

東北大学国際連携推進機構
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Report of the Tohoku University
*International
Advisory Board
2016*

東北大学グローバルイニシアティブ構想諮問会議
(東北大学国際アドバイザーボード)
2016年度開催報告書

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東北大学グローバルイニシアティブ構想諮問会議

(東北大学国際アドバイザーボード)

開催の経緯と目的

東北大学 総長 里見 進

東北大学は1907年の開学以来、「研究第一」「実学尊重」「門戸開放」の理念のもと、国際化にまい進してまいりました。特に、1980年代中盤の政府イニシアティブである「留学生10万人受け入れ計画」以降、本学はその伝統に基づく資源を最大限に活用し、大学国際化に集中的に取り組んでまいりました。その結果、受け入れ留学生数は2016年度5月時点で2,023名（在籍学生の10.9%）、大学間協定に基づく派遣学生数は650名、大学間学術交流協定は2016年12月時点で35か国・地域211機関と締結、機関レベルの海外拠点は欧州・アジアに4か所、5つのトップレベルの国際コンソーシアムへの加盟、海外有力大学との戦略的パートナーシップの構築等を達成し、国内大学有数の国際ネットワークを構築するに至りました。主として2000年代から2010年代中期のこのような本学の国際展開を分析すれば、それは「国際ネットワークの形成拡大」期であり、こうした数値上の成果を見る限り、本学国際化の取り組みはある程度成功しているように思われます。

しかし、大学国際化はそれ自体が目的ではなく、大学改革のための組織的手段です。そして、現代の日本の大学に必要なのは、出島の国際化からの脱却であり、すべての教職員・学生全員が参画する包括的国際化です。「国際ネットワークの形成拡大期」を経て、東北大学は今、これまでに得たあらゆる資力を大学改革のために「どう最大限活用するか」ということについて、大学人全員で考察し実践するフェーズに入っています。東北大学が国際的な頭脳循環のハブとして世界に大きく貢献し、社会のパラダイムシフトを先導しつつ、グローバル時代をけん引する卓越した教育・研究を行う大学へと飛躍することを目的として策定した「グローバルイニシアティブ構想」の背景にも、このような「本学構成員全員が参画する普遍的な国際化」への思いが込められています。

包括的国際化に向け学内の機運が高まる中、「スーパーグローバル大学創成支援事業」の支援を受けるグローバルイニシアティブ構想事業において、本学では2015年度に東北大学グローバルイニシアティブ構想諮問会議（東北大学国際アドバイザーボード）を組織しました。この国際アドバイザーボードは海外および国内の大学国際化や大学運営に関する有識者8名で編成されています。本学がボードメンバーに依頼したのは、本学のこれまでの国際化の取り組みをグローバルな視点で客観的・俯瞰的に評価し、今後の国際化の方向性を本学の理念やビジョンと整合させながら多様な観点から提案いただくことです。本学はこれから数年にわたり、ボードメンバーの知見とアドバイスをいただくこととなりますが、その最初の諮問会議が2016年11月25日に仙台市内にて実施されました。

この諮問会議で挙げられたボードメンバーの評価や提案は、日本および本学の大学国際化の現状をよく捉えたものであり、非常に実践的で有益です。本会議をまとめたこの報告書が諸関係者に積極的に活用され、本学の国際化推進に向けた有意義な議論の一助となることを期待しています。

東北大学グローバルイニシアティブ構想諮問会議
(東北大学国際アドバイザリーボード)
2016 年度実施概要

1. 日時:2016 年 11 月 25 日(金)
2. 場所:ウェスティンホテル仙台「雀」
3. 参加者

(1) 東北大学国際アドバイザリーボードメンバーのうち以下の 6 名

大内 二三夫 教授 Professor Fumio S. Ohuchi	ワシントン大学 (US) 材料工学科研究科長
小野寺 正 取締役会長 Mr. Tadashi Onodera	KDDI 株式会社 取締役会長
Professor Richard James	メルボルン大学 (Australia) 副学長 (アカデミック担当)
Professor Marie-Pierre Favre	フランス国立応用科学院リヨン校 (France) (INSA Lyon)副学長 (国際担当)
Professor Harald Fuess	ルプレヒト・カール大学ハイデルベルク (Germany) The Cluster of Excellence "Asia and Europe in a Global Context" 研究分野 A 副代表
Dr. Kriengkrai Boonlert-U-Thai	チュラーロンコーン大学 (Thailand) 学長補佐 (国際担当)

(2) 東北大学

里見 進	総長
植木 俊哉	理事 (総務・国際展開・事務統括担当)
花輪 公雄	理事 (教育・学生支援・教育国際交流担当)
伊藤 貞嘉	理事 (研究担当)
大槻 達也	理事 (人事労務・環境安全担当)
佃 良彦	理事 (財務・施設・キャンパス計画担当)
金井 浩	副学長 (研究力強化・機構改革担当)
山口 昌弘	総長特別補佐 (国際交流担当)・副理事 (国際交流担当) グローバルラーニングセンター センター長
小谷 元子	副理事 (研究担当)
粕壁 善隆	グローバルラーニングセンター 副センター長
末松 和子	グローバルラーニングセンター 副センター長

4. プログラム

10:00-10:10	Opening remarks <u>里見進 総長</u>
10:10-10:30	Things we have achieved so far: The outline of internationalization at Tohoku University <u>里見進 総長</u>
10:30-10:45	Tohoku University Global Initiative: The Top Global University Project in Tohoku University <u>植木俊哉 理事</u>
10:45-11:00	休憩
11:00-11:30	Topic 1: Strategic global networking for effective internationalization <u>植木俊哉 理事</u>
11:30-12:00	Discussion 1 座長: 大内二三夫 教授(ボードメンバー)
12:00-13:30	昼食
13:30-14:00	Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education <u>伊藤貞嘉 理事</u> <u>山口昌弘 総長特別補佐・副理事</u>
14:00-14:30	Topic 3: Enhancing educational internationalization for all students <u>花輪公雄 理事</u>
14:30-15:00	Discussion 2 座長: 大内二三夫 教授(ボードメンバー)
15:00-15:30	休憩
15:30-16:30	国際アドバイザリーボードメンバーよりコメントとご提案 (お一人約 10 分間)
16:30-17:00	General Discussion 座長: 大内二三夫 教授(ボードメンバー)
17:00-17:10	まとめ <u>植木俊哉 理事</u>
17:10-17:15	閉会のご挨拶 <u>里見進 総長</u>
18:00-19:30	懇親会

Topic 1-3 についてはプレゼンテーション 25 分、質疑応答 5 分

第1回東北大学グローバルイニシアティブ構想諮問会議

(東北大学国際アドバイザーボード)

ボードメンバーのレポート (概要)

○2016年11月25日(金)仙台市内にて開催された標記会議に出席した東北大学国際アドバイザーボードメンバー6名には、会議席上でのコメントに加え、文書でのレポート提出を後日送付にて依頼した。

○レポートは以下の5点についてまとめるよう依頼した。

1. Overview of Tohoku University's International Strategies
2. Topic 1: Strategic global networking for effective internationalization
3. Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education
4. Topic 3: Enhancing educational internationalization for all students
5. Other issues

各ボードメンバーからのコメント、提案の概要は以下の通り(全訳・全文掲載ではない)。

1. Overview of Tohoku University's International Strategies

【Professor Fumio S. Ohuchi】

- ・東北大学の国際戦略は里見ビジョンと調和が取れている。
- ・大学国際化は大きな資源を必要とし、その運営は複雑さを伴い、また経年のインパクト評価の測定が難しい取り組みである。
- ・しかし、SGUプロジェクト2年目にして、東北大学は展開・改善すべきエリアを定め、あらゆる分野において大きな進展が見られる。

【小野寺正 取締役会長】

- ・東北大学は国際化に比較的早くから取り組み、留学生数、外国籍教員数、外国語での授業数などにおける着実な進展が見て取れる。
- ・量的拡大と共に質の向上が重要だが、この点について困難であることは理解しつつ、評価指標を作ること、他大学と異なる取り組みを明示することなど工夫が必要である。

【Professor Richard James】

- ・東北大学はすでに日本におけるトップ大学の一つであり、世界ランキングでは 150-200 位内に入っている。明らかに傑出した世界的大学である一方、上海交通大学の世界大学学術ランキングではこれまで向上が見られず、徐々に悪化してきている。さらに、東北大学の国際的地位は理工学における傑出性のみにより達成されている。当然ながら国際ランキングは国際化についての唯一でベストな指標ではないが、重要である。そして、これらのランキングは機関としてのパフォーマンスの状態を伝え、世界中から優秀な学生を引き付けるのに役立つものである。

【Professor Marie-Pierre Favre】

- ・経験的に言えば、東北大学は国際化の進展においてすでにある程度確立しており、里見ビジョンは国際化の側面を全面的に統合したビジョンである。
- ・大学国際化は複雑なプロセスであり、時間と、継続的な調整と、そして付加的な手段を必要とする取り組みである。国際化はすべてのステークホルダーに影響を与える組織を超えた取り組みであり、変化をマネジメントするということも国際化プロセスの一つである。
- ・これまでの経験を踏まえて、東北大学に今必要なのは国際戦略を明文化することである。それは以下の項目を含むような文書になるであろう。
 - 東北大学のグローバルビジョン
 - 2,3 の主要な目標とそれに関連する取り組み（既存のものと将来可能性のあるもの）
 - アクションプラン（短期/長期）。地理的エリアにブレイクダウンしたものも良い（例：アジア、欧州、北米等）
 - マイルストーン、指標、評価
- ・戦略の効果測定は必須である。SGU の枠組みにおいて必要な指標もあるであろうし、東北大学独自の指標もあるであろう。パフォーマンスを測定する計器盤が必要である。

【Professor Harald Fuess】

- ・東北大学は近年、様々な活動による国際連携の拡大を活発に行ってきた。
- ・しかし、国内での卓越性から発展しさらに世界的なトップ研究大学へとなるための道のりはまだ長い。全体的な国際化として私が推奨するのは以下の 5 点である。
 - 1) トップグローバル大学となることを現実的にするためには政府ファンドを 10 倍にすること。これは、「言うは易く行うは難し」である。しかし、ドイツのような日本と相当する州立大学のある国では、政府がもっと大規模な、そして主要研究大学に対してはより長期の投資を行っている。先端的研究や競争ベースのイノベーションをもっと支援しなければ、日本は取り残されてしまうであろう。
 - 2) ほとんどの学術分野における先端的研究は当然国際的で共同的である。この点の私の

主要な推奨策は、革新的な手法を用いて研究者の頭脳獲得または頭脳還流を測ることである。研究者個人レベルの連携は共同体制の契機となるであろう。ただ、重要なのは、こうした協力体制を研究/アカデミック・インキュベーターとして促進させるための大学による組織的枠組みを確立することができるかどうかである。研究者の複数回の訪問のためには自然科学や医学、工学の研究施設は積極的なインセンティブになりうる。しかし、例えばデジタルインフォメーションシステムなども、人文・社会学系において魅力的な資源となる。

- 3) 戦略的パートナーシップは、事務手続きの手間や学術上のベストプラクティスを学び合うといった「取引コスト」を減じることで教育研究上の大学間協力における潜在的な有益性をもたらす良い取り組みである。個人的にはこれを3から6の研究大学に展開すると良いと思う。
- 4) 東北大学のような大規模大学で国際化をコーディネートするのは大変困難なプロセスを要する。多数のボトムアップとトップダウンの取り組みが多く、教職員に知られないままに起こる。ここで望まれるのは学内に協力関係を築くためのダイナミックなメカニズムの導入で、それによって（例えば英語教育と日本学のように）類似するが平行的に進められるべきプログラム間の相乗効果や、若い（訓練を受けた）教職員が協議や意思決定プロセスに参加するといった機会を作ることが可能になる。どのようなメカニズムを採用するにせよ、提唱したい点は、できる限りシンプルで無駄のない、それでいてダイナミックなものにすべきである。可能性を求めるよりも抑制することに重きをおくような時間ばかり消費する官僚的な委員会構造をもう一つ作るとは避けるべきである。
- 5) 東北大学が掲げる核となるスローガンの一つは、開かれた大学（be an open university）である。私にとってこれの意味することは、人文学、社会科学、法学、経済学を含む総合的な範囲の学術領域における卓越性を育てる大学になること、である。これらの領域において国際的認知度を上げることは、結果的に総合大学としての東北大学の地位を強化することになる。付随的に、学生、教員、そしてとりわけ執行部メンバーの男女比については、他の世界的なトップ大学に比較すると東北大学では女性の数があまりにも少ない。上述の学問分野は女性の学生や教員が比較的集中する分野であるため、この領域を強化することで、東北大学は国際化もするし、同時により包括的な大学となる（つまり、より多様な才能ある集団から広く人材を獲得する）ことができるだろう。ハイデルベルク大学ではこのアプローチによって非常に学術的な有益性を得ることができ、third party からのファン드가”国際文化学”と広く呼称される領域に投資されてきた。

【Dr. Kriengkrai Boonlert-U-Thai】

- ・東北大学の国際戦略はグローバルビジョンとよく調和している。

- ・現在目指している国際化の諸側面に加えて、今後提案したいのは、社会や日本全体への貢献や、人文科学に関する国際戦略である。

2. Topic 1: Strategic global networking for effective internationalization

【Professor Fumio S. Ohuchi】

- ・東北大学は学術交流協定締結、いくつかの海外拠点設置、国際コンソーシアム参加などによって広く海外との連携体制を築いてきた。
- ・しかし、大きな課題はこれらの海外連携をさらなる大学国際化のために、いかにして戦略的に活用するかという点である。プレゼンテーションでは各海外オフィスの活動などを詳細に紹介されたが、それらの活動のアウトカムをどのように測定し活用するかという点には触れられなかった。重要なのは、各取り組みで期待することやゴールを再定義し、アウトカムを測る方法を確立することである。例えば、骨の折れる仕事かもしれないが、すべての学術交流協定から得た成果を再評価することも必要かもしれない。
- ・東北大学の国際化にとって新たな視点をもたらすかもしれないのは、新しく取り組み始めた戦略的パートナーシップである。プレゼンテーションではこの取り組みにおける学内連携の重要性が述べられた。このためには、喫緊のグローバルな課題に対し国内外のパートナーと共に取り組み革新的な解決策を提案できるような力をファカルティ、職員、学生に与えることが必要であろう。さらに、そうした参画やイノベーションを支えるためには、大学全体としての行動プロセス、ポリシー、報奨のシステムを確立することも考慮に値する。

【小野寺正 取締役会長】

- ・国際的ネットワーク形成の目的、目標を明確にする必要がある。
- ・学術交流協定を締結しているすべての機関を同じように扱うのではなく、東北大学としてどの機関とどのような付き合い方をしていくべきなのかをよく検討すべきである。
- ・海外拠点、リエゾンオフィスについても、目的、目標を明確にする必要がある。一つの方法として、交流協定を結んだ機関と事務所を提供しあうことも考えられる。
- ・教員、研究者、学生の交流を高めるためにはそれをサポートする事務職員の理解を進める必要がある。このため、事務職員の国際人事交流を進めるのも効果的と思われる。

【Professor Richard James】

- ・東北大学のグローバルネットワーキングは学生モビリティの増加を促し、研究者の連携を強めてきた。またパートナーシップを一つの統合されたスキームで行うやり方は賢明である。
- ・国際コンソーシアムへの参画は注意深い考察が必要である。こうしたコンソーシアムは

