

2017 GMSI - GSDM SUMMER CAMP

7/28 (FRI) – 31 (MON)
@ THE UNIVERSITY OF TOKYO
& HERITAGE RESORTS, SAITAMA



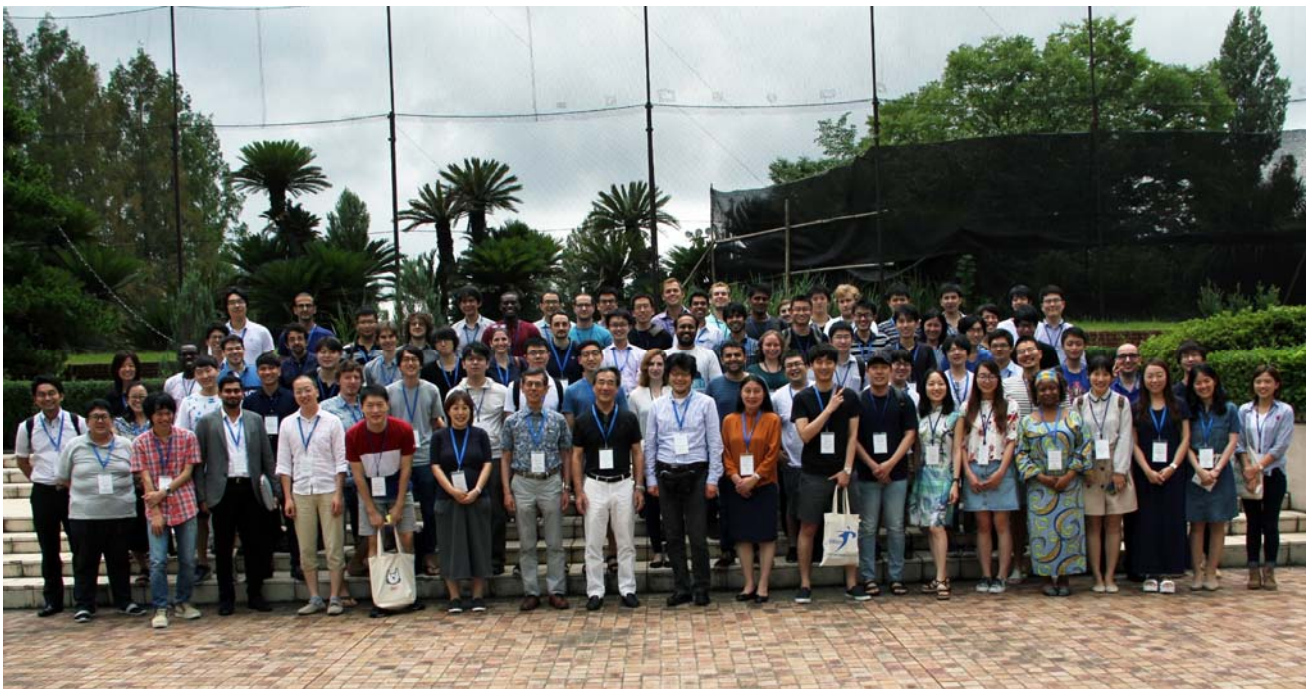
SUPPORTED BY
THE UNIVERSITY OF TOKYO
GRADUATE PROGRAM FOR MECHANICAL SYSTEMS INNOVATION
GLOBAL LEADER PROGRAM
FOR SOCIAL DESIGN AND MANAGEMENT



Participants



67 Participants from a variety of academic fields representing
23 universities of **15** countries and **2** companies.
Steering: 3 Lecturers and 17 staffs from 5 universities



