

UK-JAPAN YOUNG SCIENTIST WORKSHOP PROGRAMME THE 2014 CAMBRIDGE & TOHOKU WORKSHOPS REPORT

UK-Japan Young Scientist Workshops were hosted at Cambridge University and subsequently with different students at Tohoku University in Japan in the summer of 2014

A total of 98 post-16 students (54 girls, 44 boys) from both countries took part in 17 projects organised by scientists and engineers in both universities



Cambridge 2014 following Celebratory Dinner at Trinity College on the last day

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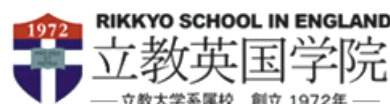
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The Kaetsu Centre



1 BOTH WORKSHOPS

1.1 In both Workshops students from schools in Britain and Japan worked in small UK-Japan teams with wide range of scientists and engineers from the University of Cambridge and Tohoku University respectively. The students were introduced to the scientists'/engineers' field of work and were given a related challenge which required them to work as teams and to think for themselves. In "toe-dipping" the world of cutting edge research and application, they not only put school knowledge to real life use, but also were enabled to see themselves and their futures in a new global context. and also to form new international bonds of friendship. The projects were devised by the scientists and engineers with advice from Clifton Scientific Trust and also with staff from the lead Japanese schools, namely the Kyoto University of Education attached Senior High School, Fukushima High School and the Rikkyo School in England.

1.2 Small groups of 16 - 18 year old students from a range of different schools took part. These students were selected by their schools and judged to be likely to gain most from the Workshop experience. The schools commonly selected their students through an in-school structured application process, and in the cases where the same school was involved in both Workshops, different students took part in each. Almost all the participating UK students came from state schools, some serving disadvantaged communities. Each student group was accompanied by a teacher who observed, but did not take part in, the science programme. As well as supporting the programme, the teachers undertook full responsibility for their own students. They also shared good classroom practice in science teaching, especially through the Teachers' Forums organised as part of the programme, and in taking back to their own schools something the Workshop experience.

1.3 As well as working with schools in Kyoto for the past ten years, from 2011 the Trust has been able to invite each year schools serving communities affected by the Great East Japan Earthquake and Tsunami of 2011 to be its guests in the Cambridge Workshops, meeting their expenses from funds donated from many sources, and particularly from Rolls-Royce plc and Barclays Bank. 2014 was the first UK-Japan Young Scientist Workshop to be hosted at Tohoku University.

1.4 A summary of the objectives of the UK-Japan Young Scientist Workshop programme is attached ([Attachment 1](#))

2 CAMBRIDGE WORKSHOP

2.1 COMPONENTS

a PRE-WORKSHOP FOR JAPANESE STUDENTS, RIKKYO SCHOOL IN ENGLAND

17 July to 20 July (#2.3)

b UK-JAPAN YOUNG SCIENTISTS WORKSHOP, CAMBRIDGE UNIVERSITY

20 July to 26 July 2014 (#2.4-#2.7)

2.2 SCHOOLS & STUDENTS A total of 40 senior high school/sixth form students of whom 22 were girls and 18 were boys from 5 schools in England (20 students), and 5 Japanese schools (20 students) from the following schools took part. 6 UK teachers and 6 Japanese teachers accompanied their students. The schools represented were

Colston Girls' School, Bristol
County Upper School, Bury St Edmunds
Harrow High School
St Mary Redcliffe & Temple School Bristol
Thomas Hardy Academy, Dorchester
Wycombe Abbey School

Kyoto Prefectural Momoyama SHS
Kyoto Prefectural Rakuhoku SHS
Kyoto Univ of Education attached SHS
Rikkyo School in England
Ritsumeikan Moriyama SHS

2.3 PREWORKSHOP PROGRAMME FOR VISITING JAPANESE STUDENTS

As in previously years the Japanese party arrived a few days in advance of the Workshop proper for a programme of visits in London, enabling them to gain a broader introduction to England and to give them space to overcome jetlag. They stayed in accommodation provided by the Rikkyo School in England, located south of Guildford, and followed a programme organised by the school in association with the Trust, including visits to the Royal Society (Rupert Baker, Librarian), the Royal Institution (Professor Frank James) and UCL (Professor Shinichi Ohnuma).