必ずしもすべてが効果的ではない。コンソーシアムは、とりわけ規模の大きなものは時間を浪費するものでありながら、受ける恩恵はあまり多くないことがある。概して、一対一の戦略的パートナーシップが最終的にはより価値のあるものと思われる。私の提案は、少ない数の大学とりわけ集中的にパートナーシップを構築することである。

- ・総合的に見て、私が知りたいのは、東北大学のパートナーシップやコンソーシアムが、これまで私が多くの大学で見てきたような「明確な目的のないパートナーシップ」となるのを避けるためにどのように今後発展していくべきかという明確な議論がなされているかどうかである。

【Professor Marie-Pierre Favre】

・学術交流協定

学生の国際交流機会の増進のためには多様性が必要である。中南米は今後展開が望まれる地域かもしれない。また、すべての交流協定が「生きている」(active)ことが保証されなければならない。

・戦略的パートナーシップ

(複数の基準による決定プロセスを経て) 数大学のパートナーを選ぶべきである。例えば、(北米、ヨーロッパ、アジアから始めて) 世界各地域のトップ 10 大学を見極めるのが良いかもしれない。

戦略的パートナーシップとは何か？

学内外の指標を作成すること。例えば

- 多数の研究者、学生が関わる共同体制ができている
- 研究領域・内容のマッチングができる/専門性の補完ができる/開発発展について高い可能性がある/共同研究の継続性が見込める
- 活動領域・取り組みの多様性がある/様々なレベルでのプロジェクトが見込める (学部や大学院、ダブルディグリー、ジョイントラボ。複数部局が関わるもの等)

何を期待するのかということについて、相手校と共有しておくことが重要である。また、このパートナーシップは常に win-win 関係でなければならない。

・海外拠点とリエゾンオフィス

目的は何か？運営体制は？コミュニケーションの方法は？評価 (指標) はいずれにせよ必要である。この連携体制の付加価値は？

・効果的なネットワーク

ネットワークを構築することのベネフィットは何か？

- 東北大学を売り込む (promote) ため
- ベンチマークのため
- 二大学間関係では実現できないような共同プロジェクトを開発するため

評価は常に必要である。"no"や"stop"と言うべき時もある。

チームや他の学内ステークホルダーに対して十分な合理的説明を用意するためのしっかりとした運営体制も必要である。レビューには3から5年間の期間が適切であろう。

【Professor Harald Fuess】

- ・ネットワーク構築における全体的な戦略は？パートナーシップというネットワークにどのような特徴をもたせているのか？優先順位を設けないまま何もかもをカバーしようとすれば、事務作業ばかりが増え、他の日本の競合大学と差別化を図れなくなる。選択的に相手大学を選び大学間関係を深めることを提案する。同様に、強みのある地域に焦点化し複数の学問間の相乗効果を求めることも可能である。ここで核となる課題は、大学レベルのネットワーキング活動と、部局や研究所のニーズ/関心を統合させることであり、これによって将来より幅広い活動が期待できるであろう。
- ・東北大学の壮大なネットワーキング活動の中で私がポジティブだと思う点は、2つの戦略的パートナーシップと、HeKKSaGOnのように国際的にプロファイルの高い学術的同盟への加盟である。フランス、ドイツ、オーストラリア、タイ、ロシアなど、他の日本の大学がそれほど注意を払ってこなかった国との特定の実質的関係を築いてきたことも良く分かった。
- ・それでもやはり、他の日本のトップ5研究大学に比べて、東北大学は「最も国際的でない」大学のように思われる。外国人（あるいは海外経験のある）教員数を1,000名以上にする目標は立派であるが、それに伴って長期的なキャリア・パースペクティブも用意しなければ、再び若い外国人研究者を別の活躍の場に向かわせることになる。
- ・とりわけ学生の獲得にとっては、より明確に表される国際戦略を立てることを提唱したい。自然科学、物理学、医学において強みを持つということならば、こうした領域において強みをもつ研究大学にターゲットを定めることが期待される。その際は、ブランド力の高い大学と形式的な契約だけ結んで実際の中身はないというような罠に陥らないことである。
- ・海外拠点やリエゾンオフィスについては、残念ながら私自身のこれまでの経験ではこうした事務所は実際上の意義というより象徴的なものといってよい。研究上の共同体制を求めることにおいて、通常、職員は深い知識があるわけではない。学生の獲得においてすら、現地の教員と協力して行う方がより効果がある。彼らはその地においてより影響力があると思われるからである。

【Dr. Kriengkrai Boonlert-U-Thai】

SGU プロジェクトや国際ネットワーキングに関して問うべき点や提案は次の4点である。

1. 進行中のプロジェクトはSGUが終了した後どのように維持していくのか。
2. 東北大学の教育と研究について社会やステークホルダーへのインパクトにフォーカスすべきである。

3. SGU で展開しているプロジェクトの大部分は外国語に集中しているようだが、その他の東北大学で展開されている大半の既存プログラムは国際化についてどのような努力が見られるか。
 4. 国際コンソーシアムなどのネットワークをどのように活用するのか
- ・ 海外拠点についての投資対効果、費用対効果：どのように活用できるか
 - まず、研究者の国際的移動について活用することが第一義
 - 地方コミュニティへの参画
 - 留学生の獲得（特に将来研究者となるような PhD 学生）
 - 海外での大学-産業間連携
- これらの活動を実現するためには、学内部局を訪問しネットワークを築くこと。それにより win-win の関係性を構築することが重要。これらの拠点の活用に、多くの部局が参画するような仕組みが必要。

3. Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education

【Professor Fumio S. Ohuchi】

- ・ 東北大学は材料科学、化学、地球/環境科学、物理/天文学の分野等でその強みをもち、世界を先導する大学として認識されてきた。
- ・ 東北大学はワールドクラスの大学と研究・教育における共同体制を築き、提案されている共同学位プログラム（jointly supervised, double and joint degrees）は共同体制の強化を図る点で有効である。
- ・ しかし、共同学位の設置においては、制約やリスクが見られる。これらの学位プログラムは、大学間ネットワーク関係を深化させたりプログラムや大学の差別化を図るために、東北大学の教育ミッションや学生の教育学習経験、コースやプログラムの学習アウトカムを改変させる潜在的可能性をもつ。
- ・ また、このプログラムに参加する学生には、彼らの将来のキャリアにとってこの共同学位をどのように活用できるのかということが適切に指導されるべきである。
- ・ 8 つの国際共同学位プログラムのうち、「日本学」のみが文学研究科で組織されている。東北大学のような総合大学においては、人文学や社会学からの参画がもっとなされることが望ましい。（文理融合のために）上級マネジメントの立場にある教職員が部局長などと戦略的に取り組むことが必要である。

【Professor Richard James】

- ・ このトピックは全体的な国際戦略の中でよく練られており洗練されているように思われる。当然ながら、研究の国際化は教育学習の国際化に比べて達成するのが比較的容易で

ある。それでもなお、高等研究院（OAS）やそれに明確に関連づけられた研究のフォーカスなどの主要要素の背後にある構想には感銘を受けた。

【Professor Marie-Pierre Favre】

- ・海外の研究員に対する人事の方針、言語的条件（英語？）、性差による選別に対する積極的な取り組みなどはあるか？
- ・ダブルディグリーは大学と PhD 学生の両者にとって付加価値となるものであり、考慮に値する取り組みである。また、ダブルディグリーは学位の後の将来の共同研究に継続されていくべきである。
- ・例えば戦略的パートナーシップと関連づけて、国際的な人的交流を高めるべきである。
- ・教員のための（英語強化などの）トレーニングプログラムを開発すべきである。

【Professor Harald Fuess】

- ・トップ研究大学における大学院教育は当然ながら国際的であり、将来の研究者の学術的モビリティを効果的に高めるためによく用いられる手段であるが、さらには今後、一般的な職業領域においても、ますます学術的トレーニングを受けた人材が求められる。
- ・doctoral fellowship の支援のある国際大学院プログラム構想は、ジョイントラボの取り組みと効果的に統合されれば最も将来性のある取り組みとなる。ただ、“joint graduate training”というように名称を変える方が良いように思う。私の経験では、“supervision”という用語は少なくともドイツの大学では厄介な状況を招く言葉である。
- ・これまでの様々な経験から言って、日本の大学全般に言えることはしばしば大学レベルでの意思決定に時間がかかりすぎることがあった。予定している大学院プログラムの開始になぜあと3年（2019年）かかるのか、不思議に思う。
- ・テニユア制は世界的にどの大学システムでも障害となる慣習である。もし資源があれば、私が推奨するのは若い外国人研究者をより長期のポスドクで戦略的に獲得することである。ここでカギとなる要因は、この大学を卒業していなくても採用されるチャンスのあるような開かれた雇用プロセスである。

【Dr. Kriengkrai Boonlert-U-Thai】

本側面についての東北大学の取り組みとリーダーシップは大変印象づけられるもので、世界クラスの上を行く取り組みを成してきた。いくつかの細かい提案事項は次の通り。

- ・これまで国内のジャーナルに論文投稿をしてきた東北大学の研究者に、いかに ISI/Scopus のデータベースに載るような論文投稿を奨励するか
- ・人文社会科学系の研究者への上記のような論文投稿奨励をどう進めるか

4. Topic 3: Enhancing educational internationalization for all students

【Professor Fumio S. Ohuchi】

- ・東北大学には学生モビリティを高めるための様々な手段を確立してきた長い蓄積がある。データで示されている通り、東北大学生の海外派遣への関心は上昇傾向を見せており、教育国際化を強化する有効な方法と思われる。
- ・国内学生にとって、国際化への障壁の一つは外国語、すなわち英語にある。自身の経験から述べれば、「短期留学」プログラムへの参加はこうした英語への障壁を軽減する効果がある。講義聴講などを伴う短期の留学経験は「自信」へとつながり、さらに「長期」の留学プログラム、あるいは海外大学院進学への希望をも喚起する。この点は、交換留学プログラム参加学生のうち 64%が SAP 経験者というデータとも一致する。問題は、こうした経験をいかにして「すべての東北大学生に」促していくかという点にある。

【小野寺正 取締役会長】

- ・全学生を対象とする国際化は、短期留学と、受け入れ留学生との交流が主なプログラムになると思われる。その場合も目的と目標を明確にすべきである。
- ・留学プログラムにおいては日本人学生が日本人以外と積極的に交流できる仕組みや、PBL の仕組みを取り入れ、相手校の学生と共にその国の課題を考える仕組み、総合大学のメリットを生かして、文系・理系混合で一つの課題に取り組むことなど、学生にとって何等かの「気づき」を得られる仕組みを考えていただきたい。

【Professor Richard James】

- ・このトピックは国際戦略の中で最も難解だがやりがいのある分野だと思われる。課題として挙げられるのは以下の点であろう。
 - 派遣留学の大幅な引き上げとこれをコースと統合的に組み合わせること
 - 仙台に継続的に来る留学生数を大幅に引き上げること
 - 留学生に対して面倒見のよい、しかも学術的なサポートを提供すること
 - 英語で提供されるプログラム数を増加させること
 - 外国人教員やこれらのスタッフをサポートする教職員の数を増加させること
 - 真に「国際的な要素に満ちた」カリキュラムを国内学生のために作ること
- ・重要なのは、東北大学生が国際的な教育を**避けられないように**することである。これには例えば、海外経験、あるいは深いレベルでの国際的なカリキュラムなどが関わるであろう。
- ・国際性に対する意識や国際的な競争力が高い卒業生の価値を認識するためにも、産業界やビジネス界の参画は大変重要である。東北大学は教育国際化を支援するような学外ステークホルダーを巻き込む努力を続けるべきである。

【Professor Marie-Pierre Favre】

- ・ ”Internationalization at home”とは、留学生「と」外国人教員「と」国際性の高い職員とともにある国際的なキャンパスである。
- ・ 学生モビリティは促進すべき。彼らは将来、海外で東北大学アンバサダーとなる。
- ・ 国際的なモビリティについての共通フレームワークを構築すること。そうすれば各部署がやがてそれを採用するようになるだろう。
- ・ 学生モビリティの基礎となるのは、学術上の共通認識である。両大学において認められたラーニング・アグリーメントが求められる。それは通常は協定に明記される。教員はそのアグリーメントを尊重しなければならない。

【Professor Harald Fuess】

- ・ 東北大学の数々の教育国際化の取り組みを踏まえ、次にフォーカスすべきは6か月から1年間のより長期の滞在による学生交換であろう。この期間は、学生を海外への旅行を短期的な休暇からより真剣な文化的・学術的イマージョンへとシフトさせる期間である。このことは、学生が学位を得るために時間を無駄にせず単位互換ができるシステムを作り、海外提携校の学術的質への信頼を示すことにもなる。1大学当たり3名という小さな交換数の代わりに、選抜した相手大学との交換数はもっと増やすべき（そしてそうした関係性を持つ大学に対しては財政的インセンティブも優先的に付ける）である。
- ・ 今必要と思われる重要な課題は、英語学習の提供についてどのように展開、またはどのようにまとめるかということであろう。私の経験では、学生は自分の科目についてより知ろうとする意欲をもつものであり、これが外国語能力を獲得する契機となりうる。英語による科目の提供（必修）により、英語授業は留学生（彼らはよく、日本人学生が教室にいないという不満をもつ）だけがとるものとはなくなる。ここでの戦略的な課題は以下のものがあるであろう：既存のプログラム、留学生対象の小規模なプログラムで英語力強化を目指すのか、それとも将来、例えば研究室やIT科目に強調点を置くような英語を教授言語とする学部レベルの liberal arts の学部を作るのか。

【Dr. Kriengkrai Boonlert-U-Thai】

教育の国際化に関する東北大学のこれまでの取り組みは大変良い。それを踏まえた補足的な提案事項は以下の通り。

- (1) スムースに卒業できるための単位互換の仕組みをいかにさらに効果的に構築するか
- (2) 学内すべての部局・部署に“Internationalization DNA”を持ってもらうにはどうすればよいか
- (3) 母語の日本語を教授言語とするプログラムにどのように国際化を取り入れるか
- (4) キャンパスにおいて留学生と国内学生をいかに交流させるか

5. Other issues

【小野寺正 取締役会長】

- ・大学国際化はどうしても各大学類似の施策が多い。東北大学として何か特徴のある施策を検討する必要がある。

【Professor Richard James】

東北大学執行部において検討されるべき事項

・国際化の明確な目的を確立すること

最近では多くの大学が国際化を模索しており、今では国際化はありふれた志望であり主要な目的とされ、ほとんど不問の事項である。しかし、大学にとって国際化とは何を意味するのかということは、しばしば曖昧である。国際化の意味には多くの事項が含まれる。

東北大学は、国際戦略を通して正確には何を指すつもりなのか？どのような方法によって国際化を通じてより良い大学となることができるのか？どのようなことが変革にとって必要になるのか？国際化がどのようにして東北大学の国内的、地域的役割や位置づけを向上させるのか？さらなる国際化はどのように東北大学を向上させるのか？

反対に、今後のさらなる国際化に失敗するとすれば、それはどのように東北大学の発展を制限し、研究、教育、エンゲージメントを阻害することになるのか？

これらは簡単な問いではない。しかし、東北大学にとっての国際化の正確な目的について明確なステートメントや決定を行うことは有益である。個人的には、より統合的な国際戦略の文書を見たいと思っている。そこには、**目標、役割、責任、行動対象と測定方法**が定義されていることが望ましい。そのような文書は「当事者」(ownership)意識を学内全体に構築するのに役立つ。

