

# Top Global University Project (Type A) Tohoku University

## 1. Outline

### Title

Tohoku University Global Initiative

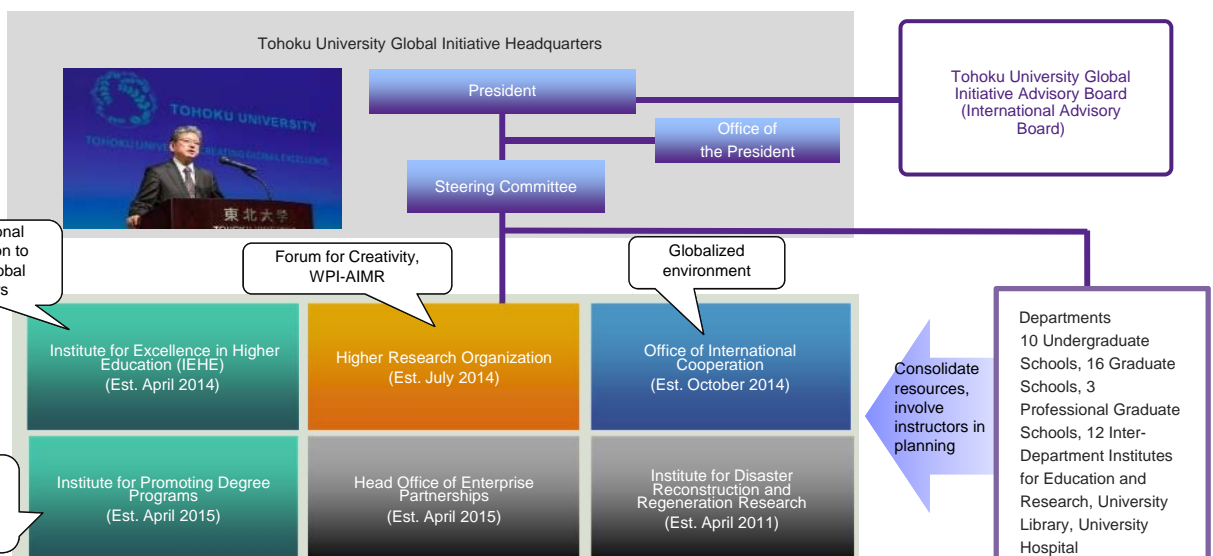
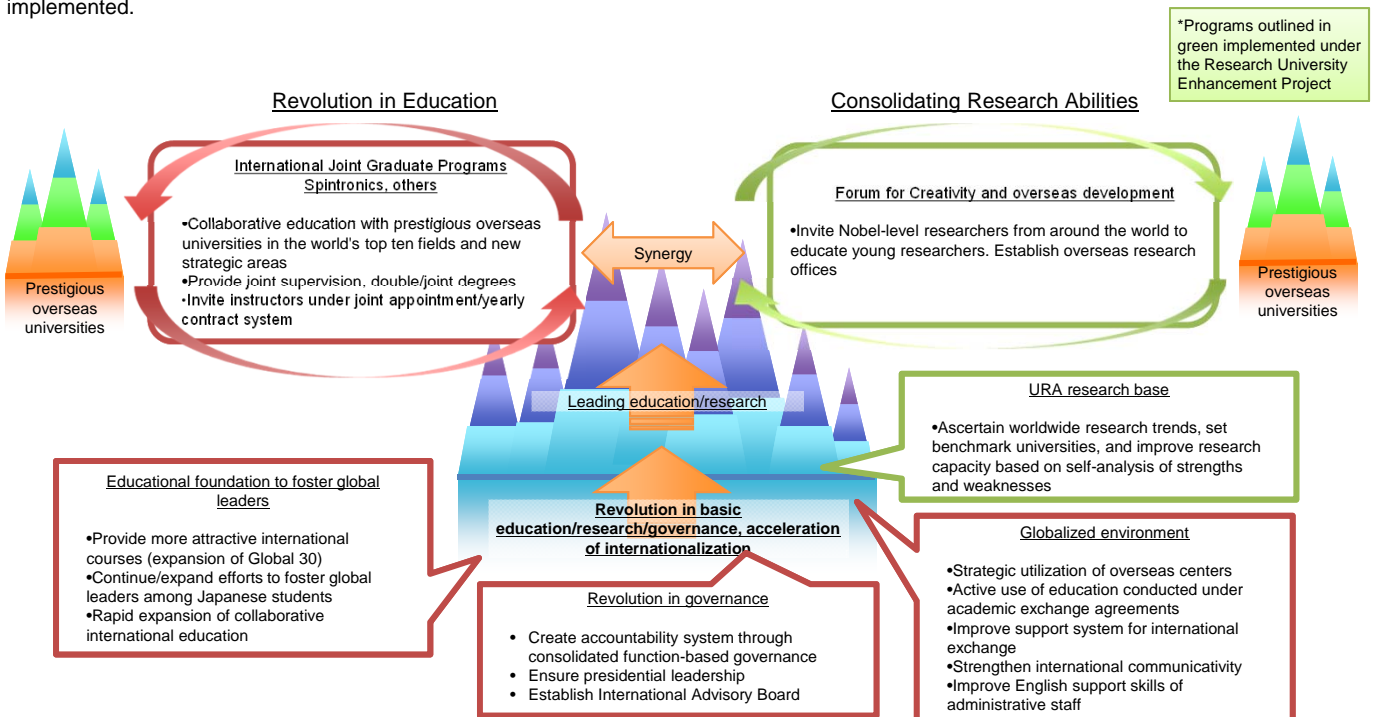
### Future Accomplishments to be Achieved through the TGU Initiative