2014 UK-Japan Young Scientist Pre-Workshop Timetable with Rikkyo School in England

| 2014 | Breakfast 7.30-8.30 | Morning session | Lunch | Afternoon session | Supper | Evening |
|----------------|----------------------------------|--|--|---|--|--|
| Thu July 17 | | Arrive at Heathrow T3 TK1979 10:05 | Lunch at Godalming | Explore Godalming, Surrey 16:00 pick up | At Rikkyo | Sports Activity |
| Fri July 18 | Breakfast 7:00 Dining Hall | Leave to London 08:00 University College London Gower Street Prof. Shinichi Ohnuma 11:00 | Lunch at Piccadilly Circus/ Leicester Square 12:30-14:30 | 15:00-16:00 Royal Society Rupert Baker Librarian Guided Tour 16:30-17:30 Royal Institution Prof. Frank James | Supper at Piccadilly Circus/ Leicester Square 1800-19:50 | Leave London 20:00 Piccadilly Est. arrival time at Rikkyo 22:00 |
| Sat July 19 | Breakfast 7:30 Dining Hall | Leave to London 08:30 Natural History Museum 10:30-12:00 | Lunch At British Museum | British Museum 14:00-16:00 After 16:30 free time London Bridge/Tower Bridge | Supper at London Bridge/ Tower Bridge | Leave London 20:30 Tower Bridge Est arrival time at Rikkyo 22:00 |
| Sun July 20 | Breakfast 7:30 Dining Hall | Tour South England Guildford | Lunch At Guildford | 14:00 Leave to Cambridge Est arrival time in Cambridge 16:30 | supper in Cambridge | Follow the workshop schedule |

2.4 CAMBRIDGE UNIVERSITY WORKSHOP PROGRAMME

The overall programme in Cambridge was as follows.

| 2014 | breakfast 8.00-9.00 Murray Edwards | morning session 9.15- | lunch (with project) | afternoon session ends approx 16.30-17.00 | dinner 18.00- 19.00 Murray Edwards | evening 19.00-22.30 <u>Kaetsu</u> Centre Conference Room available from 18.30 We have the room free of charge on condition we clear up the room for use next day at the end of evening |
|----------------|---|---|-------------------------|---|--|--|
| Sun July 20 | participants arrive ~4pm at Murray Edwards College dinner in College 18.00, followed by meeting up in <u>Kaetsu</u> Centre Conference Room | | | | | |
| Mon July 21 | B | Welcome and Orientation (<u>Kaetsu</u> Lecture Theatre) | L | Projects | D | Let's Communicate in Japanese (led by students from Japan) |
| Tue July 22 | B | Projects | L | Projects | D | Gift Exchange and Cultural Evening |
| Wed July 23 | B | Projects | L | Projects (Teachers Forum <u>Kaetsu</u> Lecture Theatre) | D | Outdoor Games (informal relaxation) |
| Thu July 24 | B | Whole Workshop Presentations | Visits in Cambridge | | D | |
| Fri July 25 | B | Presentation Preparation | L | Team Presentations (13.00 <u>Kaetsu</u> Lecture Theatre) | Workshop Dinner (19.00 Trinity College) | |
| Sat July 26 | B | Depart after breakfast | | | | |

2.5 SCIENCE PROGRAMME During the week, the students worked in 7 UK-Japanese teams with the following Cambridge University scientists and engineers, and at the end of the week they

gave team presentations of their achievements and answered questions in front of an audience including invited guests.

Each team was accompanied by a volunteer facilitator, a fluent Japanese speaker to support the Japanese students and ensure they fully understood and were engaged in their project. The project teams and their leaders were as follows. Further information of team membership is given in the programme of the final day of student team presentations, attached (**Attachment 2**), which includes the final Workshop Dinner hosted at Trinity College at which Martin Rees, Lord Rees of Ludlow also spoke.

