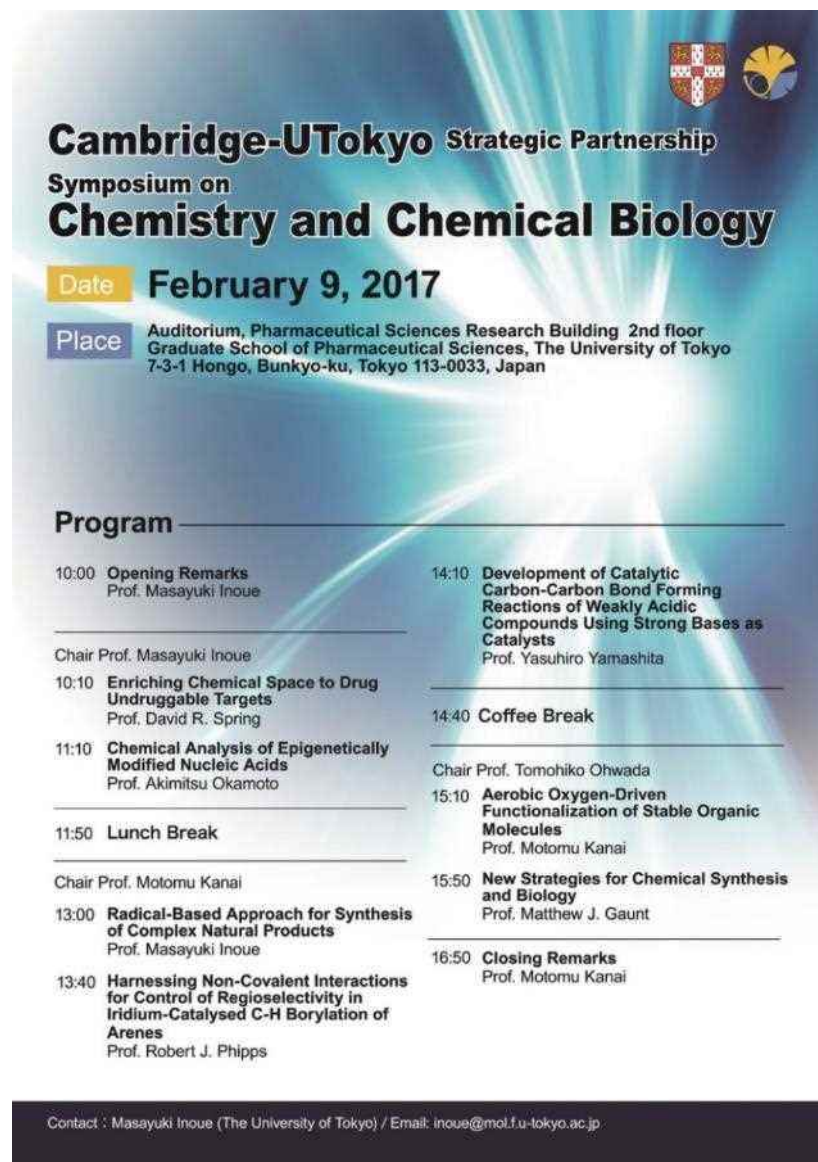
CIMR – Graduate School of Pharmaceutical Sciences Workshop/Retreat on Jan. 31-Feb.2, 2017

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 

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.



Cambridge-UTokyo Strategic Partnership
Symposium on
Chemistry and Chemical Biology

Date February 9, 2017

Place Auditorium, Pharmaceutical Sciences Research Building 2nd floor
Graduate School of Pharmaceutical Sciences, The University of Tokyo
7-3-1 Hongo, Bunkyo-ku, Tokyo 113-0033, Japan