We will create a "fellowship of knowledge," with Tohoku University as the hub, that will enable us to truly "leap ahead as a world-class university" and conduct research that will lead the global age. In addition, we will foster advanced global human resources, create science/technology related to innovation, contribute to solving world-scale problems and sustainable development, and strive to earn a place among the world's top 30 universities.

### Outline of Plan

This plan will create a venue for talented Japanese and international students to "gather, learn, and create," and accelerate the building of an "educational foundation for fostering global leaders" that will not only impart our university's tradition of learning in advanced specialized abilities, but also allow young people living in this global era to acquire competency in next-generation literacy and a global mindset. Building on this foundation, Tohoku University will, in close cooperation with prestigious overseas universities, concentrate its education and research abilities on fields in which it excels and those which it wishes to focus on expanding in the future, thus creating a group of seven "International Joint Graduate Programs." Through these programs, we will foster individuals who possess the world's highest level of research skills, a broad perspective, global awareness, and experience, so that they can create new knowledge, produce innovations, and face global problems. Moreover, through initiatives to strengthen our research capacity, such as the "Forum for Creativity," and fostering organic connections, Tohoku University will become the hub of a leading education and research cluster that will form an "international fellowship of knowledge."

In order to implement our plans, we are working to further improve our globalized environment. A function-based structure, in which university resources will be consolidated and optimized by function, is being created as one measure to enable the president's ideas to be quickly implemented.



## Outline of 10-year Plan

### -Management system

The Tohoku University Global Initiative Promotion Headquarters were established in FY 2014. A management system was then organized. In FY 2015, the Tohoku University Global Initiative Advisory Board (International Advisory Board) was created. In FY 2016, 2019, and 2023 external evaluations will be conducted.

### -Revolution in governance

In addition to the IEHE, six organizations were established, including the Office of International Cooperation (est. October 2014) and Institute for Promoting Graduate Degree Programs (est. April 2014) to consolidate university resources for functional governance. Enhancement of IR functions will be promoted.

### -International Joint Graduate Program

We established the Graduate Program in Spintronics (GP-Spin) as the first of International Joint Graduate Programs in April 2015. Seven more International Joint Graduate Programs in various fields, including Data Science, will be established by FY 2019.

### -Educational foundation that fosters global leaders

We will increase the number of international students through efforts such as expanding the Future Global Leadership (FGL) undergraduate/graduate courses (established under Global 30 to attract excellent students from abroad). Additionally, we will continue to operate the Tohoku University Global Leader Program (TGL) to develop educational programs that provide students with overseas study combined with an essential education in global leadership. We will also drastically expand educational cooperation with overseas universities and collaborative international education programs such as graduate-level double degree/joint degree courses.