- a Jelly in the Belly; Hydrogels in Drug Delivery Systems**
with Dr Oren Scherman, Ms Setu Kasera, Ms Rebecca Forster
Melville Laboratory of Polymer Synthesis, Department of Chemistry
- b Observations of Cell Division in Fruit Fly Cultured Cells and Larval Brains**
with Dr Yuu Kimata, Dr Francesco Meghini, Ms Gitte Warnack,
Cell Cycle Development Group, Department of Genetics
- c From Molten Metal to Breaking Materials; an Introduction to Materials Science**
with Dr Catherine Rae, Mr Robbie Bennet, Ms Caroline Goddard
Department of Materials Science and Metallurgy
- d Environmental Radiation and Nuclear Energy**
with Prof Wade Allison,
Physics Department, Oxford University (hosted at Homerton College)
- e Sensors in Engineering**
with Ms Heba Bevan, Prof Kenichi Soga
Engineering Department, Univ Cambridge
- f Whittle Laboratory Compressor Blade Design Project**
with Prof Rob Miller, Dr Cesare Hill, Dr Sam Grimshaw, Dr Richard
Jefferson-Loveday, Max Hewlin-Smith
Whittle Laboratory, Engineering Department
- g Science Communication**
with Ms Hannah Critchlow,
The Naked Scientist Team



The Powerpoint presentations which the student teams presented are available. The Science Communication Team interviewed the scientists and students taking part in all other teams and the podcast they produced is also available.

2.6 TEACHERS' FORUM

The Teachers' Forum provided an afternoon during which teachers shared and discussed ideas and experiences which enliven science education in both countries. Throughout the presentations given by Mrs Sue Jones (Wycombe Abbey), Mr Masohiro Kato (Momoyama SHS), Mr Andy Richmond (Thomas Hardye) and Mr Miki Okamoto (Kyoto University of Education attached SHS), which encompassed issues related to engineering projects suitable for year 7 students, science related "fun" activities, enabling students to develop roles in teams, and nuclear issues, the aim was to understand key differences and key similarities between science teaching opportunities in English and Japanese schools and to explore ways in which British and Japanese teachers can help each other. We felt that we had only scratched the surface of these issues and there was great potential for the discussion to continue.



2.7 THE WIDER PROGRAMME

Accommodation and meals for students and teachers was provided in Murray Edwards College and the Kaetsu Centre which is located in the Murray Edwards Campus. As far as possible students from the two countries shared rooms. Teachers' rooms were located among the students' rooms. The social programme was an important part of the Workshop experience. Throughout the Workshop, every opportunity was taken to enable the students from Britain and Japan to deepen their awareness of each other's culture, way of life, and ways of doing things, to develop their communication skills (including in the other's language) and to form lasting friendships.

This was in addition to the need for them to learn through the Science Programme to listen and question, to think both scientifically and creatively and work in as a member of a team.

In the Wider Programme, this happens by purposely arranging for students from both countries to share rooms, by inviting students and teachers representing different schools to make short speeches of thanks, at the beginning of the Workshop on the Sunday evening and at the Welcome/Orientation session on the Monday morning, of expectation, and at the end of the Workshop at the end of the Student Team Presentations on the Friday afternoon, and at the Workshop Dinner in the evening, of reflection.

The Welcome Session which started the Workshop included speeches from students Masato Shukawa from Kyoto Prefectural Momoyama Senior High School and William Curwen from County Upper School Bury St Edmunds, and from teachers Ms Chizu Goto (photo) from Kyoto University of Education attached SHS and Mrs Mary-Grace Browning from County Upper School. Following a welcome from Dr Eric Albone, Clifton Scientific Trust, Mr Peter Roberts-Taira, Director, the Kaetsu Centre, and Professor Toshio Nomura of Nomura Dimensions, Dr Marie Buda (Cambridge University Behavioural and



Clinical Neuroscience Institute and Downing College gave a presentation on Science in Cambridge and the opportunities the Workshop is opening to young scientists. She was followed by Professor Shin-ichi Ohnuma (UCL and Cambridge) who placed this in the context of the evolving relationship between Britain and Japan.