Program

10:00 Opening Remarks Prof. Masayuki Inoue	14:10 Development of Catalytic Carbon-Carbon Bond Forming Reactions of Weakly Acidic Compounds Using Strong Bases as Catalysts Prof. Yasuhiro Yamashita
Chair Prof. Masayuki Inoue	14:40 Coffee Break
10:10 Enriching Chemical Space to Drug Undruggable Targets Prof. David R. Spring	Chair Prof. Tomohiko Ohwada
11:10 Chemical Analysis of Epigenetically Modified Nucleic Acids Prof. Akimitsu Okamoto	15:10 Aerobic Oxygen-Driven Functionalization of Stable Organic Molecules Prof. Motomu Kanai
11:50 Lunch Break	15:50 New Strategies for Chemical Synthesis and Biology Prof. Matthew J. Gaunt
Chair Prof. Motomu Kanai	16:50 Closing Remarks Prof. Motomu Kanai
13:00 Radical-Based Approach for Synthesis of Complex Natural Products Prof. Masayuki Inoue	
13:40 Harnessing Non-Covalent Interactions for Control of Regioselectivity in Iridium-Catalysed C-H Borylation of Arenes Prof. Robert J. Phipps	

Contact : Masayuki Inoue (The University of Tokyo) / Email: inoue@mol.f.u-tokyo.ac.jp

Cambridge-UTokyo Strategic Partnership Symposium on Chemistry and Chemical Biology



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



薬学振興会

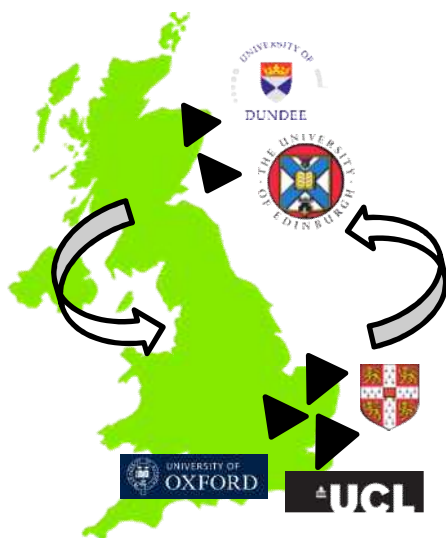
Tokyo Foundation for Pharmaceutical Sciences



- Sep 18-19, 2017
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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

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

Deans' Forum on Engineering



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.



Resilience Engineering Workshop

~Deans Forum Workshop Series No.1~



The University of Tokyo's School of Engineering invites members of the Deans Forum to the 'Resilience Engineering Workshop' to participate in discussions on the development and creation of clear and perceptive insights and practical solutions. We envisage that an interdisciplinary approach – not only in terms of integrated engineering research across departments, but also in working across academic, professional and institutional boundaries – is essential in discovering the appropriate solutions.

Program:

Date: Monday, November 12th, 2012

Venue: Lecture Hall No.15, Building No.1, School of Engineering

10:00-16:10 Presentations from Participating Institutions
16:30-17:30 Discussions
"Future Joint Research on Resilience Engineering"

Presentations:

- Mr. Norishige Morimoto, IBM Research - Tokyo
Nuclear Engineering After Fukushima
- Prof. Joonhong Ahn, University of California, Berkeley
Performance-Based Engineering of Resilient Communities
- Prof. Bozidar Stojadinovic, Swiss Federal Institute of Technology Zurich(ETH)
Network Vulnerability Analysis with Special Reference to Transport Systems
- Prof. Lars-Göran Mattson, KTH Royal Institute of Technology
Systemic Risk in Transportation, Finance, and the Electric Grid
- Prof. Munther Dahleh, Massachusetts Institute of Technology(MIT)
Resilience Engineering at Imperial College London Resilience Assessment of Civil Infrastructure Networks
- Prof. Panagiotis Angeloudis, Imperial College London (ICL)
The Contribution of Organizational Theory to Resilience in Complex Socio-Technical Systems: The Case of Nuclear Decommissioning
- Prof. Christophe Martin, Mines ParisTech
Prof. Franck Guarnieri, Mines Paris Tech
Engineering Synthesis and Management for Huge Complex Systems Safety
- Prof. Shinobu Yoshimura, The University of Tokyo