・国際化の進展を測定する key performance indicators を確立すること

大学国際化を測る最適な指標はない。しばしばそれらはインプットやプロセスを測るものばかりで、アウトカムやアウトプットに欠ける。

東北大学はその国際戦略の要素に対する非常に明確な、可能な部分は量的な、ターゲットを構築することに注意を払うことができるであろう。大変重要なことは、そうした明確なターゲットはアカウンタビリティや報告、モニタリングのサイクルに関連付けられて設定されるべきだということである。

・教職員と学生の関心、参画、「オーナーシップ」を確立すること

正直に言えば、多くの学生や教職員は国際化にそれほど関心がない。しかし、国際化に対して熱心な提唱者はいて、大学の希望するところの大部分を実行するそのような「パイオニア」に大学は依存しがちである。大学内のより多くの人々がどうしたら国際化の重要性に順応できるようになるか、ということへの気づきが次の課題となる。東北大学に対し

提案したいのは、国際化のプロファイルを高め、国際化のビジョンやその重要性を広く伝えるためにどのようなタイプの「市場キャンペーン」(marketing campaign) を学内で展開できるかを考えてみることである。

・変革と順応への文化を確立すること

真の国際化は緊張をもたらす。なぜなら国際化は既存の文化、価値観、期待や考えに疑いを投げかけるものだからである。東北大学は今後の国際化で生じるはずのストレスや負担に対し敏感に、反応的になる必要がある。東北大学は国際化の影響を受け入れ、それによって変わる用意ができているか？

・国際戦略のガバナンスとマネジメントを”実現させる要因(enabler)”を確立すること

11月の会議では、国際戦略の全体的な実施とモニタリングを運営統括するフレームワークを完全には理解することができなかった。各種のプログラムや教職員の取り組みを成功裡に取り込み調整するような学内の「仕組み」(つまり、ガバナンス構造と財政的な要因)を確立することが有益であろう。

【Professor Marie-Pierre Favre】

- ・組織図を明示すること。それはシンプルなものとし、学内外のステークホルダーにとって理解しやすいものにするべきである。
- ・中央組織と各部局のキーとなる連絡先を明確にする。
- ・「研究第一」は当然重要である。また、学生のエンプロイアビリティも同様に主要ミッションであり、大学として関わるべき点である。ヨーロッパでは産業界からのフィードバックが大変重要であるが、日本では違う仕組みであろう。しかし、この点は今後（日本でも）進展するところかもしれない。
- ・同窓会もまた主要な役割を果たす機能である。
- ・職員のモビリティも国際化を促進しサポートする方策の一つである。

【Professor Harald Fuess】

- ・日本では「国際化」はしばしば「英語を話すこと」を意味する。カギとなる課題は、研究と教育における全体的な質の向上を目指して、様々な国際化の方向性を調整することである。よって、単に留学生や外国人研究者の数を増やすことがゴールであるではなく、教育研究のための理想的環境を作るようになることが世界のためでもあり、東北大学のためにもなる。こうした方向性を効果的に調整できるような研究大学が、長期的に競争力を持つ大学になり得る。

【Dr. Kriengkrai Boonlert-U-Thai】

- ・大学は世界ランキングのために運営されているのではないにせよ、世界ランキングにどのように対応するかは、考慮に値する。(例：Scopus publication, Scopus Citation, Academic and

Research reputation scores, フルタイムの国際学生と教職員、産業界からの資金獲得 等)

- 財政的な運営の問題。政府ファンドと自己収入についてどのような維持対策があるか
- ファカルティ・ディベロップメントは東北大学の主要戦略として重要である（例：教職員の英語運用能力の向上、国際的な出版・論文投稿活動、研究支援、教育学習におけるイノベーション、教職員へのインセンティブ）
- 大学としてのパートナーシップを個々の研究者レベルにまで落とし込む方策にはどのようなものがあるか？（すなわち、国際オフィスがその扉を開ける役割をもっているが、教職員がその関係性を維持するべきである）
- 協定大学において夏季休暇中に一か月の在外研究を行うことは可能か？これは、国際的な共同研究論文や出版、引用論文への貢献につながる。
- 学生のための国際的なインターンシップの機会をどのようにしたら増やすことができるか？また、いくつかのパイロットプログラムにおいて、交換留学生にそれを必修化することは可能か？
- 基礎研究と応用研究の適切なバランスを取るには？
- 大学としてのアイデンティティや独自性（Uniqueness）を確立・維持するには？
- 21 世紀型スキルや UNESCO の Sustainable Goals のような「世界的な関心事」を東北大学の国際戦略に取り入れることも重要である。

Tohoku University International Advisory Board 2016

Comments and Suggestions

Professor Fumio S. Ohuchi, University of Washington

Overview of Tohoku University's International Strategies

Tohoku University (TU)'s international strategies are well aligned to the Satomi vision with the emphasis of global learning and world-leading level of research. Internationalization is very resource consuming to establish and sustain, complicated to govern, and often difficult to assess regarding its impact over time. Yet, at the FY-2 stage of the Top Global University Project, TU made a tremendous progress in all aspects by identifying the areas to be developed and improved. I would like to congratulate everyone involved in this project for this significant accomplishment. In the following sections, I have made several comments and recommendations on each topic.

Topic 1: Strategic global networking for effective internationalization

Internationalization of the higher education system is a two-way process. It must be worked out multilaterally rather than unilaterally so as to produce maximum benefits to the host and partner institutions in terms of teaching, research and knowledge transfer. For this, it is critical to concentrate its energies on cultivating, enduring, boundary-spanning relationships between the two. Tohoku University (TU) has already established numerous exchange agreements with various institutions in various countries, set up several overseas/liaison offices in the globe, and joined consortia with world's top universities. These efforts have resulted in increased student mobility, and promotion of TU's excellence and leadership in both research and education. However, a big challenge is how TU can strategically utilize those exchange programs and functions of the overseas/liaison offices to further develop global networking for internationalization. One thing that is critically lacking is its evaluation process of the outcomes. Prof. Ueki described activities of the overseas/liaison offices in great details; however, did not touch on how their outcomes were measured and utilized. It is important to re-define the expectations and goals of each program, and establish a tool to measure the outcomes. It may need to re-evaluate the values gained from 209 institutions in 36 countries/regions, although it is a notoriously difficult task. A new approach that TU has recently taken as "strategic partnership" may bring a new insight into global networking for internationalization. Prof. Ueki also pointed out the importance of communication among different units in TU, i.e., internal networking. For this, it is needed to empower faculty, staff, and student to engage alongside local and international partners on the most pressing global issues and to offer innovative solutions. Furthermore, to buttress such engagement and innovation, it might be worth developing institutional processes, policies and rewards system within TU.

Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education

TU has its own strength in Materials Science, Chemistry, Earth/Environmental Science, Physics/Astronomy, and has been recognized as world leaders in many subjects. The University has already established sound collaborations in research and education with the world class institutions, in which strong synergetic effects are already seen in the joint graduate programs. Proposed three collaborative degrees (Jointly supervised degree, Double degree, and Joint degree) are effective further enhancing the synergetic effects of the collaboration; however, the constraints and risks involved in establishing the collaborative degrees must be identified, since they have the capability to alter the educational mission, recast the educational experiences of students, transform the learning outcomes of courses and programs, deepen network relations between universities and provide a tool for differentiating programs and institutions. In addition, students need to be properly advised as to how they can utilize the collaborative degrees for their career development.

Among eight international joint graduate programs, “Japanese studies” is the only program organized by Graduate School of Arts and Letters. In the comprehensive university like TU, I would like to see more involvement from the humanity, liberal arts and social science sectors to these activities. At the University of Washington, College of Engineering has formed partnerships with Law and Business Schools to provide opportunities for its engineering graduates who wish to continue their education by pursuing Juris and Business degrees. Training in patent law, intellectual property law and other law school emphasis in addition to their own major can be utilized as unique skills set for their career development. For this, someone in the upper management must work at a strategic level with the dean and other leaders to develop such opportunities.

Topic 3: Enhancing educational internationalization for all students

TU has a long history in engaging in internationalization of the education. Has established various means to promote student’s inbound and outbound mobility through establishing “study-abroad” programs and infrastructures. The data showed an impressive up-swing in terms of numbers, indicating that student’s interest in attending “study-abroad” programs is rapidly increasing. Prof. Hanawa described TU’s experience in this aspect. I believe this is a good way of enhancing educational internationalization.

For Japanese students, one of the obstacles to “internationalization” comes from the language barrier, i.e. English. From my long experience working with Japanese students, this English barrier can be often lowered when they participate in a “short study-abroad” program. By lowering the English barriers, it is always the case that students get “self-confidence” in him/herself. For example, in a program Prof. Kasukabe and I organize at the University of Washington, I let students sit in the class room and listen the lectures of which subjects are already familiar with. Students enjoy listening the lecture without feeling difficulty in understanding the subjects taught. Such experience turns out building “self-confidence” in him/herself and changes their mind set inherently. Interestingly, this process helps increasing his/her desire to participate “longer study-abroad” programs, and even apply to the graduate schools overseas. This observation is at least consistent the fact that 64% of students who applied to the exchange programs had participated in short-term programs (Hanawa’s presentation). A question is how to promote such experience for “all TU students”.

Other issues

None.

東北大学国際アドバイザーボード 2016

コメントおよびご提言

小野寺 正, KDDI 株式会社 取締役会長

東北大学の国際化に関する取り組み全体について

東北大学は国際化に比較的早くから取り組んでおられ、留学生の数、外国籍教員数、外国語での授業数など着実に進展していることが見て取れます。

量的拡大と共に質の向上が重要ですが、この点について評価指標自体を作ることが困難であることは理解しますが、他の大学とは異なる取り組みを明示するなど工夫が必要です。

Topic 1: Strategic global networking for effective internationalization (国際的なネットワーク形成について)

国政的ネットワーク形成の目的、目標を明確にする必要がある。

今回 Exchange Agreements について詳細説明が無かったが、多くの地域・機関と Agreement を結んでおり、交換留学をスタートポイントとして関係を強化していくのも一つの方法である。209 機関全てを同じように扱うのではなく、東北大学としてどの機関とどのような付き合い方をしていくべきなのかよく検討すべきである。Overseas Offices、Liaison Offices が話題になったが、これも目的、目標を明確にする必要がある。場合によっては、Agreement を結んだ機関と相互に Office を提供しあうことも、一つの方法では無いか。

教員・研究者・学生の交流を盛んにするためには、サポートする事務職員の理解をすすめる必要がある。相互に Office を提供すると共に、事務職員の人事交流をすすめるのも効果があると思われる。

Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education (先端的研究と大学院国際共同教育の相乗効果について)

この分野は全く知見を持ち合わせておらず、提言不可能です。

Topic 3: Enhancing educational internationalization for all students (全学生を対象とした学部教育の国際化について)

全学生を対象とする国際化は、短期留学と受け入れた留学生との交流が主なプログラムになると思われる。その場合も目的と目標を明確にすべきである。

単純な語学留学では意味が無く（特に日本人だけを対象とした）、せめて語学留学でも非英語圏の留学生と同室で過ごす、等日本人以外と積極的に交流できる仕組みが必要である。他校の例であるが、PBL の仕組みを取り入れ、相手校の学生と共にその国の課題を考える仕組みも一つであろう。また、総合大学のメリットを生かして、文系・理系混合で一つの課題に取り組むのも良いかもしれない。いずれにせよ、学生にとって何らかの「気づき」を得られる仕組みを考えていただきたい。

その他、本学の国際化に関する取り組みに関しお気づきの点について

大学の国際化についてはどうしても各大学類似の施策が多い。東北大学として何か特徴のある施策を検討する必要がある。

Tohoku University International Advisory Board 2016
Comments and Suggestions

Professor Richard James, The University of Melbourne

Overview of Tohoku University's International Strategies

Thank you for the opportunity to offer comments on the international strategy of Tohoku University.

Context

Tohoku University is already one of Japan's top universities and is likely ranked within the 150-200 band within the world's universities. Clearly, Tohoku University is an outstanding world university. However, it is also the case that Tohoku University's ranking on the Shanghai Jiaotong ARWU has not been improving and has been steadily deteriorating. Further, Tohoku's international standing is achieved solely through its prominence in Science and Engineering. Of course international rankings are not the only, nor the best indicator, of internationalisation but they are important – and they tell us something about institutional performance, and they do help attract the finest students from around the world.

Professor Satomi offered a presentation on the overall strategic vision for Tohoku University, with seven areas of vision. The core elements of the international strategy are embedded in, or relate to, this overall vision, including:

- Development of global leaders
- World-leading level research
- Strengthening of global networks

The key elements in the Tohoku vision that relate to internationalisation are strong and are to be commended. These include:

International Students: utilization of overseas offices for recruitment, on-campus support for international students, some tuition in English, joint programs with other universities, scholarships.

Domestic students: Expansion of foreign language teaching, promotion of and scholarships for study abroad, international internships.

The registration-based Global Leader Program (TGL)

Various research initiatives to foster excellence, foster younger researchers, build intra-university interdisciplinary research, the Organisation for Advanced Studies to foster an international research environment that brings researchers together, and the Tohoku Forum for Creativity.

Topic 1: Strategic global networking for effective internationalization

Tohoku University's global networking is gradually leading to increased student mobility and researcher connectivity. Arranging partnerships through a single integrated scheme is wise.

Engagement with international consortia needs to be considered carefully. These are not always effective. Consortia can be time-consuming, especially large consortia, and the benefits may only be modest. As a general rule, one-to-one Strategic Partnerships may ultimately be of more value. My suggestion would be to focus on a small number of partnerships with the objective of making these quite intensive.

The Overseas Offices are strategically located and this appears to be a sensible strategy for relationship building and for the development of exchange programs and academic engagement.

Overall, I would like to see a clearer argument for how partnerships and consortia are expected to develop into the future to avoid the 'partnerships without clear purpose' problem that I see in many universities.

Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education

This appears to be a well-developed and sophisticated component of the overall international strategy. Of course, the internationalization of research is often easier to accomplish than the internationalization of teaching and learning. Nonetheless, I am impressed by the imagination that lies behind key elements such as the Organization for Advanced Studies (OAS) and the clearly articulated thematic research foci. The joint graduate programs is a very important element. As noted at the Board meeting, the logistical arrangements for joint award programs are complex and often frustrating.

Topic 3: Enhancing educational internationalisation for all students

I believe this to be perhaps one of the most challenging areas in the international strategy. Among the challenges are:

1. Substantially lifting out-bound study abroad and making this an integral component of courses
2. Substantially lifting in-bound students who come to Sendai for sustained periods
3. Providing pastoral as well as academic support for international students.
4. Boosting the number of programs taught in English
5. Raising the number of international faculty and supporting these staff

6. Creating curricula that are genuinely ‘internationally infused’ for domestic students.

It is important to make an international education *inescapable* for Tohoku students. This may involve an overseas experience; it may also simply involve a deeply international curricula.

The engagement of industry and business in recognising the value of internationally-aware and internationally-competent graduates is very important. Tohoku University should continue to involve external stakeholders in assisting with the internationalisation of its education.

General issues for consideration by the leadership of Tohoku University

Establishing clarity of purpose for internationalisation

Most universities these days seek to be internationalised or more internationalised. This is now a commonplace aspiration and its wisdom as a key objective is rarely questioned. However, what the higher education understand internationalisation to mean is often very vague. Internationalisation can mean many things.

So, with this in mind, what, precisely, is Tohoku University trying to achieve with its international strategy? In what way will it become a better university through internationalisation? What things would be different, what would need to change? How will this improve Tohoku University’s national and regional roles and standing? How will greater internationalization improve Tohoku University?