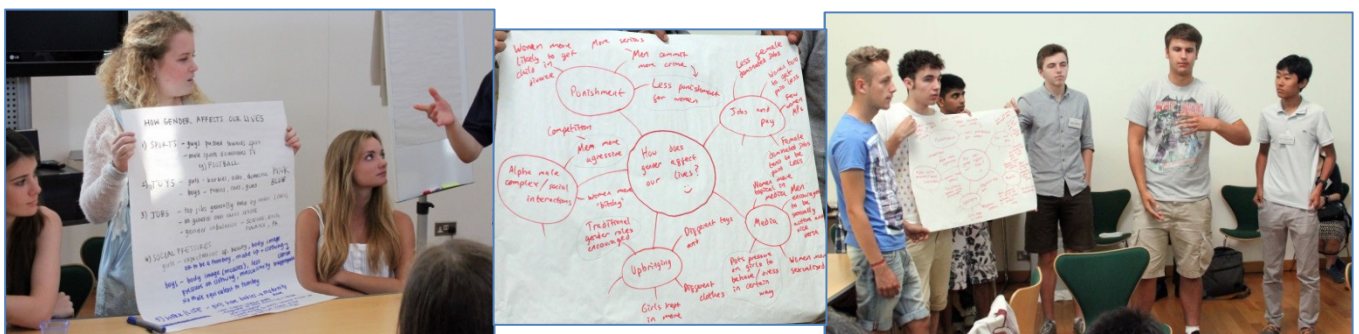
The evening programme in the Kaetsu Centre also provided further opportunities. On the **Monday** evening, Japanese students organised a “Let’s Communicate in Japanese” programme which followed up with an experience of calligraphy.

On the **Tuesday** evening, Gift Exchange and Cultural Evening, when school groups put on short entertainments for the whole Workshop

On the **Wednesday** evening, an evening of informal sports activities



Thursday morning was given over to a structured whole group discussion of **How Gender affects our Lives**, initially with the genders and the different countries discussing in four separate groups, and then coming together to explore how the various perceptions differed or were similar.



The remainder of Thursday was spent as free time in Cambridge. As part of this, special bookings were made for group punting on the Cam, as well as a special visit to Kings College and its Chapel.

Kushal Ramji



The **Friday** afternoon Student Team Presentations in the Kaetsu Centre followed by the celebratory Workshop Dinner in Trinity College is attached ([Attachment 2](#)).



Lord Rees of Ludlow



Kushal Ramji, Harrow High School

3 TOHOKU WORKSHOP

3.1 COMPONENTS

- a PRE-WORKSHOP BRIEFING WEEKEND AT THE RIKKYO SCHOOL IN ENGLAND**
for UK students and teachers travelling to Japan
13 July to 15 July (#3.3)
- b PRE-WORKSHOP FOR UK STUDENTS IN TOKYO, RIKKYO IKEBUKURO SCHOOL**
31 July to 3 August (#3.4)
- c TOHOKU UK-JAPAN YOUNG SCIENTISTS WORKSHOP**
3 August to 10 August (#3.5-#3.9)
- d POST WORKSHOP STUDENT PRESENTATIONS, BRITISH EMBASSY & HEAD OFFICE BARCLAYS JAPAN**
11 August (#3.10)

3.2 SCHOOLS & STUDENTS A total of 58 senior high school/sixth form students of whom 32 were girls and 26 were boys from 7 schools in England (26 students, including 3 from the Rikkyo School in England) and 15 Japanese schools (32 students) took part. 9 UK teachers and 31 Japanese teachers were involved as observers and supporters. The schools represented were

Aizu Gakuho HS, Fukushima
Asaka HS, Fukushima
Furukawa Reimei HS, Miyagi
Iwaki HS, Fukushima
Sendai First HS, Miyagi
Soma HS, Fukushima