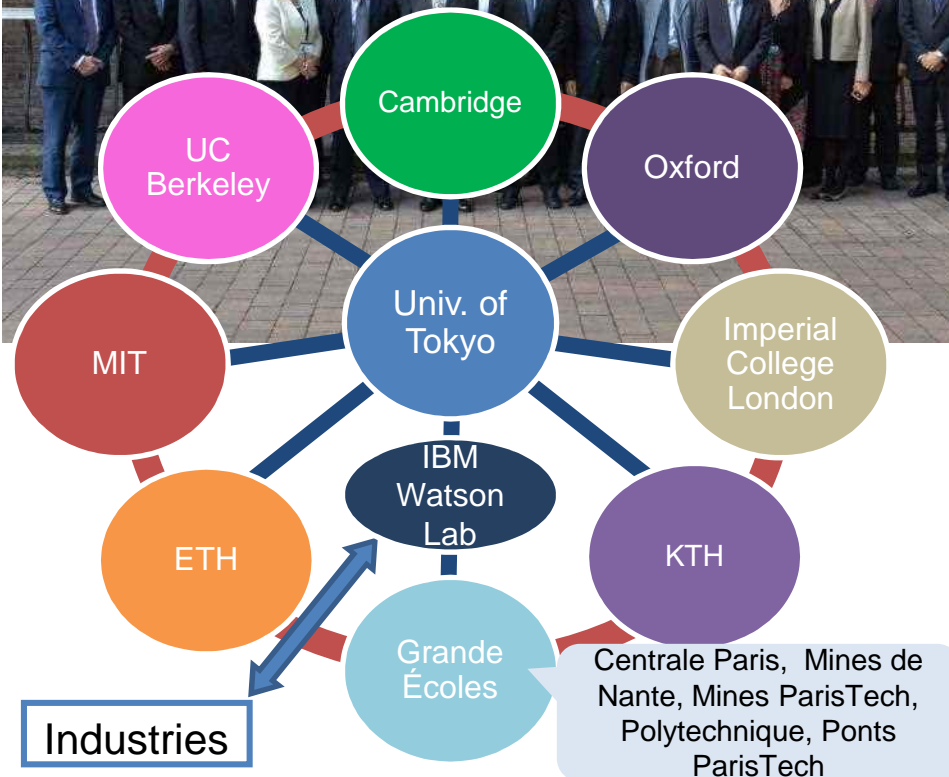
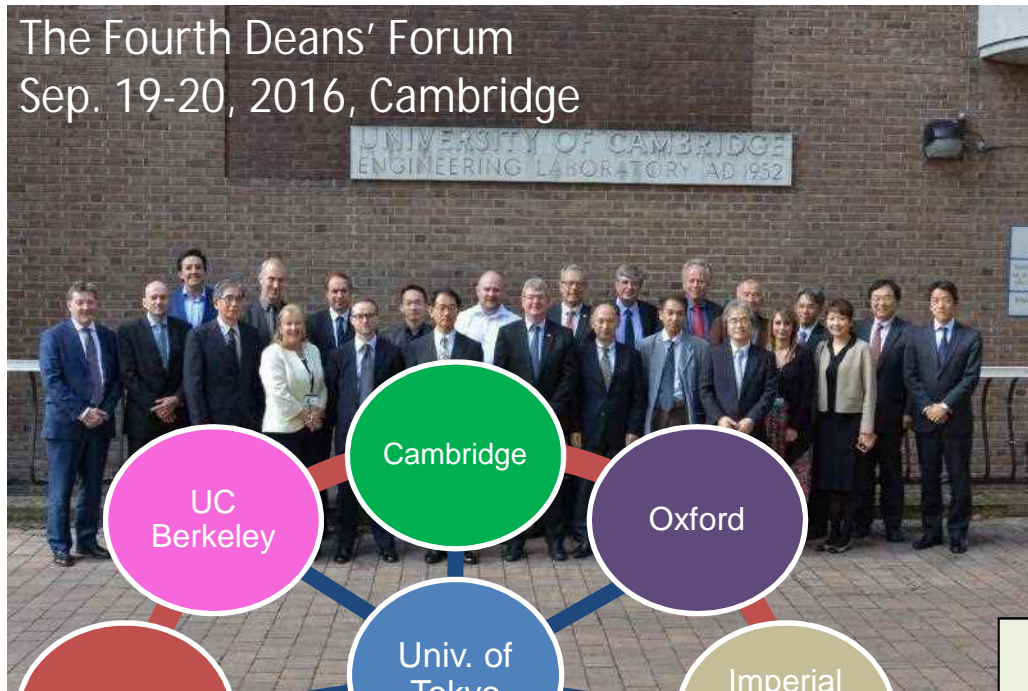
Moderators:

- Prof. Joonhong Ahn, University of California, Berkeley
- Prof. Naoto Bekimura, The University of Tokyo

Deans' Forum Workshop 2012

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.