### -Globalized environment

International offices, academic exchange agreements, and consortia will be strategically strengthened to improve the international mobility of instructors/students and enhance international cooperation in education/research. Under the Office of International Cooperation (est. October 2014), we will strive to plan/implement international cooperative strategies, increase our international presence, and improve our ranking. We will further improve our globalized environment by working to enhance our international PR capacity (establishment of international PR center), improve our system for admitting students from abroad (establishment of international support office), and raise the administrative staff's English abilities.

## Unique Initiatives (internationalization, revolution in governance and education, etc.)

### Creation International Joint Graduate Programs

- Leverage Tohoku University's strengths to select fields that will potentially drive the world economy and contribute to human development
- Transcend the framework of traditional education to consolidate Tohoku University's knowledge base; implement collaborative education by deepening ties with prestigious universities overseas

Ideas & Roles

- 1) Match present needs and cultivate highly capable human resources across the world.
- 2) Create cutting-edge education programs that increase our research abilities.
- 3) Create an intellectual foundation for the future, support international competition, and create innovation to aid in the creation of a sustainable global society.

Break down

- Interdepartmental graduate programs
- Jointly supervised instruction between Tohoku University and overseas institutions
- Shift towards joint supervision/double degrees/joint degrees
- Plan to have a minimum of 7 programs within 5 years



## Promotion of Cooperation with Universities Overseas

### -Create global network leveraging international offices, academic exchange agreements, and consortia

We will promote cooperation with top universities overseas through our university-level agreements with 206 institutions and departmental-level agreements with 411 institutions (as of June 2016), and the 5-university APRU consortium. We will create a global network by developing overseas bases (North America, Asia, Europe) that have research and education functions. These will be the basis for expanding collaborative international education.

### -Creation of an international knowledge fellowship

We will create an international knowledge fellowship in cooperation with prestigious overseas academic/research schools through enhanced, synergistic, research programs such as the Collaborative International Graduate Program and Forum for Creativity.

## 2. FY2014 Progress

### Common Benchmarks and Milestones

#### International Relations

##### -Establishment of Office of International Cooperation and creating a globalized environment

The Office of International Cooperation was established in October 2014 to uniformly enhance international cooperation in education/research and promote our university's global strategy, thus improving its international presence. The International PR Center's functions were upgraded, enabling the creation of a homepage with a high level of international communicativity and promotional materials such as English promotional videos. In October 2014, the International Support Office was established to provide information to international researchers/students and a unified visa services system.

##### -Continuation of the FGL Program

We will continue the Future Global Leadership (FGL) courses (undergraduate/graduate), which offer degree courses taught in English for excellent international students.

##### -Enhancement of short-term study abroad programs (SAP etc.)

As a pillar of our effort to provide global education to Japanese students, we are focusing on developing and implementing university-wide short-term overseas programs such as the Study Abroad Program (SAP) as well as other short-term programs that leverage departmental strengths. Over 400 undergraduate students participated in FY 2014. Moreover, the Pre-enrollment Overseas High School Bridging Training Program, first implemented last year, proved popular and was implemented again in March 2015.



(Study Abroad Program)

##### -Support for practical English learning

To increase the Japanese students' practical English abilities, improvements were made to curricular/extracurricular English classes, and in FY 2015 the Tohoku University English Academy (TEA) was established to provide various kinds of extracurricular English learning support.

## Revolution in Governance

##### -Institutionalization of consolidated-function governance

In addition to the IEHE, the Higher Research Organization (July 2014), Office of International Cooperation (October 2014), and Institute for Promoting Degree Programs (April 2015) were established along with 2 other institutes. This consolidated university resources by function, establishing a governance system that quickly reacts to the President's ideas.

##### -Advancement of administrative staff

As a means of improving the administrative staff's English skills, all staff will be required to take the TOEIC within 3 years. Over 200 administrative and technical staff took the group test implemented in December 2014. External lecturers were invited to conduct English Learning Seminars to motivate the staff. 130 people participated.

##### -Enhancement of IR functions

Our education and research are becoming more visible due to, respectively, the IEHE's Center for Institutional Research and the URA center's IR functions. Deliberations on consolidating IR functions have also begun.

## Revolution in Education

##### -Revolution in liberal arts education by the IEHE

Under the Institute for Excellence in Higher Education (which was established as part of the strategic restructuring of the liberal education/student support systems in April 2014) a unified system was created for conducting surveys, research, development, and implementation related to educational practices with a view towards fostering global leaders, and education/learning management improvements were planned. A unique organization was founded with planning participation by the Global Learning Center, which handles international educational exchange.