Conversely, how and in what ways would a failure to further internationalise limit Tohoku University’s growth and development or limit the quality of its research, teaching and engagement?

These are obviously not simple questions. But clearer statements and decisions about the precise purpose(s) of internationalisation *for Tohoku University* would be helpful. Personally I would like to see a more integrated international strategy document that defines and sets out *goals, roles and responsibilities, and performance targets and measures*. Such a document helps to build ‘ownership’ across the institution (see the point to follow below). I offer this suggestion aware that there is a tendency in contemporary universities to embed international dimensions within the wider institutional strategy and planning. There are obvious benefits in such an approach, however there are also benefits in having an explicit, stand-alone International Strategy or International Plan document. This is particularly important for universities wishing to make rapid progress and to raise internal and external awareness.

Establishing Key Performance Indicators to measure the progress of internationalisation

Higher education lacks good measures or indicators of internationalisation. Often there is a focus on *input or process* measures rather than *outcomes or output* measures.

I believe Tohoku University might give more attention to establishing very clear targets for the elements of its international strategy, quantitative where possible. These may well already exist but this is not obvious to me. Clear targets linked to accountability and cycles of reporting and monitoring are very important.

Establishing staff and student interest, commitment and ‘ownership’

If we are honest, many students and staff in higher education do not care much about internationalisation. This is not something they see to be a personal priority, or something of interest to them. There are some passionate advocates, however, and universities tend to rely on these people who are often the ‘pioneers’ who carry much of the university aspirations. There is the challenge of understanding how more people within university communities can be attuned to the importance of internationalization. My suggestion is that Tohoku University might consider what kind of internal ‘marketing campaign’ might be developed and implemented to raise the profile of internationalisation and to widely convey the internationalization vision and its importance.

Establishing a culture of change and adaptation

Genuine internationalisation brings tensions, for it challenges existing cultures, values, assumptions and ideas about knowledge. Tohoku University needs to be sensitive to and responsive to the stresses and strains of further internationalising. Is Tohoku University ready to embrace and be changed by the effects of internationalisation?

Establishing the ‘enablers’ for governing and managing the international strategy

At the meeting of the International Advisory Board it was not possible to fully understand and appreciate the planning frameworks that will manage and oversee the overall implementation and monitoring of the international strategy. It would be helpful to be sure that the internal ‘machinery’ (that is, the governance structures and the financial enablers) will successfully focus, coordinate and integrate programs and staff activities.

Tohoku University International Advisory Board 2016
Comments and Suggestions

Professor Marie-Pierre Favre, Institut National des Sciences Appliquees Lyon

Overview of Tohoku University's International Strategies

First of all, the implementation of an International Advisory Board is an excellent initiative. It is crucial to have feedback from external stakeholders representing both the higher education and research sector and the private sector/industry and covering at the same time different regions of the world.

Based on my own experience and perception, I feel that Tohoku University has already a great international development and President Satomi's vision fully integrates the international dimension. I've seen over the past years a real improvement and pro-activeness towards internationalization at different levels of education and research.

TU has been successful in different Government calls such as Global 30 Project and Go Global Japan and this has definitely confirmed the willingness to promote and develop internationalization and at the same time contributed to successful stories thanks to great funds and incentives. The Top Global University project is therefore undoubtedly a wonderful framework to enhance TU efforts and strategy towards internationalization.

Internationalization is a complex process that requires time and constant adjustment and also additional means. This is a trans functional dimension that impacts all stakeholders. Management of change is part of the process.

Based on the experience you already have (various initiatives), you now need to clearly state the international strategy. It might be a specific document with the following content (proposal)

- TU global vision
- 2 or 3 main goals and related activities (existing and potential)
- Actions plan (short-term/for the coming year and long term). You may have a breakdown for each geographical region (Asia, Europe, North America...)
- Milestones/ indicators/ assessment

It is essential to measure the impact of your strategy. Some indicators may be required within the framework of the TOP Global University project, some others might be TU indicators. Dashboard to monitor performance.

Topic 1: Strategic global networking for effective internationalization

Networking and partnerships are essential.

1. Partners/Agreement

You need a great diversity to provide international opportunities for students. South & Central America is a region you may want to develop. There are some very good universities. Make sure all agreements are active.

2. Strategic partnership

Select a few strategic partners (multi criteria decision process). You may want to identify a group of 10? to start with /different regions worldwide (North America, Europe and Asia to start with)

What is a strategic partnership?

Each single faculty member might perceive his/her collaboration as “strategic”!

Identify criteria, internal and external:

- Existing collaboration involving a significant numbers of researchers/students
- Research match/Complementary expertise/Great potential to develop/continue joint research
- Diversity of actions/projects at different levels (Undergraduate, Graduate and Postgraduate level, Structuring actions and projects such as Double degrees, Joint labs. Several Schools and Institutes involved..

In fact, the cooperation between Lyon and TU is to me a great example with an integrated approach of education and research (several disciplines, several research teams, students (UG, G and post G) and researchers mobility, double-degrees, joint lab, a significant number of actors involved...)

- World-class institution
- Tohoku’s target/interest
- Japan’s target/interest
- Good mutual understanding, shared values and vision. Good fit between people. This might be a subjective criteria; however, it is essential too.
- Industries involved
- A specific opportunity of funding
- ...

What do you expect? Make sure this “strategic partnership” choice is shared by the given partner. This will become a mix of TU ambition and a joint/shared ambition/ joint plan/ mutual benefit It has always to be a win-win situation.

3. Overseas and liaison offices

What’s the purpose? Operations? Communication? It might be a good tool to launch/enhance

collaboration. Assessment/evaluation is always needed (indicators). It is also ok to “close” one. In other words, is it an added-value for the cooperation? Or the cooperation would work anyway? Of course, overseas office and liaison offices might play a different role/aim at different goals.

4. Effective networks

What can you bring to the network? What can you benefit from?

- To promote TU
- To benchmark
- To benefit from the network/enhance or develop collaborations, actions /projects that would not be possible on a bilateral basis

Some ideas to enhance that I had previously raised during a liaison office meeting

- Scientific seminars/ participating students from respective university members
- Extension of participants to liaison office session (scientific areas of study, VP International Affairs, VP for Research...)
- Gathering alumni /former participants to a joint event
- Joint projects: group work in distance learning + joint seminar
- Student competitions/contest

Assessment/evaluation is always required, even for a “simple bilateral exchange” agreement.

You have to learn to say “no” or “stop”

It is also a great management and governance tool in order to provide rational explanation to your teams and other internal stakeholders’. A three or five-year period appears to be appropriate for evaluation/review.

Please refer to my PPT.

Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education

HR policy towards international professors. Language (English) requirement? Gender positive discrimination?

DD requires additional work but has to be considered as well as an added-value (with a strategic partner?) for both the institution and the PhD student. It must contribute to a joint research work.

See for example the general agreement that has been signed between INSA and TU. It aims at facilitating the process for both students and supervisors.

Promote international mobility. Short-term and long-term mobility, even though it is more complex to implement (to be linked with strategic partnership).

Training program (English language) adapted to faculty members

Topic 3: Enhancing educational internationalization for all students

“Internationalization at home” = international campus with international students **and** international professors **and** international staff

Promote international mobility to students. They are as well future ambassadors of TU abroad.

Establish a common framework for international mobility. Each School might then adapt consequently. Academic recognition is fundamental for successful mobility. This requires prior to mobility (although subject to change upon arrival) a learning agreement validated by both institutions. It is usually written in a bilateral exchange agreement. Faculty members have then to respect terms of agreement...

Foreign language policy? English language course vs Sciences and engineering in English? Other foreign languages?

Other issues

Organization chart clearly stated. Make it simple and understandable for internal and external stakeholders.

Central office and key contacts in each School/Department

Research 1st? Yes. Employability of students is also a major mission and concern. Whereas the feedback from industry is essential in Europe, I understand it is different in Japan. However, this might evolve. Alumni might also play a role/

Admin staff mobility is also a way to promote and support internationalization.

Please refer also to my PPT presentation for complementary comments/suggestions

Tohoku University International Advisory Board 2016
Comments and Suggestions

Professor Harald Fuess, Heidelberg University

Overview of Tohoku University's International Strategies

Tohoku University has been very active in recent years in expanding its range of international relations through bilateral contracts, participating in multilateral university alliances and by investments into its own institutional infrastructure. However, it still has a long way to go in order to reach its own goals of turning its strength in Japan towards becoming more of a top international research university. My own overall recommendation for the university is to focus on five priority areas:

- 1) Increase the volume of SGU government funding for Tohoku University ten times to give it a realistic chance to become a top global university. This is easier said than done. But the Japanese government needs to be made aware that countries like Germany with a comparable system of public state universities are investing substantially more and also partly longer-term into their major research universities including specific research clusters of excellence through initiatives comparable to the Japanese top global university drive. Japan will be left behind, if it does not do more to support cutting-edge research and institutional innovation on a competitive basis.
- 2) Cutting-edge research in most academic fields by definition is international and collaborative. My core recommendation therefore is enhancing the brain gain/circulation at the faculty member level through innovative measures. A personal connection of mutual trust and respect between scholars seem to be the driving force of functioning (international) cooperation. The crucial question is whether one can establish an institutional framework for facilitating such cooperation as a form of research/academic incubator. But more than anything else Tohoku scholars need to have incentives to reach out in order to draw people in. Research facilities, especially in natural science, medicine and engineering, can be a positive incentive to come but even in the humanities and social sciences a competently-operated library/digital information system is a competitive asset for repeat visitors. Needless to say, intelligent use of funds can indeed provide an academic incentive if used wisely and strategically in creating/supporting longer-term international projects or projects attracting international scholars. It is almost impossible to recruit senior

scholars from overseas for permanent employment or even bring them in for a duration longer than a sabbatical. But I could see the possibility that under circumstances multi-year collaborative research projects with regular stays at Tohoku University for 1-3 months each year may be a flexible, fruitful and beneficial arrangement to both parties (the JSPS Short-S program could be a model but it needs to go beyond one fiscal year to enable multiple visits to truly have a transformative impact). Even more than strategic funding, the key recommendation is to consider personnel management flexibility, for example, by enabling research leaves to your staff to go overseas or participating in an institutionalized faculty exchange arrangement also drawing in their overseas colleagues back to Tohoku in a kind of zipper principle of give and take. While the cooperation of tenured scholars is likely to be the backbone of internationalization, one of the keys to long-term success is to systematically encourage and support the international initiatives of younger scholars, for example, by letting them join international academic conferences in order to initiate international contacts with their peer group.

- 3) Tohoku has started to select core international institutional partners with the Universities of Washington and Melbourne. Such deeper relationships provide potential benefits in institutional cooperation in education and research by reducing “transaction costs”, especially in administrative affairs and in mutual learning of best academic practices. I would suggest to identify a further group of 3-6 research universities to potentially form more strategic partnerships.
- 4) Coordination of internationalization within such a large organization as a university is very difficult process since many bottom-up or top-down initiatives take place without most members of staff noticing such measures and their implementation. Here dynamic mechanisms of fostering cooperation in internationalization would be desirable to create synergies between similar but parallel programs (i.e. in English instruction/Japanese Studies) and motivate young foreign(-trained) staff to participated more in the consultation and decision-making process. Whatever mechanism you choose, my recommendation is to make it as simple, lean, and dynamic as possible in order to avoid the creation of another layer of time-consuming bureaucratic committee structures that may be more stifling than enabling.
- 5) One of the core slogans of Tohoku University is to be an open university. To me this means to also be an institution that fosters excellence in a comprehensive range of academic disciplines including humanities, social sciences, law, and economics. Increasing the

international visibility in these areas enhances the standing of Tohoku University as a comprehensive university overall. Incidentally the male to female ratio among students and faculty members, especially at the level of senior faculty members is such that the number of women are far too few by comparison with other top international research universities. It is in the above mentioned academic disciplines that female students and academics are more likely to concentrate so by strengthening these fields you could both internationalize and be more inclusive at the same time (i.e. able to recruit more widely from a diverse talent pool). Certainly my university has benefited greatly academically from this approach and through third party funding invested heavily in what one may very broadly call “International Cultural Studies”.

Topic 1: Strategic global networking for effective internationalization

What is the overall strategy in developing your network and what is the unique quality of your partnerships? If you are trying to cover everything without setting priorities, this will be a lot of administrative work and may not help you to differentiate yourself from your Japanese competitors. As already mentioned above, my suggestion is to deepen the institutional relationships with selected partners. In the same way you could decide to look for potential synergies between academic disciplines through a stronger regional focus in your international relations. The core challenge is to integrate university networking activities with needs/interests of faculties/research institutes so it will be carried forward more broadly in the future.

Positive I found your far-reaching international networking activities, the two strategic university partnerships and your inclusion in high-profile academic alliances with a strategic purpose like HeKKSaGOn. I also noticed that you have specific and real relations with parts of the world that other Japanese universities have been neglecting like France, Germany, Australia, Thailand and Russia.

Nevertheless, despite all these efforts Tohoku University seems to have the reputation to be the “least international” among the top five Japanese research universities. The drive to increase the number of foreign-(trained) academic staff to over one thousand is commendable, but unless you are also creating long-term career perspectives you are likely to lose the best young foreign scholars again because they have alternative job markets. One of the major changes in academic life in the last decade is the advance of East Asian research institutions, I would recommend a more clearly articulated international strategy of regional cooperation, especially for student recruitment. As natural/physical/medical sciences are a priority area in your top global university endeavor I would

expect that you also target some research institutions known especially for their strength in that field without falling into the name-dropping trap of having a formal contract with a brand name university without actual content. You asked about the effective usage of overseas liaison offices. I am sorry to say that in my experience so far they have more symbolic than actual value. As for research collaboration, staff members usually lack the depth of knowledge and even in terms of student recruitment, it is more effective to obtain the collaboration of local faculty members whose opinions may be most influential locally.

Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education

The effective connection between cutting-edge research and graduate education is the key area to improve your appeal in the (international) academic world"! Graduate education at top research universities is per definition VERY international and this is the usual vehicle for effective academic mobility of future researchers and scholars but even future leaders in other professional fields also increasingly seek further academic training. Developing synergies between research strength and graduate/postgraduate training is the most effective way of using the most precious of all university capabilities, namely academic human resources of scholar-teachers.

The planned integrated international graduate school program at Tohoku University supported by doctoral fellowships is a most promising initiative, especially if effectively integrated with the OAS joint laboratories with 50% foreign postdocs. I would initially create fewer larger interdisciplinary training centers (with training possibility in English) until you have acquired the critical mass for further differentiation. As for the three proposed categories of collaborative degrees, I would suggest to rename the entry-level cooperation "joint graduate training". My experience is that the "supervision" terminology opens up an institutional can of worms at least with German universities (who is ultimately responsible? How is the participation of overseas faculty members in oral dissertation defenses/exams paid for when skype exams are institutionally frowned upon? What is the legal significance of certificates?). The complications of "joint-supervision" can be similar to the case of the "double-degree" category without really adding the additional benefits of much greater flexibility.

An issue of note for "double degree" is that to my knowledge Tohoku University has so far been unable to state in its doctoral degree diploma that the PhD is part of a collaborative arrangement with another university, which is one of requirements for co-tutelle arrangements in Europe to prevent students from claiming that they have written two separate dissertations when they are

getting two diplomas for one integrated work of scholarship and examination procedures. Currently the problem is dealt with through diploma supplements, which may not be a sufficient arrangement in the longer-term future.