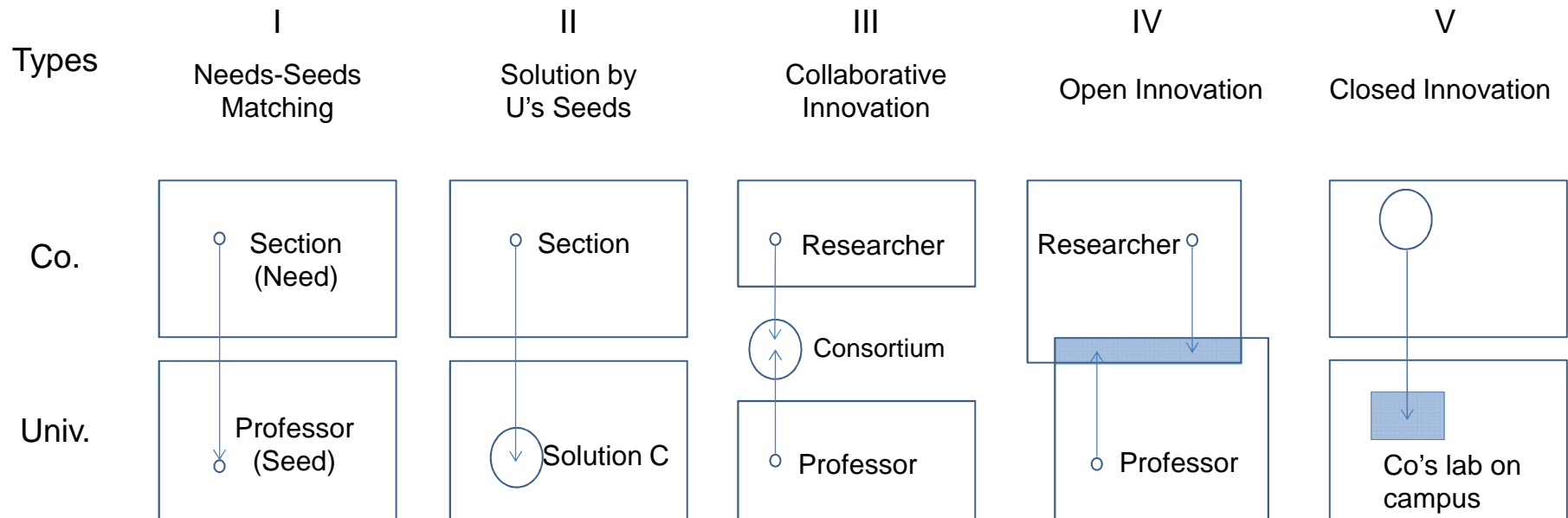
Research Workshops

- Resilience Engineering (2012, 2013, 2015)
- Bio-Inspired Information Technology (2014, 2015)

Organizational Education Collaboration: Intensive Summer Course

- Micro/Nano Fluidics and Bio-Medical Applications (2014, 2015, 2016)

UIC patterns



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 >

Period of Stay	Title of Dispatched VF	Affiliation (Research Field)
Jan-Mar 2017	Professor Izuru Makihara	RCAST (Political Administrative System)

< Visiting Students in Summer >

Affiliation	Sex	Course (Summer School/Exchange)*
Engineering AIS D2	Male	Academic Exchange
Engineering AIS D2	Male	Academic Exchange

* 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.

Academic exchange with University of Cambridge



Graduate School of
MATHEMATICAL SCIENCES
THE UNIVERSITY OF TOKYO



Dairoku Kikuchi



Sir Michael Francis Atiyah



Kunihiko Kodaira

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)
- Ruadháil 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.