##### -Commencement of International Joint Graduate Program

We began to prepare for the start of the Graduate Program in Spintronics (GP-Spin), the first of the International Joint Graduate Programs, in early FY 2014. After preparing a common curriculum and negotiating with the overseas partner universities, it was commenced in April 2015. We are beginning preparations for other programs as well.

##### -Adoption of new global-facing entrance examination

We resolved to adopt the International Baccalaureate exam and a global entrance exam for educational programs conducted in English for Japanese students. These will be implemented in FY 2017. Furthermore, external exams, such as the TOEFL, will be actively incorporated into an expanded AO exam.



(GP-Spin framework)

## University-specific Benchmarks and Milestones

### -Expansion of Collaborative International Education

Efforts were increased in international educational cooperation, such as double and joint degree programs. Admittance of double degree students by overseas partner schools has accelerated, with the number increasing to 47 in FY 2015. In order to increase the number of outgoing students, Tohoku University began offering a scholarship for students in international educational cooperation and International Joint Graduate Programs from FY 2015.



(TGL Program)

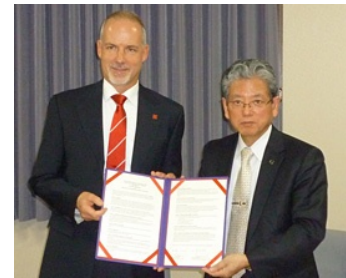
### -Tohoku University Global Leader Program (TGL Program)

Based on our foundation of highly specialized competencies, we implemented the Tohoku University Global Leader (TGL) Program, which organically incorporates sub-programs composed of classes, lectures and seminars that cultivate language/communication skills, international liberal arts abilities, and initiative, together with overseas study sub-programs. We held many classes including coeducational international seminars, classes focused on problem solving, and global career seminars. About 2,000 students, mainly 1st and 2nd year undergraduate students, registered for the TGL program. Students who fulfill the program's requirements are awarded Global Leader Certification.

## Initiatives to Improve International Rankings

### -MOU on Jointly Supervised PhD Program concluded with Mainz

An MOU on a jointly supervised PhD program was concluded with Johannes Gutenberg University Mainz (Mainz) in February 2015 as part of our promotion for the Graduate Program in Spintronics. Similar MOUs will be made in other fields hereafter.



(Signing of MOU on jointly supervised PhD program)

### -Tohoku University Day at University of Cambridge

Tohoku University Day was held at the University of Cambridge, England, in December 2014. Information on both universities was given, and we signed a joint declaration on future student/researcher exchange. There were also workshops in the fields of global safety and material science.

### -4th German-Japanese Universities Alliance (HeKKSaGOn) conference at Tohoku University

The German-Japanese Universities Alliance (HeKKSaGOn) conference was held at Tohoku University in April 2015. An overarching conference on the theme of Building Venues for the Creation of new Knowledge was held, in addition to parallel workshops composed of 8 other fields.

## Achievements in Cooperation with Universities Overseas

### -Activities with inter-university consortia:

We are independently participating in consortia with prestigious overseas universities. We attended the annual meetings of The Association of East Asian Research Universities (November 2014), Top Industrial Managers for Europe (November), and the Japan-UK Research and Education Network for Knowledge Economy Initiatives (December). We also attended the March meeting of the Japan-Russia Forum of Rectors as the Japanese representative. In addition to organizing the German-Japanese Universities Alliance (HeKKSaGOn) meeting in April 2015, we participated in the Alliance Internationale led by the University of Lyon in June.

### -Enhanced cooperation with overseas partner schools:

Tohoku University Day at Cambridge (December 2014), SGU Kickoff Symposium attended by many overseas partner schools (February 2015), Tohoku-Harvard Workshop at Harvard (May 2015) etc.

### -Activities at overseas offices:

Stepped up activities at overseas partner schools that host overseas offices. (Moscow State University, Russian Academy of Sciences Siberia, Lyon, Cambridge, UC Riverside, Chicago, Institut Teknologi Bandung, Chulalongkorn (scheduled), etc.)