Aizu HS, Fukushima
Fukushima HS, Fukushima
Hachinohe North HS, Aomori
Kamaishi HS, Iwate
Sendai Second HS, Miyagi

County Upper School, Bury St Edmunds
Hinchley Wood School, Esher
Rikkyo School in England
Seven Kings High School, Ilford
St Mary Redcliffe & Temple School Bristol
Thomas Hardy Academy, Dorchester
UCL Academy, London

3.3 PRE-WORKSHOP BRIEFING WEEKEND IN ENGLAND FOR UK STUDENTS & TEACHERS TRAVELLING TO JAPAN

This residential Briefing Weekend for the UK team was hosted at the Rikkyo School in England and ran from dinner Friday 13 July to after lunch Sunday 15 July, and was provided free of charge, thanks in particular to the generosity of the Japan Society. The programme was led by Mrs Mary-Grace Browning (County Upper School Bury St Edmunds) in close collaboration with Dr Toru Okano (Deputy Head, the Rikkyo School in England). It was supported by Rikkyo School students, who added greatly to the Pre-Workshop by their input, which included “2014 UK-Japan Young Scientist Workshop, How to Live in Japan”, an excellent 39 page booklet they had produced and which they presented to each member of the UK team travelling to Japan.



All but one of the UK students and teachers were able to attend. While providing an opportunity for the students and teachers from the diverse range of UK schools involved to get to know each other in advance of their arrival in Japan, the programme prepared them in such areas as Japanese language and culture, awareness of important cultural differences and sensitivities, practicalities related to the climate, etiquette, food, how much pocket money to take, form filling, as well as advice how to make good presentations and speak to best effect in public, something all the students would have to do. 2014 was the first year such a Briefing Weekend had been attempted and it was judged to have been a tremendous success.

The Pre-Workshop was greatly enhanced by the presentations of our special guests, Christopher and Phillida Purvis on the Friday evening, and on the Sunday by Professor Roger Cashmore FRS, formerly Principal of Brasenose College Oxford, and currently Chairman of the UK Atomic Energy Authority who very effectively “thought” the students through the scientific and social realities which underpin any real appreciation of the consequences of the Fukushima Nuclear Power Plant disaster of March 2011.



Left to right, Professor Roger Cashmore with students, Mrs Phillida Purvis; Mr Christopher Purvis

3.4 PRE-WORKSHOP PROGRAMME FOR UK PARTY IN TOKYO

An introduction to Japan and to Tokyo organised by the Rikkyo Ikebukuro School. Immediately on arrival in Tokyo Haneda Airport on the morning of **Friday 31 July** and after checking in at the Pearl Hotel Kayabacho, the UK students and teachers spent the rest of the day exploring the city from the heights of **SkyTree**, and, in the evening, at street level among the nearby temples of **Asakusa**.



Saturday was spent visiting the wonderful and very imaginative **Miraikan Science Museum**. This included a specially organised laboratory tour meeting the Keio University scientists and engineers working in robotics in the projected virtual hands telexistence programme of the **Haptic Media Project**, which is on site. The “**Toilet; Human Waste and Earth’s Future**” special exhibition at Miraikan attracted a lot of comment in its frank discussion of issues often avoided. The evening was spent among the lights of **Odaiba**, the artificial island in Tokyo Bay. **Sunday** was free time in which the school groups set off on their own explorations, such for example as among the museums and displays of Ueno Park. Monday we took the bullet train to Koriyama to meet up with the Japanese students with whom we would work in Tohoku University.

3.5 TOHOKU UK-JAPAN YOUNG SCIENTIST WORKSHOP - TRAVELLING TOGETHER TO TOHOKU UNIVERSITY

Sunday 03 August Bullet train to Koriyama Station to meet Tohoku students and teachers, followed by coach travel to the **Aizu Gakuho High School** for the Workshop Opening Ceremony and Lunch. In the afternoon we visited the nearby site of the **Old Observatory**, where two Aizu Senior High School students, performed a spirited historical sketch they had written “**The History of Nisshinkan; the Spirit of Aizu**” which celebrated the emergence of education in Japan after the turmoil of the 1860s. Following a short visit to **Tsuruga Castle**, we travelled to **Mount Bandai Eruption Museum** (presentation) and on to Urabandai Rising Sun Hotel for a further demonstration and talk on volcanism; cultural exchange and further school introductions.