Peking University	Chemistry and Molecular Engineering	1
Tsinghua University	Optical Engineering	1
Tsinghua University	Materials Science and Engineering	1
KAIST (Korea Advanced Institute of Science and Technology)	Industrial and Systems Engineering	1
Seoul National University	Mechanical and Aerospace Engineering	1
Nanyang Technological University	Physics and Applied Physics (Fluid Dynamics)	1
Indian Institute of Technology Delhi	Material Science and Engineering	1
Columbia University	Electrical Engineering	1
Massachusetts Institute of Technology	Mechanical Engineering	1
Rice University	Applied Physics	1
Stanford University	Mechanical Engineering	1
The University of Texas at Austin	Mechanical Engineering	1
University of California, Berkeley	Mechanical System Control	1
University of Toronto	Materials Science and Engineering	1
University of São Paulo	Mechatronic Engineering	1
KTH (Royal Institute of Technology)	Mechanical Engineering	1
Technical University of Munich	Mechanical Engineering	1
ETH Zurich (Swiss Federal Institute of Technology)	Biotechnology	1
Scuola Superiore Sant'Anna	Biomedical Engineering	1
Aalto University	Engineering Physics	1
Imperial College London	Aeronautics	1
University of Oxford	Materials science	1
University of Abomey-Calavi	Computer Science	1
The University of Tokyo	Mechanical Engineering	28
	Precision Engineering	3
	Aeronautics and Astronautics	5
	Systems Innovation	2
	Civil Engineering	1
	Chemical System Engineering	1
	Public Policy	1
	Electrical Electronics and Information systems	1
Information & Communication Engineering	1	
Toshiba Corporation	Corporate R&D Center	1
Hitachi, Ltd.,	Research and Development Group	1

Schedule

	7 am	8	9	10	11	12	1 pm	2	3	4	5	6	7	8	9
Fri. July 28	Reg.			Lectures		Lunc!	UT lab tour		Travel to C		Self-Introduction		Dinner		
Sat. July 29	Bre: fas	Opening	Technical Session		Team meeting	Lunc!	Team meeting					Dinner	Team meeting (Optional)		
Sun. July 30	Bre: fas	Team meeting				Lunc!	Final Presentation			Photo			Award Ceremony & Banquet		
Mo. July 31	Bre: fas		Bus trans.		Museum tour		Lunc!	Bus transfer	Company v		Closing	Return to Tokyo			

→ The Railway Museum, JR Research Center

Venue: UTokyo, Shinrin-Koen Heritage Resorts



Opening session at UTokyo



Shinrin-Koen Heritage Resorts

<https://photos.app.goo.gl/mIKhswmP4z3RBy4I2>

Address:

Prof. Watanabe



Introduction:

Prof. Yokono



Lectures:

Prof. Koashi



Mr. Kato



Prof. Shiomi



Address:

Prof. Maruyama **Prof. Shiroyama**



UT Lab tour

Course A: Fluids / Space system
Takagi–Kinefuchi Lab.

Nakasuka–Funase Lab.

Course B Micro-nano and Optics

Maruyama-Chiashi Lab.

Gonokami-Yumoto-Ideguchi Lab.

Course C: Agro-industrial system-Recycling-Zeolite

Fujita.Dodbiba Lab.

Ohkubo-Wakihara Lab.



5

Task is to **propose an innovative device for the Japanese society** related to <Energy, Environment, Healthcare, Information Technology, Infrastructure> and propose an **international research project to demonstrate the proof of concept or to accelerate the innovation process.**

Presentation template

- ✓ Survey
- ✓ Problem identification
- ✓ Proposal
- ✓ Organization
- ✓ Budget
- ✓ Potential impact

Problem identification

- Describe social and technical backgrounds. (e.g. statistical data, public statements, journal papers, etc.)
- Identify the problem.
- Discuss why the Japanese society needs to cope with the problems.

Idea of Novel Product/Service

- Propose a novel product or service
- Clarify its originality in comparison to existing products/service
- Clarify why the proposed product/service would be well accepted by the Japanese society

- 10 teams (6-7 participants/team) were organized in advance.
- Each of 2 teams had 1 researcher from industry.
- Proposal “for the Japanese society” so that shy Japanese students could be involved in the discussion.

6



Team Meetings



Team Meetings





Comments given to each team

Criteria	Points
innovation, and potential impact	/ 5 points
background survey, technical soundness, feasibility, and project management	/ 5 points
Teamwork & presentation	/ 5 points

Team 1 (Underwater Resource Exploration)

It was excellent that...

- Idea was unique.
- Technical details were discussed.
- Large potential impact.

Becomes better if you improve...