## Free Answer Section (Other Initiatives)

### -SGU Kickoff Symposium

Tohoku University's Kickoff Symposium for the Top Global University Project was held in February 2015. Guests were invited from Mainz, Lyon, Cambridge, Case Western Reserve, Washington, and Chulalongkorn. Discussions on new collaborative international education/research programs were held with our overseas partner schools. About 100 people from Japan and abroad participated.

### -Initiative Website

[https://www.tohoku.ac.jp/en/about/top\\_global\\_university.html](https://www.tohoku.ac.jp/en/about/top_global_university.html)



(SGU Kickoff Symposium)

## 3. Progress of Initiatives (FY 2015)

### Common Benchmarks and Milestones

#### International Relations

##### 1. Promoting Recruitment of Foreign Instructors/International Students

- 1) We established the Promotional Expenses Fund for Employing Foreign Instructors etc. (JPY 100 million) to support recruitment of foreigners. As a result of partially supporting HR expenses for foreign instructors, there was a 13.5% year-over-year increase in the number of foreign nationals hired in FY 2016 (May 1), as compared with a 4.3% increase in FY2015 (May 1). (FY 2014: 185, FY 2015: 193, FY 2016: 219)
- 2) In addition to expanding courses taught in English that were newly established for the Global 30 program, we expanded 6-month to 1-year exchange programs and short inbound programs, 3 months or shorter, while further enhancing support for international students through the International Support Office. As a result, foreign student numbers increased substantially, from 1,677 in FY 2015 (May 1) to 1,943 in FY 2016 (May 1).

##### 2. Workshop by International Alumni

On April 19, 2016, 16 former exchange students, who had studied at Tohoku University from 2005 to 2006, returned to celebrate the 10th anniversary of their study abroad and hold a workshop.

After studying at our university, the students had gone on to be active on the front lines of research and business at institutions like Johns Hopkins University and NASA (US), and Airbus and Areva (France). They gave presentations on topics such as the effect of studying overseas on their careers, and held active discussions with the current students.



JYPE International Mentorship Event

##### 3. Providing Information in Foreign Languages

The English-speaking staff of the International Public Relations Section overhauled the English version of the university website, resulting in access numbers doubling. They also established a presence on 6 types of social media, gaining over 13,000 followers. In addition, they created a system for quickly releasing university research results to some 10,000 science journalists through websites such as EurekAlert and ResearchSEA. These activities advanced our efforts to improve Tohoku University's international reach and presence.

#### Governance Reform

##### 1. Establishment of International Advisory Board

Internal regulations were determined for the Tohoku University Global Initiative Planning and Advisory Board (International Advisory Board). In addition, six board members have been appointed (as of March 2016) from key figures taken from the presidential-class of influential overseas universities and business leaders in globally active enterprises.

##### 2. Establishment of IR Office

The Tohoku University Office of Institutional Research (IR Office) was established in January 2016, and full-time instructors were assigned to it on April 1. The goal of this office is to contribute to the promotion of strategic university operations by effectively and efficiently collecting and analyzing various data related to the university's educational, research, and other activities.

##### 3. Advancement of Administrative Staff

As a means of improving the administrative staff's English skills, English language training (about 40 participants) was conducted for 6 months by external instructors. Of the participants, around 40% (16) achieved the university's target score (TOEIC 700) while 60% (24) improved their TOEIC scores by 100 points or more. Of those who achieved certain target scores, 10 were sent for overseas training at the University of Sydney in Australia where they participated in discussions and presentations etc. with the administrative staff there. We anticipate that this will contribute further to internationalization at Tohoku University.

#### Educational Reform

##### 1. Expansion of Active Learning/Global Education Classes

The university made plans to expand the number of Development Seminars, which incorporate active learning such as seminars, practical training, laboratory work, and fieldwork, and Global Coeducation Seminars, in which students of different languages and cultures work together in small groups on assignments and projects in order to foster acceptance/understanding of diversity and create of new values through cooperation. (Development Seminar: expanded from 30 to 46 classes; Global Coeducation: expanded from 11 to 16 classes) In addition, we have continued to offer/implement Basics Seminars (20 students/class; aimed at transitioning students to active learning), which are taken by all new students, on over 160 themes (classes) with cooperation from the entire university for over 10 years.



Global Coeducation class

##### 2. Decision to Adopt Course Numbering and GPA

The university decided to adopt a course numbering system for all courses and a GPA system for all undergraduate students from FY 2016 after arranging the relevant regulations.