Monday 04 August Bus to **Mt Azuma Kofuji** and on to **Tsuchiyu hot springs** with a visit to a site exploiting geothermal energy. Then onward travel to **Montana Resort Hotel, Iwanuma**, Cultural Exchange & Gift Exchange

3.6 TOHOKU UK-JAPAN YOUNG SCIENTIST WORKSHOP PROGRAMME

Accommodation and Meals were provided for the British and Japanese students and teachers for the duration of the Workshop in Sendai (5th to 10 August) at Montana Resort Hotel, Iwanuma, a short coach journey from Tohoku University.

Tuesday 05 August; Opening Ceremony at Tohoku University.



On behalf of the UK side, Dr Albone presented inscribed Bristol Blue Glass goblets to Professor Hiroshi Kanai, Dean of Engineering, Tohoku University and Mr Takayuki Nakano, Vice-Principal, Fukushima High School. Tamanna Ahad (Seven Kings HS) spoke representing the UK students.

Professor Kanai gave a presentation on the research activities of the Tohoku University Engineering Group. Following introductions, and orientation, student joined their project groups.

Returning to the hotel, the evening was given over to cultural exchange, including calligraphy. It was greatly appreciated that a number of Japanese students who at the Cambridge Workshops in previous years, and now at Tohoku University were also present.



Wednesday 06 August Tohoku University- Projects and Teachers' Forum (#3.8), return to hotel for Cultural Exchange. Dr Makoto

Yonezawa from Tohoku University Library led a session on Wasan, the mathematics which developed in Japan in the Edo period.

Thursday 07 August Tohoku University – Projects and Preparation for Student Team Presentations, return to hotel in evening to finalise presentations

Friday 08 August Bus to Iwanuma coast to visit sites re 2011 tsunami damage and recovery– Millennium Hope Hill, Yuriage Coast. Shiogama Coast, then by boat to Matsushima, depart train to Sendai. Sendai City visit and meal, the Tanabata Festival is in progress, train to Iwanuma Station and bus to Hotel.



Remembering the victims of the 2011 tsunami and earthquake on Millennium Hope Hill

Saturday 09 August Tohoku University; Preparation (am) and Public Student Team Presentation followed by Workshop Dinner

Sunday 10 August; End of Workshop, some Japanese students and teachers accompany UK party by bullet train to Tokyo; stay at National Olympics Memorial Youth Centre

3.7 SCIENCE TEAMS The students worked in 10 UK-Japanese teams with the following Tohoku University scientists and engineers, and at the end of the week gave team presentations of their achievements in front of an invited audience. The teachers were invited to observe but not take part in the projects. The teams and their leaders were:-

a Logic and Communication, with Prof Yuko Murakami, Graduate School of Arts and Letters, Tohoku University, exploring logic and communication in science and in law focusing on a number of case studies

b Disaster Science, with Prof Suppasri Anawat International Research Institute for Disaster Science, Tohoku University, exploring alternative evacuation procedures in the event of a future tsunami focussing on a specific location (Matsushima) using the actual 2011 tsunami inundation map.



c Experiencing the Nano-World with the Atomic Force Microscope, with Prof Ken Nakajima, Advanced Institute for Materials Research, Tohoku University, using atomic force microscopy to study individual fibres of several polymeric materials including DNA and to measure their strengths

d Seeing Nanostructures with FE-Scanning Electron Microscope with Prof Yasufumi Nakamichi, Advanced Institute for Materials Research, Tohoku University, using scanning electron microscopy on materials such as abalone shell to consider the relationship between structures and properties of materials

e Measuring the Cadmium Content of Arabidopsis Plants with Prof Tomonubo Kusano, Institute of Biosciences, Tohoku University, exploring the relationship between the cadmium content of wild-type Arabidopsis plants using atomic absorption spectrometry and the genetics of cadmium tolerance.