Joint degrees at the M.A. level are now possible in Japan as we are exploring in the pioneering Heidelberg M.A. Transcultural Studies collaboration with Kyoto University but Monkasho “quality control” practices need to be simplified, if this is supposed to become a model for broader appeal in Japan. This being said, because the institutional barrier to entry is so high, joint degree systems in Japan may also serve as protected space for academic trendsetters. In either case, I find Japanese universities often to be too slow in institutional decision-making and I wonder why it should take another three years (2019) to start some of the intended graduated programs.

Tenure is the bottleneck ritual in all university systems worldwide. This means, one can get the “most brain for value” at the postdoc stage of academic careers as we produce more PhD students than will eventually become university professors. If you have the funds, I recommend to further strategically recruit younger foreign scholars through longer-term postdocs! The key variable is to have an open recruitment process in place whereby people who have not graduated from your own university have a chance of acceptance.

Topic 3: Enhancing educational internationalization for all students

Recent years have seen much effort in getting Tohoku students overseas starting from pre-College California fun to taking undergraduate student delegations on short-term trips to creating classes in English for your own students and for exchange students. We have seen investments in scholarships to foster exchange in multiple directions as well as the establishment of some very nice housing facilities (I myself lived in the Katahira International House for a month).

My recommendation is to focus now on exchange arrangements of longer duration of at least 6 months to one year, since this is the time required to shift from experiencing an overseas trip as short-term holidays to more serious cultural and academic immersion when there will no longer be special treatment. This means that you need to develop systems of credit transfer so that your students do not “loose” time towards their degrees at home and you show respect for the academic quality of your selected overseas partner universities. Instead of having a small exchange cohort of three students per university, you should increase these university exchange numbers for selected partners (as well as provide priority financial incentives for such relationships).

One of the core question now seems to be how to develop further or bundle your English-language offerings. My experience shows that students are often interested to know more about their own subjects, which could be a driving force of acquiring the linguistic capability in a foreign language. Offering (mandatory) subject classes in English could be thus a way to make sure English-classes will not only be taken by foreign exchange students, who will then complain that they meet no Japanese student in the classroom. The strategic question for you will be: are you simply aiming for English-enhancement in existing programs, a small cluster of programs aimed at foreign students, or will you one day create an undergraduate English-language liberal arts faculty, for example, with a strong emphasis on lab science or IT subjects.

Other issues

In Japan “internationalization” often means “speaking English”. Aiming for common platforms of communication and values is important in order to integrate multi-cultural and interdisciplinary dimensions to foster the spirit of a leading research university. The key challenge will be to effectively align a drive for internationalization with an aim for higher overall quality in research and education. So merely increasing the number of foreign students and scholars can’t be a goal in itself but being able to create a desirable environment for the world to study and work is an aim to strive for that will also benefit you. Any research university in the world that is able to square that circle effectively will have a long-term competitive advantage.

Tohoku University International Advisory Board 2016
Comments and Suggestions

Dr. Kriengkrai Boonlert-U-Thai, Chulalongkorn University

Overview of Tohoku University's International Strategies

TU's International Strategies fit TU's Global Vision very well and are well established. It is impressive that TU has very much invested in knowledge as a world-class university to pursue international excellence in education and research.

Current strategies are on Innovation, Rankings (as a world-class university), and Creation of a sustainable world society. My suggestion will be on other strategies that TU can do such as providing services to societies and enhancing Japan and TU's Arts and Culture.

Topic 1: Strategic global networking for effective internationalization

Executive Vice President Toshiya Ueki introduced 4 strategic global networking including (1) Exchange Agreements, (2) Overseas Offices and Liaison Offices, (3) Strategic Partnership, and (4) Consortia with World's Top Universities and shown me how expert and professional he is on the TU's internationalization strategies. My personal observation on TU's internationalization for the last 5 years confirms that VP Toshiya Ueki with a strong support from President Satomi and TU's administrators has been locally and internationally so successful in building internationalization on campus. My suggestions will be on some changelings as follows:

1. How to sustain existing projects once the Top Global U Project is finished in 2024?
2. Since TU's focus is on Education and Research, the Impact to societies and stakeholders should be focused.
3. Since Top Global Projects focus on non-Japanese language, how about Japanese or regular programs which are majority of the programs here at TU?
4. How to utilize the networks (i.e. APRU, AEARU?)
 1. 1-2 year action plan (i.e. outside research funding from UNESCO, USAID?)
 2. How to have more things we cannot do using our own bi-lateral contract but the network can.
 3. How to systematically enhance research and academic collaboration from these

network?

4. Is it worth to host APRU Multi-hazards program?

- ROI or Costs Vs Benefits (fin and non-fin indicators) of having an oversea office
 - Can we use this office to enhance Faculty mobility as 1st priority; Local community Engagement Abroad & Long-distance conferences; Int'l student recruitment in int'l and regular programs (i.e. 1 PhD student who will be a faculty member); U-Industry cooperation abroad? Ask your staff to visit each of the faculty during the year and have the network. => Win-Win partnership.
 - How to have more faculties or schools participate (rather than U-Level office) on this oversea office?

Topic 2: Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education

Prof. Sadayoshi Ito, Executive VP for Research and Prof. Masahiro Yamaguchi, Associate Executive VP for International Affairs and Special Advisor for International Affairs have done so well in presenting and sharing synergetic effects on collaboration between cutting-edge research and international joint graduate education of TU for the past years. I'm very impressed in their initiatives and leadership. What TU has done on these strategies is above the standard of world-class universities. My minor suggestions will be on the following:

- How to encourage top TU researchers who normally publish in top local (or Japanese) journals to publish their work on ISI/Scopus databases?
- How to encourage Social Sc. Faculty to publish more or above world standard?
- How did TU do in attracting leading organizations to join your Spintronics?

Topic 3: Enhancing educational internationalization for all students

What TU has been doing for enhancing educational internationalization for all students is very good and above a world standard. My minor suggestions will be on the following:

- (1) How to make the credit transfer system more effective so that TU students can graduate on time?
- (2) How to have "Internationalization DNA" in all divisions of the university?
- (3) How to bring internationalization to students in regular programs which are conducted in Japanese or other local languages?
- (4) How to mingle international students with local Japanese students on campus?

Other issues

- (1) How to secure some ranking indicators (i.e. Scopus publication, Scopus Citation, Academic and Research reputation scores, Full-time students and faculty who are international, Industry Income, etc.) even though we don't do things for Rankings?
- (2) How to secure TU's sustainability on government funding and self-revenue generation?
- (3) Faculty member development (i.e. English proficiency, int'l publication, research support, teaching and learning innovation, incentives) is important and should be part of TU's key strategies.
- (4) How to sustain the relationship with university partners at the **individual faculty** level? (i.e. OIA opens the door, but Faculty has to maintain the relationship)
- (5) Is one-month official leave per year possible to your faculty members to visit partner universities and do research during the summer? => Pros: Increase in'l co-authorship, publication, citation.
- (6) How to increase Internship Abroad Opportunities? Can Student Exchange be a compulsory for some pilot programs?
- (7) How to balance Basic research & applied research?
- (8) How to maintain Univ Identity and Uniqueness?
- (1) How to include "World Concern" as part of your int'l strategies including 21st Century Skills and UNESCO Sustainable Goals.



Things we have achieved so far: Outline of Tohoku University and the Global Vision



Tohoku University
President
Susumu Satomi

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Who we are



Founded in 1907

Research First



Open Doors



Practice-oriented
Research and Education

Facts and figures

17,845
Students

10 Faculties

16 Graduate Schools

6 Research Institutes

207 University-level International

Agreements between

35 Countries & Regions

1,989
International
Students

6:1
Student to
Faculty Ratio



**4.08 Million
books in
5 Libraries**

4 Overseas Offices
12 Liaison offices

**411 Department-level
International
Agreements between
52 Countries & Regions**

3

Five + new campuses in Sendai



4



What Tohoku University pursues

- Achieving further development based on Tohoku University's founding spirit and historical tradition

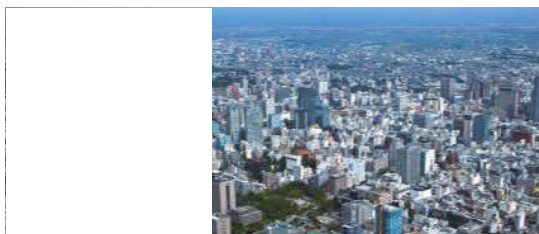
Achieving World-Class Status and Leaping Ahead



We strengthen our efforts to cultivate individuals equipped with the ability to respond to global society, who have combined excellent linguistic and communication skills, by enriching our academic foundation and further improving our level of research and education.

Leading the Post-Earthquake Restoration and Regeneration

Tohoku University has established the Institute for Disaster Reconstruction and Regeneration Research, under which we have currently been engaged in eight large projects and more than 180 various Reconstruction Action projects to support the reconstruction of the Tohoku region and the revitalization of Japan.



5



Tohoku University Global Vision (Satomi Vision)

Achieving World-Class Status and Leaping Ahead

VISION 1 Education

- Development of global leaders
- Creation of a global learning environment
- Improved/enhanced student support

VISION 2 Research

- Enhancement of support for young researchers
- Promotion of a world-leading level of research
- Establishment of a flexible personnel system

Leading the Post-Earthquake Restoration and Regeneration

VISION 3 Post-earthquake Restoration

- Steady execution of Tohoku University Reconstruction Action
- Implementation of new projects
- Dissemination of lessons and knowledge obtained from the Great East Japan Earthquake

VISION 4 Industrial-Academic Cooperation

- Launching of University-funded projects
- Strengthening of cooperation with industry
- Establishment of the COI base
- Establishment of the Head Office of Enterprise Partnerships

Globalization

Combine the strength of diverse individuals

Innovation

The University as a fellowship of knowledge, open to the world, where people gather, learn, and create

VISION 5 Cooperation with the Community

- Establishment of intellectual communities
- Expansion of network of Tohoku University Shuyukai Alumni Association
- Strengthening of global networks

VISION 6 Campus Environment

- Creation of a multicultural campus
- Post-earthquake reconstruction
- Intensive development of the new Aobayama Campus

VISION 7 University Administration

- Strengthening of the governance system
- Promotion of gender equality
- Promotion of compliance
- Intensive support under the leadership of the President
- Strengthening of Tohoku University Hospital

Creating a venue that enables individual University members to fully utilize their individual abilities rooted in their diverse values and pursue their continued growth

Research First

Open Doors

Practice-Oriented Research and Education

6



重点战略

Education

Create a place where students grow into individuals capable of flourishing in the international community

- 1 Educational reforms, aimed at fostering global leaders, centered on improving the humanities curriculum
- 2 Creation of a global learning environment
- 3 Improved/enhanced student support

7



Tohoku Students' Key Competencies for Global Leaders

1. Specialization

The ability to deeply understand one's own field of study

2. Broad perspective

The ability to look at things from a multidimensional perspective and make a judgement by various criteria

3. Problem identifying and problem solving

The ability to identify where problems exist from a multi-faceted, broad perspective, make earnest efforts to resolve the problems, and create a new situation or value

4. Cross-cultural/international understanding

The ability to understand and respect the history and culture of other countries and regions, while having an understanding of Japanese history and culture and retaining a sense of identity as a Japanese national

5. Communication

Skills high enough to communicate with others; presentation ability; and writing ability

6. Leadership

The ability to take a leadership role in proactively resolving/overcoming problems through a deeper level of communication and cooperation

8



Internationalization of Education

—Nurturing leaders equipped with a high degree of sophistication, specialized knowledge and a global perspective—

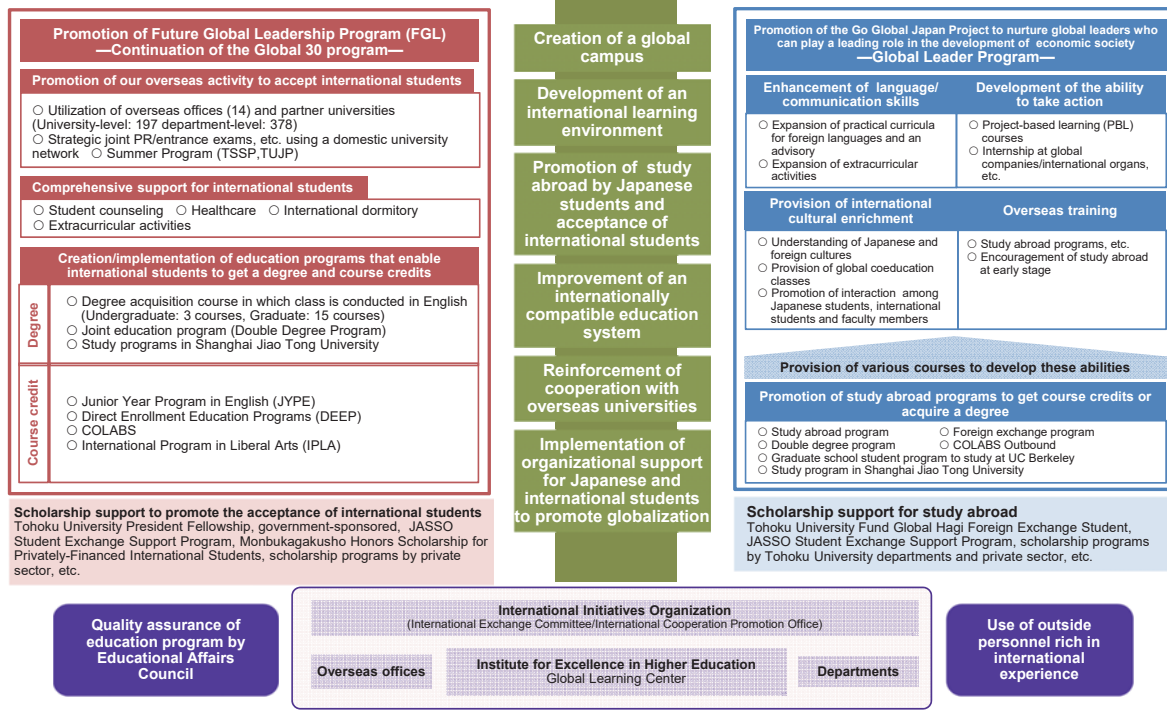
International students

Aiming for an integrated education and learning support system

Domestic students

Providing high-quality international education and disseminating the results of our efforts toward globalization

Nurturing global leaders who are always prepared to take on new challenges and break new ground

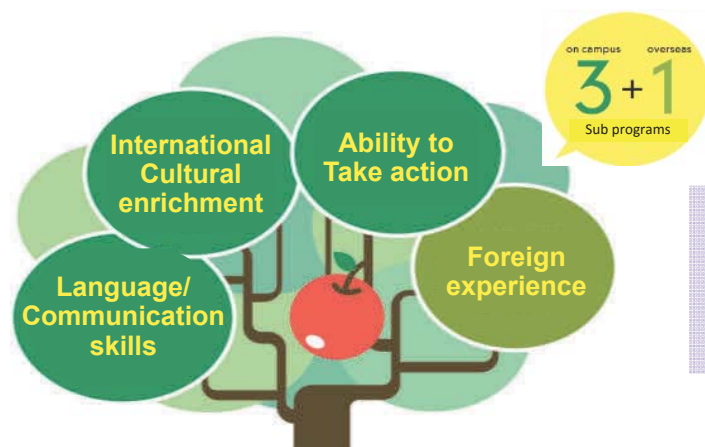


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Tohoku University Global Leader Program (TGL Program)