## University-specific Benchmarks and Milestones

### 1. International Joint Graduate Programs

A jointly supervised program was commenced with Johannes Gutenberg University Mainz (University of Mainz) in Spintronics; this is a large step forward for international joint education (degree programs) among world-leading universities. (Enrollment: 7 in 2015; 16 as of April 2016.) We also came to an agreement with the University of Bayreuth (Germany) to prepare an International Joint Graduate Program in environmental/earth sciences to begin from FY 2016.



GP-Spin Seminar

GP-Spin Orientation

### 2. Tohoku University Global Leader Program (TGL Program)

Based on a foundation of advanced specializations, we implemented a program for fostering global leaders aimed at undergraduate students that organically incorporates sub-programs composed of classes, lectures and seminars that cultivate language/communication skills, international liberal arts abilities, and initiative, together with overseas study sub-programs. Students participating in TGL increased to 2,091 FY 2015 (up from 1,322 in FY 2014).

## Initiatives to Improve International Rankings

### 1. Conclusion of Strategic Partnership Agreement with the University of Melbourne

In February 2016 Tohoku University concluded a strategic partnership agreement with the University of Melbourne. It was agreed to conduct mutual exchanges of students, researchers, and administrative staff.

Specifically, a joint research workshop will be held at the University of Melbourne in 2016.



Signing of agreement with the University of Melbourne

### 2. Hosting the T.I.M.E. General Assembly and Symposium, Participating AEARU etc.

In October 2015 Tohoku University hosted the first T.I.M.E. (Top Industrial Managers for Europe) General Assembly and Symposium held outside of Europe. At the symposium, the Japanese higher education system was explained, and reports were given by a student who had studied at Tohoku University from École centrale de Lyon, and a Tohoku University student who had studied at the Royal Institute of Technology in Sweden. Tohoku University actively participated in the annual conferences of overseas university consortia, such as AEARU (Association of East Asian Research Universities), RENKEI (Japan-UK Research and Education Network for Knowledge Economy Initiatives), and APRU (Association of Pacific Rim Universities)



T.I.M.E. Welcome Address by President Satomi

### 3. Conclusion of Academic Exchange Agreement with Case Western Reserve University (USA)

In October 2015 an academic exchange agreement was concluded with Case Western Reserve University.

This agreement laid the cooperative groundwork for the establishment of an International Joint Graduate Program in data sciences, and is anticipated to particularly spur cooperation in data science research and education.



From right: President Satomi, Consul-General Katayama, President Snyder

## Achievements in Cooperation with Overseas Universities (Type A only)

Activities with overseas university consortia:

Attended yearly conferences for consortia to which the university belongs, e.g. AEARU, APRU, and RENKEI. Hosted German-Japanese Universities Alliance (HeKKSaGOn) in April and T.I.M.E. General Assembly and Symposium (first time it was held outside of Europe) in October. Hosted APRU Multi-Hazards Summer School in July.

Enhanced cooperation with overseas partner universities:

Held Tohoku-Harvard Workshop at Harvard in April; concluded academic exchange agreement and held data sciences symposium with Case Western Reserve University in July. Jointly held symposium with the Mansfield Center at the University of Montana in November. Concluded strategic partnership agreement with the University of Melbourne and agreed to hold Tohoku University Day the following FY in February.

Improved overseas offices:

Opened Cooperation Office in Hanoi at the Foreign Trade University of Vietnam in December and Bangkok Office in Thailand at Chulalongkorn University in February.

## Free-answer

### 1. Establishment of Liaison/Cooperation Offices

In June 2015 a Memorandum of Understanding was concluded with INSA-Lyon regarding the establishment of a liaison office, and in November 2015 an agreement was concluded on an international collaborative research unit (ELyT MaX) with INSA-Lyon.

In December 2015, the Tohoku University/Foreign Trade University of Vietnam Cooperation Office was established and an opening ceremony held on-site.



Unveiling of Liaison Office Sign

### 2. Support for practical English learning

In FY 2015, the Tohoku University English Academy (TEA) was established to provide various kinds of extracurricular English learning support, such as learning advising and various kinds of English programs (175 participants in FY2016) based on teaching methods of ELS Language Centers.