f UVB Induced DNA Damage and its Repair Mechanism using Light with Prof Jun Hidema, Institute of Biosciences, Tohoku University, exploring DNA damage caused by ultraviolet light and its repair mechanism using visible light.

g Symbiosis and the Nitrogen Cycle with Prof Kiwamu Minamisawa, Institute of Biosciences, Tohoku University, using gas chromatography to explore how the nitrogen fixing endosymbiotic soil bacteria associated with leguminous plants (rhizobia) can be used to mitigate the production of nitrous oxide, a major greenhouse gas, from soils

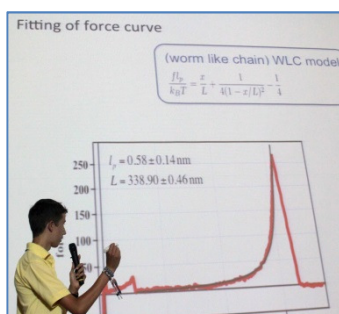
h Using Personal Genome Analyses to Discuss Human Diversity with Prof Takeshi Obayashi, Graduate School of Information Sciences, Tohoku University, exploring data revealing the geographical spread of particular genomic sequences which influence particular human traits and discussing why human beings should have such sequence variations.

i How do we evaluate “water problem”? with Prof Satoshi Kazama, Graduate School of Engineering, Tohoku University, exploring complex relationships of multifaceted water-related problems (flood, drought, environmental) with such factors as human activity and ecosystem characteristics, and the priority of countermeasures to mitigate against these problems.

j Building an Automatic Translation System with Prof Kentaro Inui, Graduate School of Information Sciences, Tohoku University, prototyping an automatic English-Japanese/ Japanese-English translation system based on state of the art Statistical Machine Translation Method, and exploring how the system automatically learns translation rules from bilingual parallel texts.



The Student Team Presentations about to begin



3.8 TEACHERS' FORUM

The Teachers' Forum comprised presentations and discussions on

- Active Learning and Student Involvement, by Mr Hiroyuki Takano, Fukushima SHS
 - Teaching Science in a British Secondary School by Ms Elizabeth Murdock, Seven Kings HS, Science Education in Fukushima HS, by Dr Kiyonari Hashidzume
 - Level Chemistry, by Mr Patrick Youmans, St Mary Redcliffe and Temple School, Bristol
 - Physics in Fun, by Mr Alexander Bishop, Hinchley Wood School, Esher,
- followed by a sharing of text books, lesson plans and teaching materials between the two sides.



Top, right to left; Ms Elizabeth Murdock, Mrs Mary-Grace Browning, Mr Hiroyuki Takano, with two of his slides.
Bottom right, Mr Patrick Yeomans discussing English science teaching material with Dr Hashidzume

3.9 THE WIDER PROGRAMME

Although science and its application are at the core of the Workshops, this links closely with the broader educational value the Workshops confer on the participants, through living and working in teams with students coming from a very different cultural heritage. As in Cambridge (#2.7) this is amplified by having British and Japanese students sharing rooms and by asking each school to organise an entertainment/make a presentation for the benefit of the whole group. This is done during the evenings throughout the Workshop.

3.10 PRESENTATIONS IN TOKYO FOLLOWING THE WORKSHOP

The Workshop was privileged to be invited to give two presentations in Tokyo on the day before the British party returned to England. Sadly it was not possible for all the Japanese students to be present at these events.

Barclays Presentation Barclays Bank generously invited the Workshop to a magnificent luncheon at their Tokyo Head Office in Roppongi Hills Mori Tower, where we were welcomed by Mr Tetsuya Kodama (below), Managing Director and Vice-Chairman Japan. A number of British and Japanese students gave presentations summarising outcomes of the Tohoku Workshop.