- ✓ Better time planning.
- ✓ Control system can be further optimized



Awards for
2 Best Presentation
Best Proposal



Winners of best proposal (Team1)



	Did you enjoy the camp?	Lectures	Lab tour in UT	Grouping and Topic selection	Technical session	Team meeting	Final presentations	Company lab tour	Location	Meals	Accommodation	Organization
All (2017)	4.4	4.0	4.1	4.1	4.0	4.4	4.5	4.2	4.1	3.5	4.0	4.4
All (2016)	4.5	3.9	4.2		4.0		4.3	3.8	3.5	3.5	3.8	4.3
Invited from universities	4.5	4.3	4.2	4.3	4.3	4.4	4.4	4.1	4.4	3.7	4.0	4.6
UT (non-Japanese)	4.5	4.2	4.2	4.2	3.9	4.6	4.6	4.6	4.2	3.5	4.3	4.5
UT (Japanese)	4.2	3.2	3.7	3.9	3.8	4.2	4.3	3.8	3.7	3.5	3.6	4.1
Invited from companies	4.5	3.5	3.5	4.5	5.0	4.5	5.0	5.0	3.0	2.5	4.0	4.0

- Basically, most of the participants enjoyed the camp very much.
- Scores vary depending on the affiliation.
- Japanese students are less pleased ?
- Meals are needed to consider.

In which areas did you find the camp beneficial?

	Improving brainstorming /discussion skills	Obtaining valuable teamwork/leadership experience	Expanding my knowledge of other engineering fields	Developing an international network of friends/colleagues	Widening the scope of my research
N. (N=67)	42	40	31	48	14
Ratio 2017	<u>64%</u>	<u>61%</u>	<u>47%</u>	<u>73%</u>	<u>21%</u>
2016	<u>55%</u>	<u>67%</u>	<u>39%</u>	<u>68%</u>	<u>26%</u>

- The camp surely enhanced the “competency” of the participants.
- International network shows best.

Invited Students

- ❖ It would be better if there is some more time especially for a free talk with professors and the staff together. After all, it's a good experience and I do enjoy the time.
- ❖ Thank you for providing me with a good opportunity. I think that observing Tokyo Univ. more is also good for visitors from overseas. Actually, I want to know history and research achievement of Tokyo Univ. more. It would be better to use a separated room for each group. (Reason: sound, crowd..)
- ❖ I am happy to attend summer camp. I hope to attend again. Thank you !
- ❖ The team final presentations can be improved. A two day "hackathon" can be organized which will help the students actually build or construct something rather than simply finding a problem. The Lab tour was excellent and it broadened the horizon. Some more tech talks can be looked into. good job, keep it up. Best wishes.
- ❖ The last day could be better used on the project.
- ❖ The lab tour was not very organized and over crowded, causing the time to be spent inefficiently. It is better to allow girls/boys to room with people that speak their language. Otherwise, one person is left not understanding what the other 2 people are saying. More feed back from professors would be appreciated ! Thank you for this opportunity !
- ❖ What's the point of a visit to a railway museum ? This is absolutely useless. Please maximize use of attendee's time. In general food is good. Lack of attraction after hours. This is a absolutely valuable chance to mingle with other ph.D 1 master students around the world.

Invited Students

- ❖ One more day to work on project would be beneficial. More technical lectures. More free time with other students to form relationships. More free time in Tokyo to lean/see Japanese society. Longer Q/A session for final presentations. UT were great hosts.
- ❖ For the team project, please provide wider selection of scopes, and it will be excellent if some examples from previous years' summer camp proposals are provided. In that way, we will have a better understanding of what outcome, what level, is expected from the teamwork and discussion.
- ❖ This was an incredible experience. I was very impressed with the schedule of this international project and I would definitely recommend it to anyone who has a chance to participate. Some possible ways to improve the experience would include: Longer technical session that would allow a greater insight into the work caused by the participants. Invited talks from industrial participants.
- ❖ I had some problems to find the Forest Hongo hotel, leaving from the Hongo-Sanchome station. The map that was provided was in Japanese and I was unable to identify the name of the streets. Maybe the organization could provide more information concerning this, including some other pictures. I also had problems to find room number 213, Eng. Bldg. No.2. The room where we've taken lunch on that day has the same number. Maybe some pictures, or a simple map, could improve this aspect. Beside those issues, the camp was great, and really enjoyable. Congratulations for the initiative and thank you for the invitation.