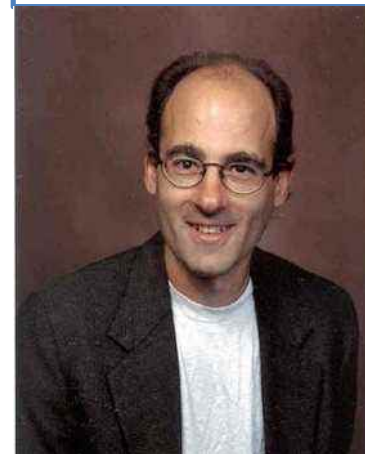
Organizers:

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

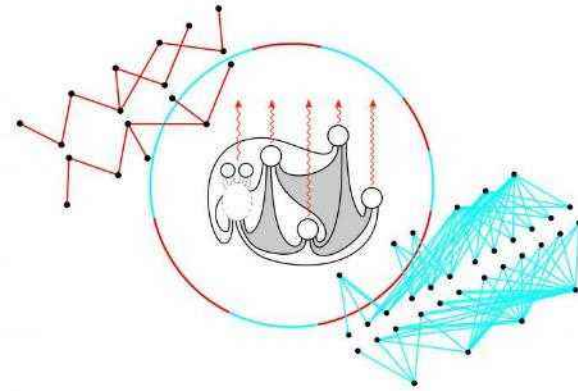
Location:

Seminar Room 1 at Issac Newton Institute for Mathematical Sciences, Cambridge

Lectures by
Professor Ian Grojnowski
March 22, UTokyo



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*)

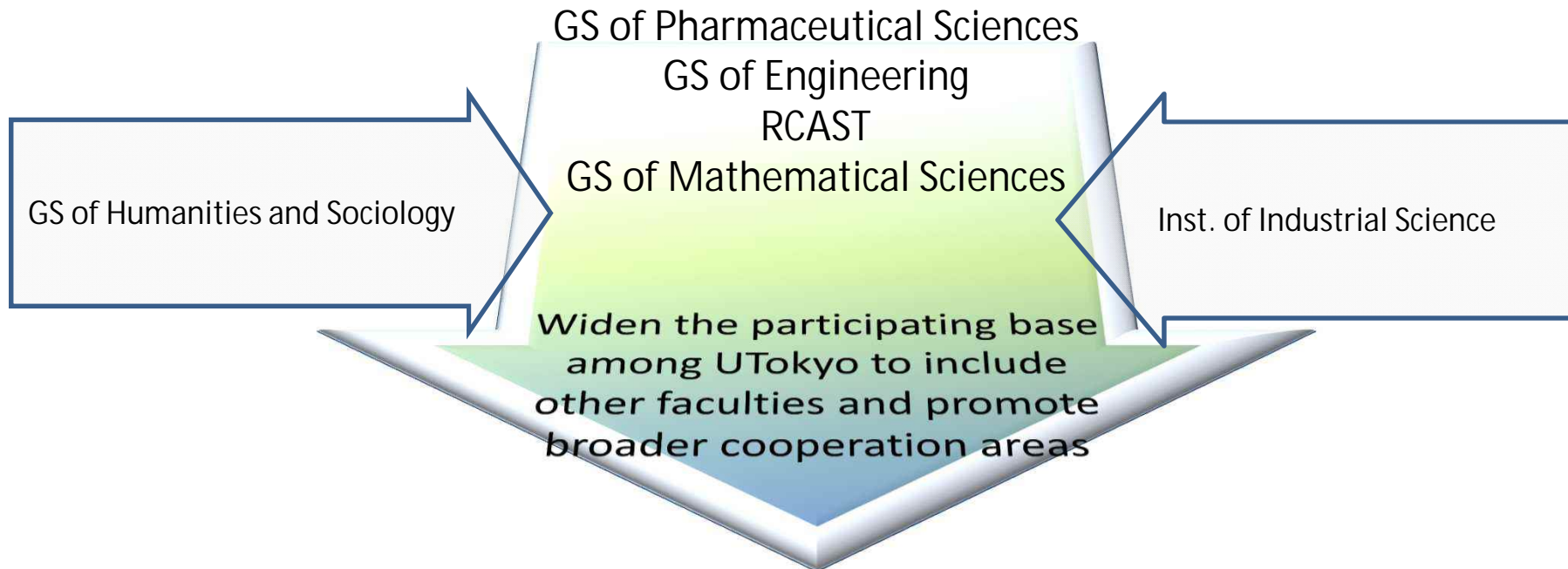
Workshop Theme

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 counterpart parts 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 .

Compiled and Published by:

Division of International Affairs, The University of Tokyo

Websites:

English <http://www.u-tokyo.ac.jp/en/academics/sp-uni.html>

Japanese <http://www.u-tokyo.ac.jp/res02/sp-uni.html>

All the information on this report is dated March 17, 2017.