Celebration of Ten Years of UK-Japan Young Scientist Achievement at the British Embassy; Ambassador Tim Hitchens welcomed guests, many of whom represented organisations who had supported the Workshop Programme in Japan over the years, as well as others who were interested to learn about it. It was particularly good to have present Mr Tetsuro Takada who teaches at the Kyoto University of Education attached SHS, and with whom we have worked since 2004 with the Kyoto Workshops, and to hear his former student, Ms Mariko Takahara, say how much the Workshop experience has meant for her. She took part in the 2008 Workshop at Surrey University (with the circadian rhythms and jet lag team) as a first year Senior High School student, and now researches in Biochemistry at Kyoto University.

The programme for the evening is attached, (Attachment 3), as also is an article “Inspired Minds; How Science helps create Global Leaders” reporting on this event which appeared as the Top Story in the September issue of “Acumen” (British Chamber of Commerce in Japan) (Attachment 4). Such was the interest in the British Embassy event that the resulting pressure on space meant that very unfortunately a number of the UK team were not able to be attend.



Top, right to left; Ambassador Tim Hitchens, British and Japanese students from Tohoku Workshop with on far right Professor Masao Watanabe, Tohoku University- Ms Mariko Takahara

4.0 BOTH WORKSHOPS- OUTCOMES

The Workshops have clearly had a massive impact on the students, in opening their eyes to a wider world of opportunity, in giving context to their school science, in building self-confidence and in enabling them to grow as people. This in a very short period of time, perhaps because it is a such a short period, and it is self-evident to guests who attended any of the student presentations, as for example the writer of the Acumen article (Attachment 4).

All students and teachers were given feedback forms to complete and the evidence received is extremely positive. The Kyoto schools have compiled an 80 page report in Japanese including accounts of the science they undertook in Cambridge and including two pages of reflection (one in English, the other in Japanese) per student on his or her own experience. Here I add just one quotation from an independently minded Japanese student.

“Why can’t we speak English although we have taken English for many years!? We can’t! To use English is the only way to master speaking English. The second thing I learned was how to study science. There are many talented Japanese scientists but there are only a few

Japanese who have played an active role in the world. Why? I think Japanese people have only the ability to study in Japanese. That makes no sense! I learnt how to study in English. We have to learn how to express our opinion to the world in English. I learned that aspect and also how to express my opinion about science. Third I learned a way of living. Whether in Japan or in England, we live with a lot of help, and we have to help others. I have known that for a long time, but I have never felt that acutely. If there had been no help, I couldn't have had such a helpful time."

As part of the feedback, one of the UK students in the Tohoku Workshop wrote;

"I think it was extremely important to have a team presentation as it gave us an opportunity to work as a group, reflect on what we have learnt from our professors and develop our presentation skills. I also feel that it was great to see the work that the other students had done in their workshops and to be able to see what they did different or even similar to us; this ensured us that we would not be missing out on any of the science we all had learnt!"

One teacher wrote of the students who went to Tohoku

"Yes – they are more confident and are still reflecting on their amazing experiences, sharing with their friends and families what they learned. They all gave whole school assemblies and this developed their confidence further. It has helped raise their profile in the school. Other students want to talk to them, teachers stop them & praise them for the work they did and ask them about it."

There is much such feedback material which has yet to be analysed.



A particularly significant outcome of the teacher presence in the UK-Japan Young Scientist Workshop programme has been "Think Global" a UK-Japan Forum on International Perspectives in Education, <http://thinkglobalukjapan.edublogs.org>. The First Forum will consist on a series of one day events hosted in Fukushima, Kyoto and Tokyo in late August 2015. The aim is to enable teachers from the two countries to exchange grass-roots ideas and experience about how to encourage and develop a global ethos among teachers and students; this includes science but extends across the curriculum. The first 2015 Forum will be UK-led, with experienced UK teachers working with Japanese teachers. This takes forward very much the Cambridge and Tohoku Teacher Forums reported here (#2.6 and #3.8).