15

Invited Students

- ❖ Maybe it would be better to provide each person with a room key.
- ❖ The camp was great ! I really profited from the discussions in the team meetings. Additionally, the discussions in the Onsen about the different countries were really worthful.
- ❖ This summer camp was a great opportunity for me and I would like to thank the organizers.
- ❖ Nothing to say about the scientific value of the camp. Just a very small suggestion, please provide simple water alongside tea and other beverages. As most European people use to drinking water as their main drink.
- ❖ The help from the team coordinator was minimum. I think they should be trained equally to participate in building and guiding the students.
- ❖ Break time after Lunch are too small (sometimes no break time). Maybe if these could a 30-40 min for rest after lunch, it will be good. Because generally after Lunch, we can feel sleeping so may need to go to restrooms. By the way, thank you for the organization.

16

UT (non-Japanese)

- ❖ The amount of free time was nice. It would have been good to have a key for each guest at the hotel to avoid confusion.
- ❖ Visiting museum will not give anything to the student (like PhD's and researchs), and it's better to spend those time more discussion with researchers in the company. Time was very short for group meetings to come up ideas and do complete survey and implement and it will be good if you can increase little bit more. It is very good experience we can increase both leadership skills time management and project management and how to come up with new ideas in a short time.
- ❖ Perhaps extending the summer camp to a five day event with extended brainstorming and longer presentation time. I felt some groups didn't have enough time to present a design for their brainstorm session. I would have liked to see this kind of design. But it was great and fun, and set new ideas. It so was very enjoyable and I felt I could learn a lot and also teach others of my research. Thank you.
- ❖ It would be better if we have more free time in the museums. And the cold food for the last meal at noon was a little unacceptable...But I really enjoyed this experience. Thank you so much !!!
- ❖ I really enjoyed this summer camp. I think it's well organized and provide us a great chance to make friends and learn from each other. In addition, the team meeting part enable us to improve our brain storm skills as well as teamwork spirit. I think this summer camp is a valuable experience to me. I hope more students can attend such kind of summer camp. Thank you !

17

UT (non-Japanese)

- ❖ Foods were cold (Rice Miso-soup came at the last minute of the meal time), Banquet fee was a little bit expensive (relatively compared to food/drink served).
- ❖ The instructions for the group project could have been better explained. It was nor entirely clear what the organizers wanted the groups to provide them with. In one day, it is very difficult for the groups to narrow down a legitimate problem in Japanese society, and then come up with a technically feasible and commercially sensible idea. Having more targeted topics would have likely been better, for example, if specific Japanese problems had been suggested, it would have been easier for the participants to come up with engineering solutions in the allotted time.
- ❖ I think restricting the problems Japan have into 1 problem could have made our fine management more effective and ideas better. Also first day of the camp, 1 more activity for the group members to get to know each other would be better.
- ❖ I should be thankful for your great efforts. For me as a student in UT, it was great experience in terms of being more familiar with "How different International groups work", "and different international member ways of thinking". Specially visiting R&D JR was really interesting for me. Again Big thanks for all your efforts.
- ❖ It was such a a valuable experience ! I have been satisfied on the summer camp from all perspective. From the traditional Japanese Accommodation to the enough length of schedule to make friends from around the world.

18

UT (non-Japanese)

- ❖ I hope that the group could be divided more properly that let more people who do similar research in the same team. In fact in our team we wanted to make our project more expert. But 4 of us from field similar which relating many physics and chemistry knowledge. Other people are having little knowledge about this field so they can hardly give some good ideas about the project.
- ❖ I think it would be better to select more general engineering topic for the initial technical lectures. Please allocate more time for the team meeting in order to ease the pressure on the attendees.
- ❖ I think it would better if in groups we work on solving more concrete problems of industry. If we have just areas like energy, infrastructure and so on, it is hard to find a problem by ourselves. We don't really know which problems society and industry have and want to solve. We spend a lot of time on searching problem and we are not sure if that problem we found is not solved yet and if it is important enough. It would be much more effective if you provide us a list of problems from industry, then we can solve it by our technologies, make ideas, which could be used after the camp.
- ❖ In place of choosing different topics, we can work on preselected topic. Thus giving more beautiful results. Please provide two keys for a room.
- ❖ Additional meals would help reduce hunger during long team meetings. Hotel amenities were mostly adequate. Two keys for each hotel room would have been more convenient. Finally, please increase time frame or decrease budget of proposal to make planning more feasible.