- Adopted as a Go Global Japan Project (2012–2016)
- Registration-based education program for undergraduate students
- **Designed for students to enhance language/communication skills, international cultural enrichment, and the ability to take action, mainly through overseas training**
- Positioned as a pilot program for the restructuring of liberal arts and sciences education



Combination of regular classes and extracurricular activities

Certification of Program completion
-Award of a TGL certificate
-Certification as a global leader

Strong foundations in specialties

10



Creation of “International Joint Graduate Programs”

- Selection of fields of study which Tohoku University can serve as an engine for by taking full advantage of its strengths and fields of study which are expected to become important in contributing to further development of human beings
- Implementation of joint education by bringing together the wisdom of Tohoku University beyond the boundaries of departments and promoting closer cooperation with leading universities overseas

Objectives and roles

- [1] Developing human resources with outstanding capabilities who can respond to present-day needs and play a leading role on a global stage
- [2] Creating cutting-edge education programs that contribute to strengthening research abilities
- [3] Establishing a future intellectual foundation, creating innovation that shores up international competitiveness, and playing the role of an engine for realization of a sustainable society

General description

- Cross-departmental/degree-awarding graduate programs
- Joint education by Tohoku University and its partner university faculty members
- Gradual transition from joint education to double degree, and joint degree
- Creation of 7 or more programs within five years from FY2014

Seven International Joint Graduate Programs

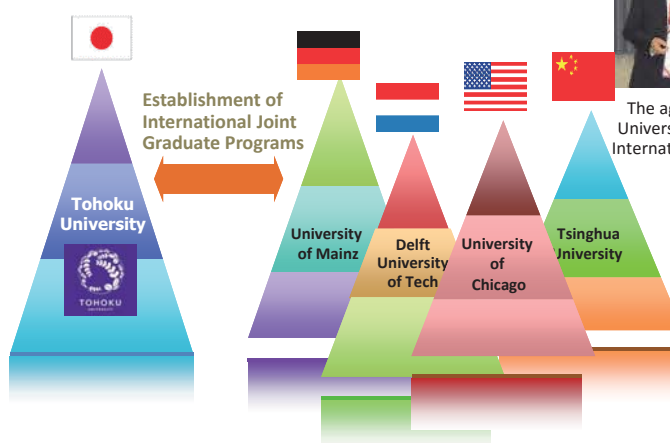
Expansion of the world's top ten fields of study

Spintronics (2015)	Material Science (2019)
Cosmological Physics (2017)	Earth Science (2016)

Challenge to new fields of study

Data Science (2017)	Life Science (Brain Science) (2018)
Disaster Science/Safety Science (2019)	

Example in the Field of Spintronics



The agreement with the University of Mainz for the International Joint Graduate Programs (Spintronics)

11



重点戦略

Research

Create an open environment in which excellent researchers will gather

4 Environment/support systems that extract diverse research abilities

5 Striving for a world-leading level of research

6 Research that solves problems and contributes to human knowledge

12



Frontier Research Institute for Interdisciplinary Sciences

- Established in April 2013 under the leadership of the President to combat a decline in the number of young researchers and to invite excellent researchers from around the world

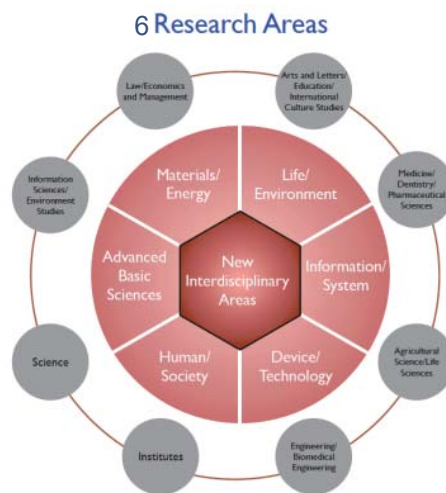


Institutional Goals

- ✓ To promote cutting-edge interdisciplinary research by full-time faculty members
- ✓ To explore intra-university interdisciplinary research
- ✓ To foster young researchers

5 Programs

- Program to Promote Interdisciplinary Research
- Program to Support Interdisciplinary Research Activities
- Fostering Young Researchers (Shoushi Program)
- Program to Support the Establishment of an International Research Center
- Overseas Cooperative Research and Presentation Support Program



13



Advanced Institute for Materials Research (AIMR)



Established as one of nine World Premier International Research Centers Initiative (WPI) Programs in Japan

- ◆ World-class researchers in the fields of **materials science, physics, chemistry, engineering and mathematics** work together to realize a new phase of materials science
- ◆ Cutting-edge research facilities and environment
 - More than half of researchers come from outside Japan
 - Official language: English
 - Comprehensive research support

Three International Research Institutes for establishing AIMR Joint Centers

Europe

University of Cambridge
the Department of Materials Science and Metallurgy
the Department of Chemistry

North America

University of California, Santa Barbara
the California NanoSystems Institute

Asia

Institute of Chemistry, Chinese Academy of Sciences (ICCAS)

Device/Systems Research Group



Interface Unit



Mathematics Unit

Bulk Metallic Glasses Research Group



Materials Physics Research Group



Soft Materials Research Group

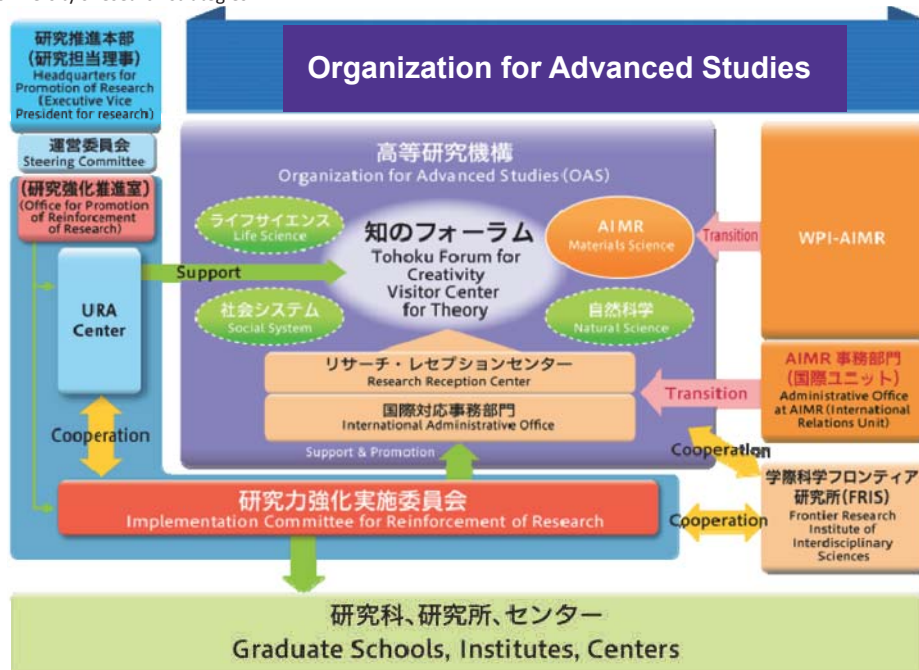


spin-ARPES

Organization for Advanced Studies

Purpose of Establishment

The mission of the Organization for Advanced Studies is to establish an international research environment and research support system where world-class researchers will gather and create new fields of study that will surpass the existing academic disciplines, based on Tohoku University's research strategies.

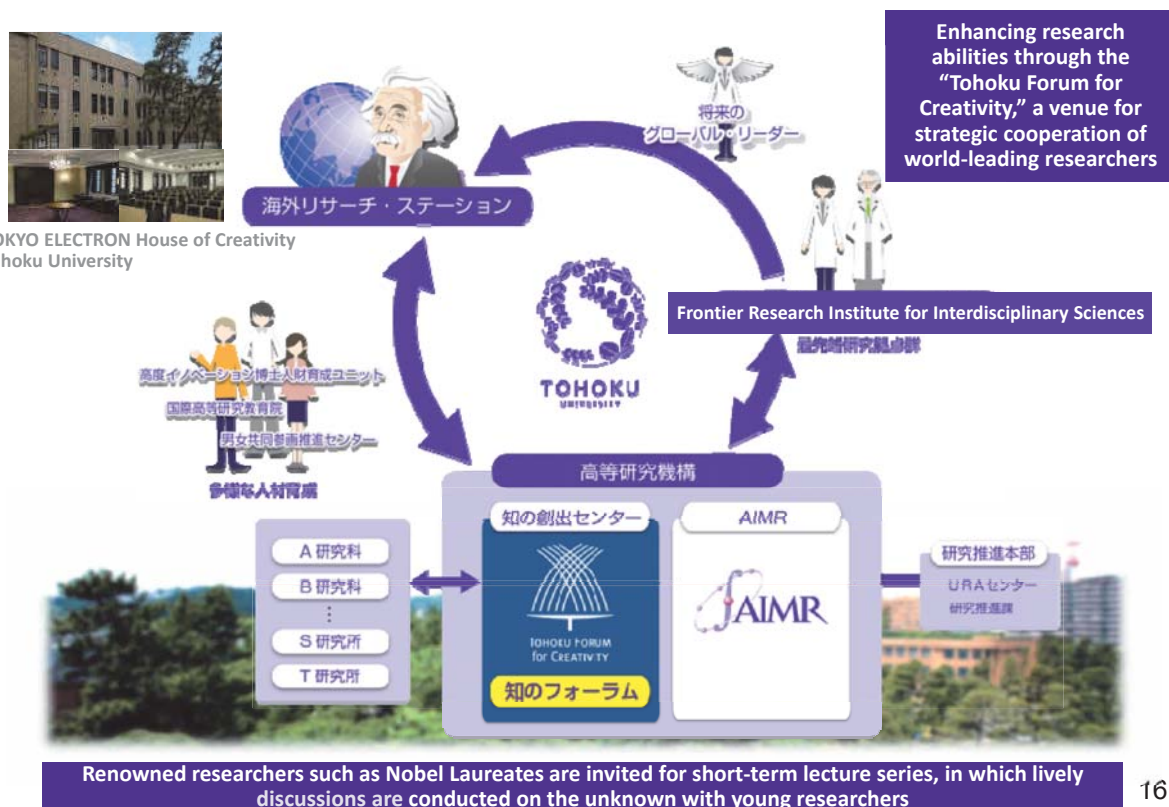


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Tohoku Forum for Creativity



TOKYO ELECTRON House of Creativity
Tohoku University



16



TOKYO ELECTRON House of Creativity



International Research Project on Disaster Science (IRIDeS)

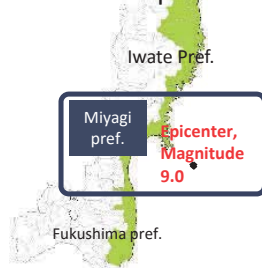
- ◆ Launched in April 2012
- ◆ Experience and lessons learned from historically devastating natural disasters
- ◆ Innovation of the past paradigm of disaster management to "low-frequency catastrophic natural disaster"
- ◆ Creation of a new academic field of disaster mitigation to reduce or avoid the potential losses from natural hazards
- ◆ Established the Global Center for Disaster Statistics in April 2015 in cooperation with UNDP



18



Great East Japan Earthquake

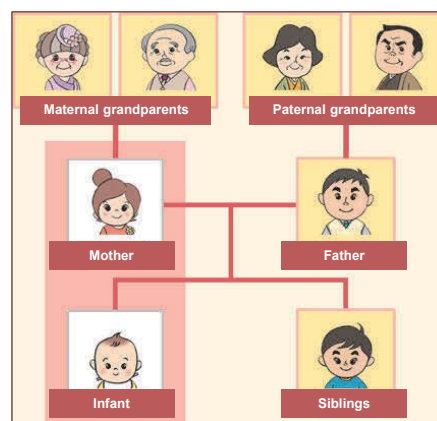


Need for mid and long-term care for health damage



A large-scale biobank to combine medical and genome information

- Collected 150,000 Japanese participants' biological specimen through:
 - (1) Regional cohort study
 - (2) **Three generation cohort study**
- Completed 1,000 participants' genomic analysis in 2013



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Message from the President



We are committed to contributing, step by step and reliably, to the creation of a brighter future for human beings. Toward this end, we think and act together and share the joy of achieving our objectives.

Tohoku University
President
Susumu Satomi

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20



Tohoku University Global Initiative

The Top Global University Project in Tohoku University

November 25, 2016

Toshiya UEKI, Executive Vice President

Tohoku University International Advisory Board 2016



1



Top Global University Project (2014-2024)



Purpose, targets and structure

- To internationalize Japanese universities through **links with overseas universities and university reforms**
- Priority support is given to global universities that have **top, world-level education and research programs** and drive the internationalization of Japan's higher education

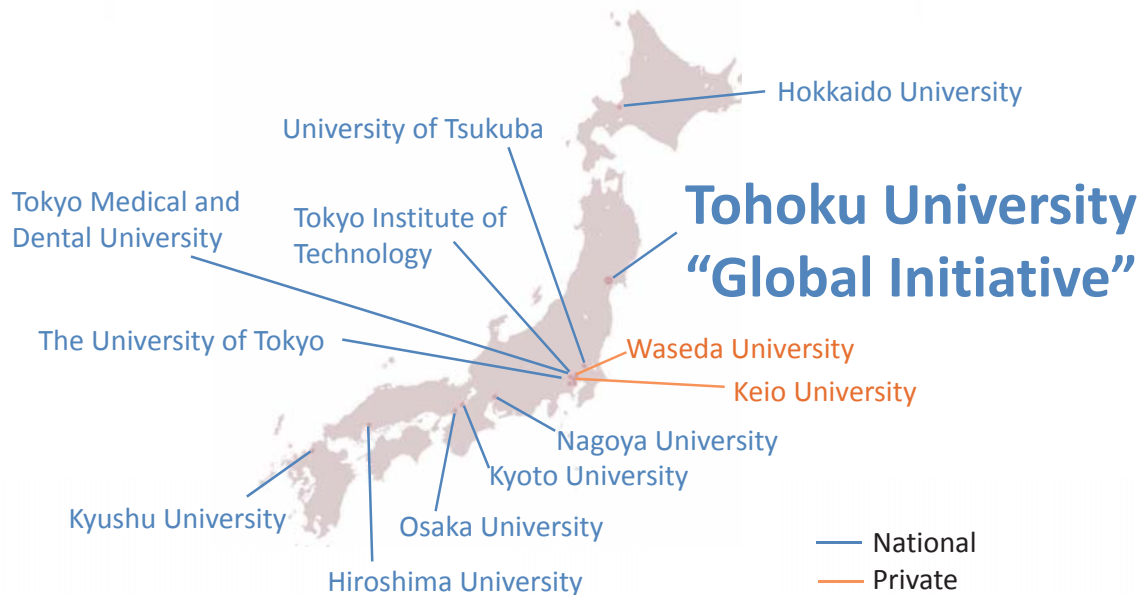
Type A: "Top Type" for world-class universities that have the potential to be ranked in the top 100 in world university rankings

Type B: "Global Traction Type" for innovative universities that lead the internationalization of Japanese society, based on continuous improvement of their current efforts



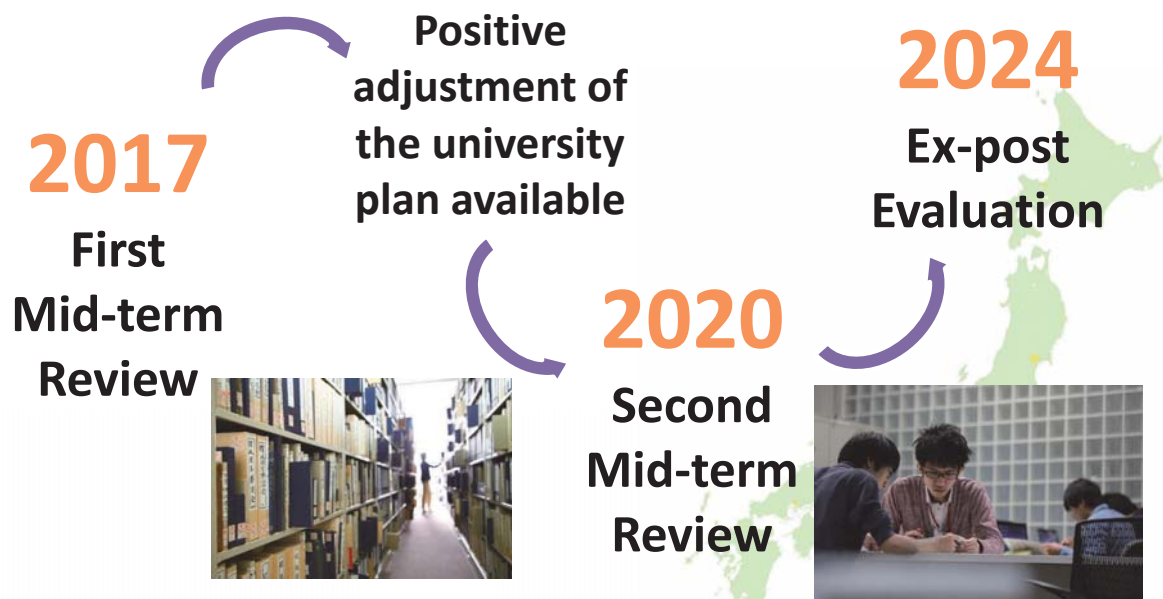
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Results of selection in 2014: Type A “Top Type”



3

Assessment phases



4

What is Tohoku's "Global Initiative"?

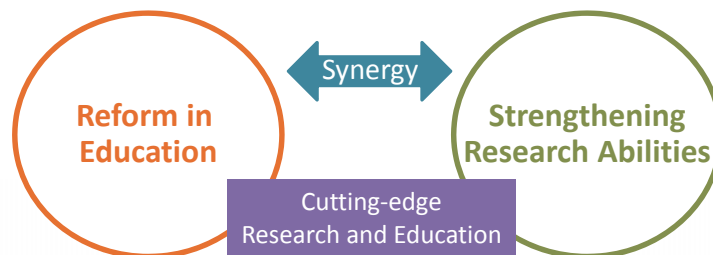
Tohoku University Global Vision

The university as a fellowship of knowledge,
open to the world, where people gather, learn, and create.



Tohoku University Global Initiative

Investing in knowledge as a world-class university
-Pursuing international excellence in education and research-



Reform in Education and Research with Internationalization Initiatives

5

Tohoku University's Global Initiative



TOP GLOBAL
UNIVERSITY JAPAN

Numerical goals set for the "Global Initiative" plan (extract)

	2016	2019	2023
International students	2,300	2,800	3,200
Students studying abroad to earn credits	600	900	1,300
Foreign-nationality faculty members and regular faculty members who have obtained degrees abroad	933	995	1,088
Participating number of students for international joint education programs: Outbound	25	50	100
Participating number of students for international joint education programs: Inbound	60	120	200
Programs that can be completed using only non-Japanese languages	26	35	43

6

University reform for the aims of TGI



Enhancement
of
Global Networking



Synergy of Research
and
Graduate Education



Educational Reform
through
Internationalization

7

Topics for Discussion

Enhancement
of
Global Networking

Topic 1: Strategic global networking for effective internationalization



Synergy of Research
and
Graduate Education

Topic 2: Synergetic effects of collaboration between research and graduate education

Educational Reform
Through
Internationalization

Topic 3: Enhancing educational internationalization for all students





Strategic Global Networking for Effective Internationalization

November 25, 2016

Toshiya UEKI, Executive Vice President

Tohoku University International Advisory Board 2016

1



Strategies of Global Networking

I. Exchange Agreements

II. Overseas Offices and Liaison Offices

III. Strategic Partnership

IV. Consortia with World's Top Universities



I. Exchange Agreements

Tohoku University's Academic Exchange Agreements

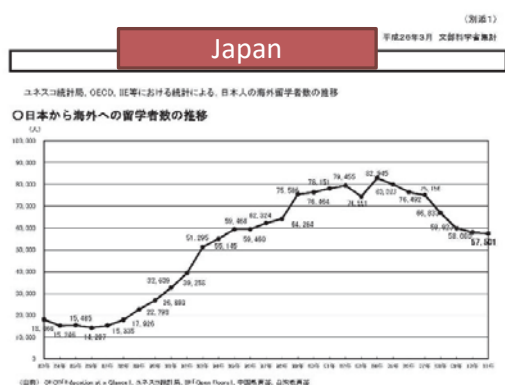


209 institutions in **36** Countries/regions

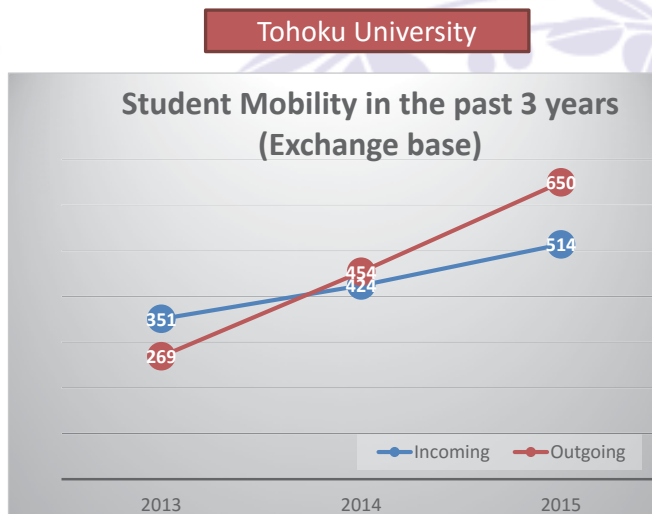
3



I. Exchange Agreements



Tohoku University International Festival





II. Overseas Offices and Liaison Offices



II. Overseas Office (1)

China Office

since 2007
in Beijing

Activities

- ✓ Networking Chinese Scholars and Professors who studied at Tohoku University (Tohoku University's Alumni in China)
- ✓ Providing information on student recruitment and admission system to higher education
- ✓ Support of promotion of Tohoku's FGL program at top high schools in China
- ✓ Support office for researchers exchange





II. Overseas Office (2)

Russia Office

since 2010
in Moscow

Activities

- ✓ PR function in Russia about Tohoku and other Japanese universities
- ✓ Liaising Russian students who want to study in Tohoku and other universities in Japan
- ✓ Supporting researchers and students of Tohoku who want to study and research in Russia, including M. V. Lomonosov Moscow State University
- ✓ Exploring study and research opportunities in Russia



II. Overseas Office (3)

Russia Office Siberia Branch

since 2010
in Novosibirsk

Activities

- ✓ Providing similar activities with a Moscow branch in the Siberia region
- ✓ Promoting academic exchange between Tohoku University and Russian Academy of Sciences Siberian Branch





II. Overseas Office (4)

Thailand Office

since 2016
in Chulalongkorn
University, Bangkok



- Actions and future plans**
- ✓ PR function in Thailand
 - ✓ Collaborative development of student exchange programs with partner universities in Thailand
 - ✓ Admission venue of the FGL Program for Thai students
 - ✓ Establishment of Tohoku Alumni of Thailand and its support

Chulalongkorn University
จุฬาลงกรณ์มหาวิทยาลัย



II. Overseas Offices and Liaison Offices



International Joint Laboratories



Name	Established Date	Research Themes
ElyTMax Joint Lab between France and Japan	1 st January, 2016	Materials and Systems under Extreme Conditions
TOP-MASS Joint Lab with University of Science and Technology Beijing	17 th November, 2016	Materials Performance and Reliability in Service



III. Strategic Partnership



III. Strategic Partnership (1) with the University of Melbourne



Objective

To increase cooperation between the University of Melbourne and Tohoku University through teaching, research and engagement such as:

- Joint research activities
- Exchange of academic staff and resources
- Student exchange for study and research
- Co-organization and participation in postgraduate programs



Actions in 2016

10-11th
November, 2016

Melbourne-Tohoku University Day

- Research Workshop in Materials Science
- Professional Development Training Program
- Discussion for future academic collaboration





III. Strategic Partnership (2) with the University of Washington



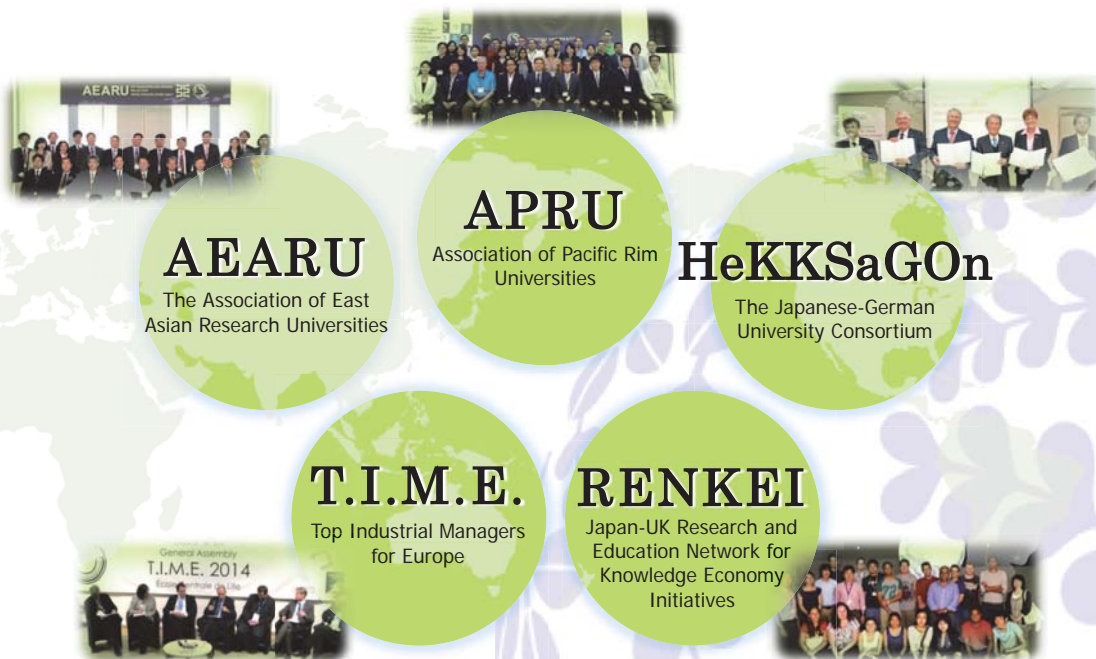
- Create an international hub for vibrant research collaborations, teaching, and information exchange.
- Provide a new paradigm for international exchange and education.
- Facilitate communication at the administrative level to promote *transnational* understanding in research, education and intellectual property at partner institutions.

Roles of the UW-TU:AOS office

- (1) **Educational and interactive roles:** Student exchange, Study-abroad programs, new courses
- (2) **Research roles:** Organize a WEB-X based research seminar between UW and UT, build global industry-academia cooperation, provide a research forum/workshop.
- (3) **International administrative infrastructure:** Organize international forum for administrative staff and IP management training.



IV. Consortia with World's Top Universities





IV. Consortia with World's Top Universities



AEA 東亞研究型大學協會
東アジア研究型大学協会
동아시아연구중심대학협의회
The Association of East Asian Research Universities

AEARU
The Association of East Asian Research Universities
Membership
since 1998

- ✓ To form **a forum for the presidents of leading research-oriented universities in East Asia**
- ✓ 18 prestigious universities from Japan, China, Hong Kong, South Korea and Taiwan
- ✓ The following activities were hosted by **Tohoku University**:

Research Workshop on

- Advanced Materials (May, 2002)
- Advanced Materials (November, 2009, collaborated with POSTEC and Nanjing University)
- Web Technology and Computer Science (September, 2016)

Student Summer Camp (July-August, 2002)

Symposium on

"Collaborations with Industry, City, and Public: Our Dreams towards International Industry-Academia-Government Cooperation" (March, 2008)

Annual General Meeting and Board of Directors Meeting



IV. Consortia with World's Top Universities



APRU
Association of Pacific Rim Universities
Membership
since 2008

- ✓ Established in 1997 to develop a premier alliance of research universities as an advisory body to international organizations, governments and business on the development of science and innovation as well as on the broader development of higher education. The vision now encompasses focusing new knowledge on the global challenges affecting the region.
- ✓ Member universities are 45 from the Pacific rim countries
- ✓ **Tohoku University** has taken **a leading position** especially in **Key Initiative C: Multi-Hazards Program** since 2011.



APRU
Multi-
HAZARDS
PROGRAM

Need for scientific contribution
in disaster risk reduction (DRR)





IV. Consortia with World's Top Universities



HeKKSaGOn

The Japanese-German
University Consortium

Membership
since 2010

- ✓ The German-Japanese University Network established in 2010 as a foundation to further develop international cooperation and exchange of ideas in education, research and innovation fields **to further advance science, technology, industry and culture between member universities.**
- ✓ Heidelberg, Kyoto, KIT, Tohoku, Göttingen and Osaka are the member universities
- ✓ **Tohoku University** hosted **the fourth Presidents' Conference in 2015** as well as assumed **a Chair and Co-Chairs of the Workshop Meeting in 2016** of five research fields.
- ✓ Three Tohoku graduate students participated the first **Students' Workshop** in 2016 conference



IV. Consortia with World's Top Universities



RENKEI

Japan-UK Research and
Education Network for
Knowledge Economy
Initiatives

Membership
since 2012

- ✓ a new platform launched in 2010 for a dynamic partnership between the UK and Japan in industry and higher education with 6 + 6 universities of both countries
- ✓ EVP Ueki is a member of representatives meeting with the other three senior leaders from Kyoto University, UCL and the University of Southampton
- ✓ **Tohoku University** played host to **the Workshop** "Understanding Global Challenges through Collaborative Research and Fora" in 2015





IV. Consortia with World's Top Universities



T.I.M.E.

Top Industrial Managers
for Europe

Membership
since 2007

- ✓ Established in 1989 and now being as a network of 53 technical and engineering universities and institutions from around the world
- ✓ **Tohoku University** joined T.I.M.E. in 2007 as the two of first universities from Asia region with Keio University
- ✓ **Tohoku** played host to **the General Assembly in 2015** to introduce the university's intention of promoting Double Degree graduate programs in science and engineering for promising students



Summary- Strengths

1. Gradually see actual effects of international partnership agreements in **increasing student mobility**
2. Strategic partnership is successful in **inviting engagement of different stakeholders in Tohoku** (researchers, students, senior leaders, internationalization experts and administrative staff) under a single partnership scheme
3. Has used some of international consortia to **promote Tohoku's excellence in specific research fields and researcher and student exchange** by initiatives of leading researchers and senior leaders





Challenges

1. How can we strategically **utilize overseas offices and liaison offices**?
2. How can we maximize **the effect of international consortia** (AEARU, APRU, HeKKSaGOn, RENKEI, and T.I.M.E.)?