19

UT (non-Japanese)

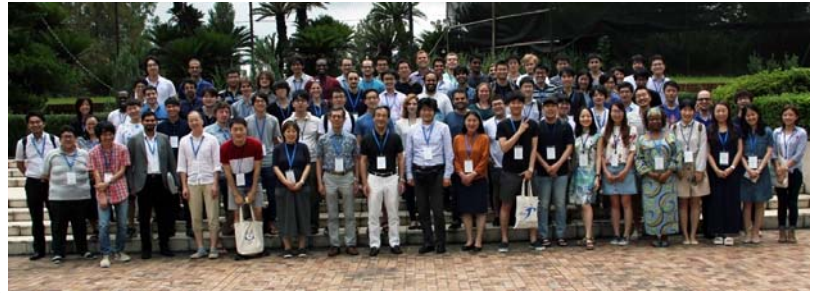
- ❖ The camp was useful to experience viewpoints of people from different countries. I strongly think usage of cellphones must be prohibited during company tours.
- ❖ More foods can be provided for the meal.
- ❖ It was good chance to experience lots of foreign students from various country, and also knowing their research fields.

UT (Japanese)

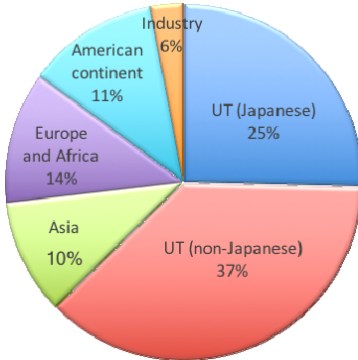
- ❖ The period is too long. There are a lot of spare time in Hotel Heritage, company tour, or museum. Some students are quite busy in their research or project, so it would be better to try to minimize the number of days (e.g. three days).
- ❖ The review of the each team's idea by professors should be earlier (e.g. 13:00-14:00) before we start making presentation slides.
- ❖ チームミーティング問題設定が少し難しい,厳しかったのでもう少しゆるくなると色々なアイデアが出るかもしれません
- ❖ I think when the team meeting of the start, Dr leader should lead the discussion.
- ❖ It would have been even better if we had chance to hear some stories about R&D of new devices.
- ❖ A lot of fun to have a discussion with other students from other countries.
- ❖ It was variable experience that discussing with members various technical & cultural background. Thank you. (company member)
- ❖ We can't use the free service like google drive by information security policy of company. So it is helpful for me that you provide us another way to share the data and presentation document. (company member)

20

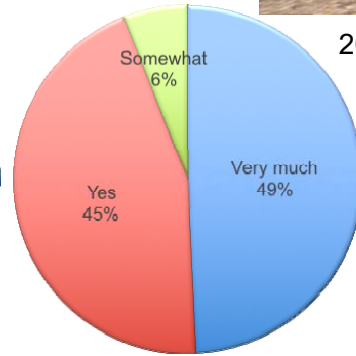
- UTokyo and world-leading universities
Ph.D students discuss and exchange ideas
- propose international research project of innovative device for the Japanese society
- 67 Participants from 23 universities of 15 countries & 2 companies



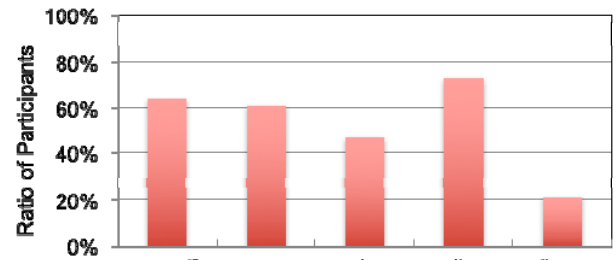
2017 Venue: UTokyo and Shinrin-koen Heritage Resorts



▲ Participants



▲ Satisfaction



▲ Which areas beneficial

	7 am	8	9	10	11	12	1 pm	2	3	4	5	6	7	8	9
Fri. July 28			Reg.	Lectures		Lunch	UT lab tour			Travel to Camp		Self-Introduction	Dance		
Sat. July 29	Break fast		Opening	Technical Session	Team meeting	Lunch	Team meeting				Dance	Team meeting (Optional)			
Sun. July 30	Break fast		Team meeting			Lunch	Final Presentation			Photo		Award Ceremony & Banquet			
Mon. July 31	Break fast		Bus transfer		Museum tour	Lunch		Company visit		Closing	Return to Tokyo				

◀ Schedule of Summer Camp