Internal Networking for Global Networking

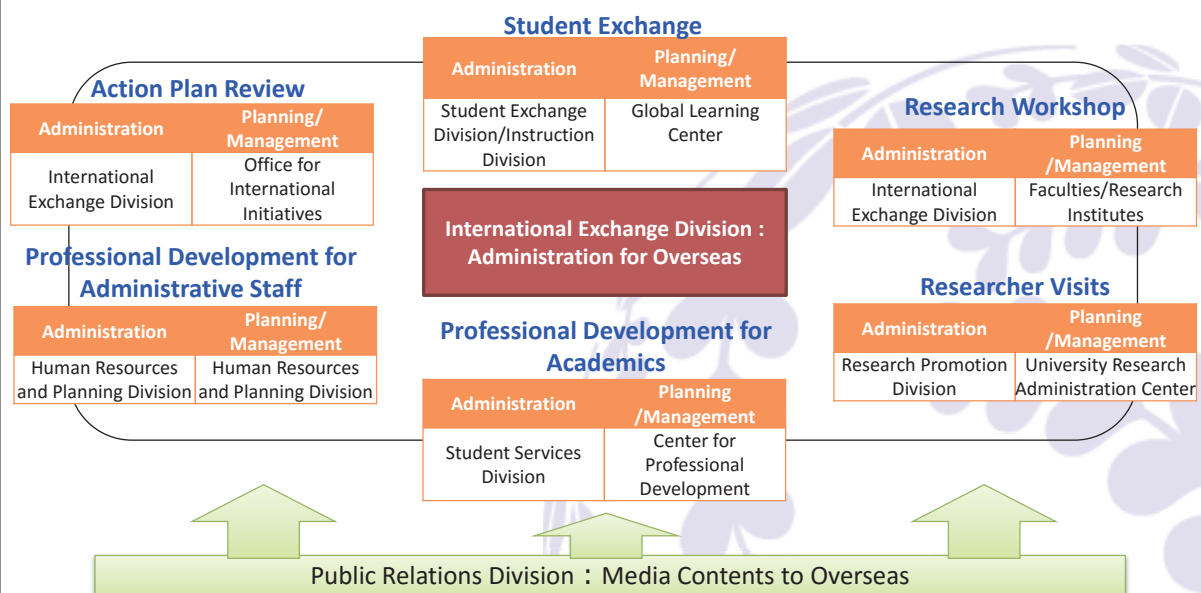
-rethinking of the means of communication between different units in Tohoku-

- ✓ Investigating ways of linkage with faculties, schools and departments for the purpose of delivering and collecting information between the central organizations and different internal units



Future Actions: Organizing internal networking

Example: Planning and Management Team for Strategic Partnership (provisional)






Toward synergetic effects of collaboration between cutting-edge research and international joint graduate education

Sadayoshi Ito, Executive Vice President for Research
Masahiro Yamaguchi, Associate Executive Vice President for
International Affairs



Tohoku University International Advisory Board 2016



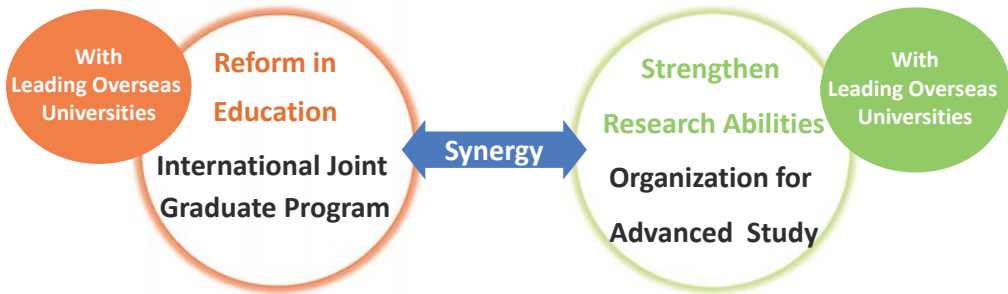
Tohoku University's Global Initiative

Investing in knowledge as a world-class university
-Pursuing international excellence in education and research-

Objectives:

1. Create an Education Base to Cultivate Global Leaders
2. Further improve our research environment in a globalized context

How?:
"Reform in Education and Research with Accelerated Efforts towards Internationalization"



2

Tohoku University's Approach as a Global Intellectual Hub to Accelerate Brain Circulation

Strengthen Research Ability
Organization for Advanced Studies

Organization for Advanced Studies (OAS)

In our capacity as a world-leading research center, creating an open environment in which excellent researchers will gather.
(Vision 2)

Keys

- Overseas Research Station
- Frontier Research Institute for Interdisciplinary Sciences
 - Frontier Research Center Hub
- **Organization for Advanced Studies (OAS)**
 - Tohoku Forum for Creativity
 - Advanced Institute for Materials Research(AIMR)

Organization for Advanced Studies (OAS)

In accordance to our research strategy, the Organization for Advanced Studies aims to establish an excellent international research environment with a strong research support infrastructure to provide optimal conditions for world-class researchers to gather at Tohoku University and create novel interdisciplinary fields transcending the boundaries of the existing research areas. OAS also plays important roles in brain circulation and international exchanges.

5

Organization for Advanced Studies (OAS)

Advanced Research Institute

- Advanced Institute for Materials Research (WPI)
- *Natural Science*
- *Life Science*
- *Social System*

International Joint Laboratory

- ElyT-Max: U. Lyon, CNRS
- TOP-MASS:UST Beijing

Center for Creativity

- Tohoku Forum for Creativity
- Falling Walls Lab
- Falling Walls Venture

Research Reception Center

International Administration Office

Graduate School, Institute, Center

6

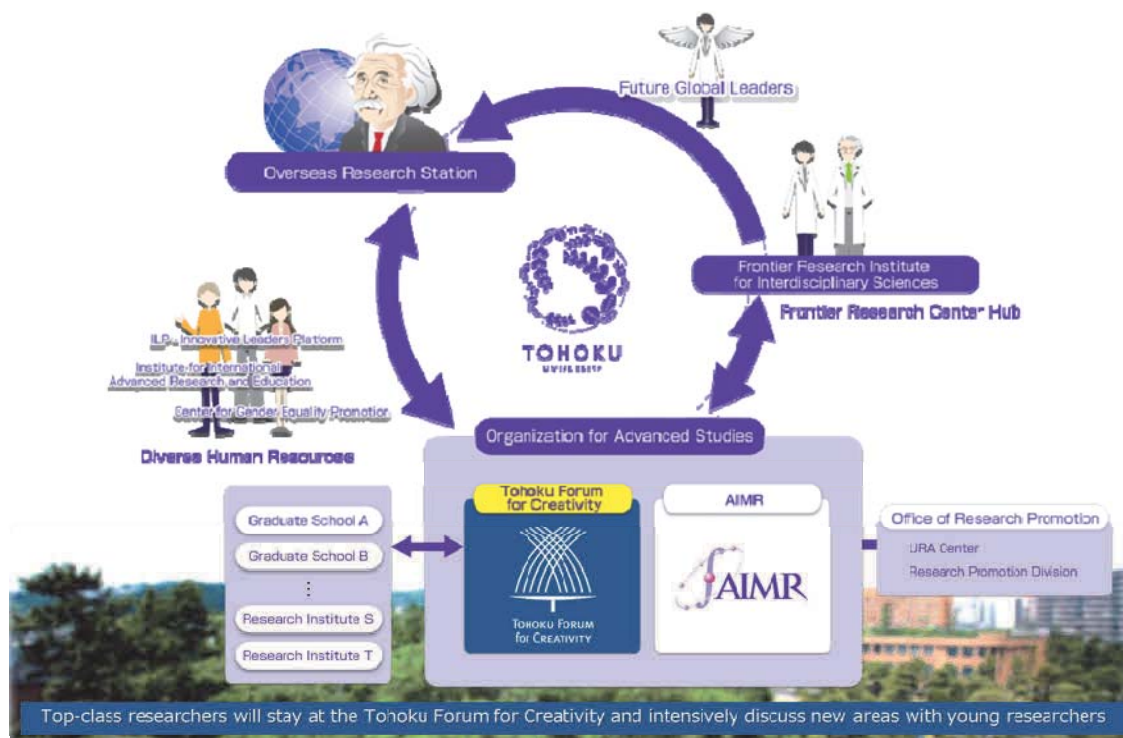
Organization for Advanced Studies (OAS)

WPI-type Advanced Research Institute

- **Top Science (World Premier Institute) and international recognition**
- **Top-down** decision-making
- Mobility and flexibility of researchers
- Keeping excellent researchers through merit based salary scheme and joint appointment
- High percentage of foreign researchers

7

Tohoku University – Brain Circulation Scheme –



8

Organization for Advanced Studies (OAS)

Advanced Research Institute

- Advanced Institute for Materials Research (WPI)
- *Natural Science*
- *Life Science*
- *Social System*

International Joint Laboratory

- ElyT-Max: U. Lyon, CNRS
- TOP-MASS:UST Beijing

Center for Creativity

- Tohoku Forum for Creativity
- Falling Walls Lab
- Falling Walls Venture

Research Reception Center

International Administration Office

Graduate School, Institute, Center

9



Tohoku Forum for Creativity



The first international visitor research institute in Japan

Researchers in the topic field will stay for approximately 3 months and perform focused cooperative research, expand into cutting-edge new areas, and work to solving problems that affect all humankind



The Forum for Creativity is based in on the image of the House of Wisdom.



"Particle Physics and Cosmology after the discovery of the Higgs boson" forum

10



Mission

- Encourage international collaboration
- Facilitate interdisciplinary research
- Raise global leaders

Supported by



TOKYO ELECTRON



TOHOKU FORUM for CREATIVITY

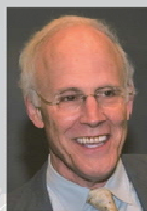
11

Invited World-class Researchers

FY2013

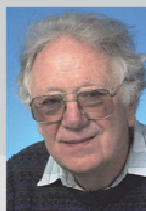


Steven Weinberg
Nobel laureate in
Physics 1979



David Gross
Nobel laureate in
Physics 2004

FY2014

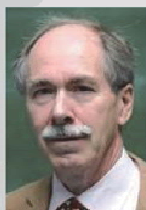


Oliver Smithies
Nobel laureate in
Physiology or Medicine 2007

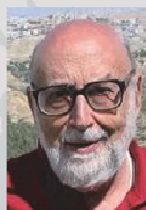


Hiroshi Amano
Nobel laureate in
Physics 2014

FY2015



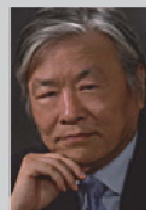
Gerardus 't Hooft
Nobel laureate in
Physics 1999



François Englert
Nobel laureate in
Physics 2013



Makoto Kobayashi
Nobel laureate in
Physics 2008



Susumu Tonegawa
Nobel laureate in
Physiology or Medicine 1987



Albert Fert
Nobel laureate in
Physics 2007



Koichi Tanaka
Nobel laureate in
Chemistry 2002

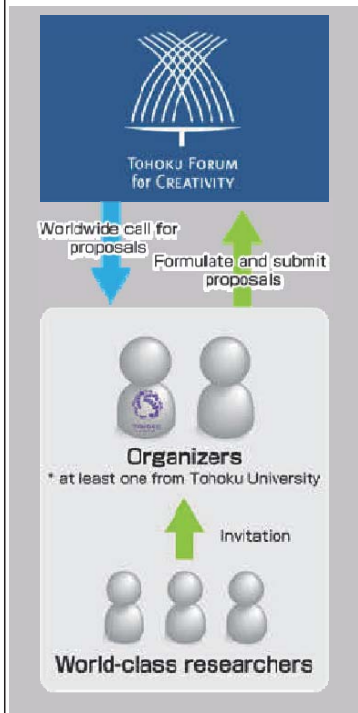
Sendai, Tohoku Univ.



TOHOKU FORUM for CREATIVITY

12

Outline of a TFC Thematic Program



■ A thematic program

- Focuses on a single theme for a period of 3 months
- Hosts long-term visits of world-class researchers
- Comprises multiple academic events

■ Support from TFC

- Up to 15 million Japanese Yen for each program



- ① Solve important problems in our society
- ② Develop new research fields
- ③ Raise the next generation of global leaders



13

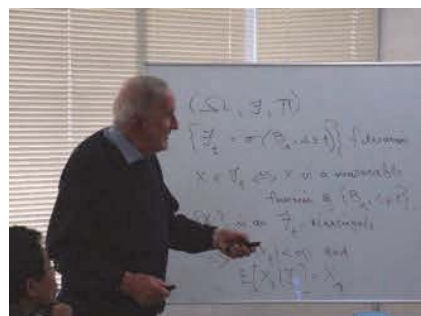
Thematic Programs · Junior Research Programs

	Thematic programs				Junior Research Programs
2013	Particle Physics and Cosmology after the Discovery of the Higgs boson				
2014	Challenges for Big Data in our Society Statistical Analysis of Large Scale, High Dimensional Data for Socio-Economic Problems	A Health Informatics Infrastructure for a New Era	Recovery from the Great East Japan Earthquake and Tsunami Future Strategies for Disaster Risk Reduction		
2015	Frontiers of Brain Science	Fundamental Problems in Quantum Physics: Strings, Black Holes and Quantum Information	Spintronics: from Mathematics to Devices	The Effects of Technological Changes on Social Mobility and Income Distribution	
2016	Modern Interactions between Algebra, Geometry and Physics	Earth and Planetary Dynamics	Comprehensive Research on Materials, Systems and Energy for a Sustainable Future of the Earth	The 21st Century Hasekura Project: Japanese Studies as the Interface of a New Knowledge	Interdisciplinary Approaches to the Protection of Human Rights: Building Integrated Networks between Academic, State and Societal Actors
2017	Aging Science: from Molecules to Society	Nonlinear Partial Differential Equations for Future Applications	New Horizons in Food Science via Agricultural Immunology		

14

Challenges for Big Data in our Society

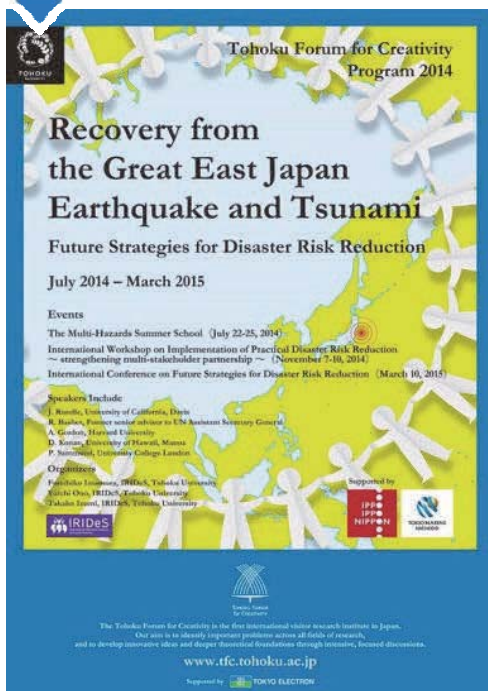
Statistical Analysis of Large Scale, High Dimensional Data for Socio-Economic Problems



15

2014

Recovery from the Great East Japan Earthquake and Tsunami



16

2015

Spintronics : From Mathematics to Devices

**Tohoku Forum for Creativity
Thematic Program 2015**

Spintronics from Mathematics to Devices

September 14 – December 11, 2015

Events

- Elementary Spintronics School
(September 14, December 11, 2015)
- International Workshops :
 - Mathematical Approach to Topological Phases in Spintronics
(October 14, 2015)
 - Quantum Nanostructures and Electron-Nuclear Spin Interactions
(October 19-23, 2015)
 - Spintronics with Antiferromagnets
(November 10-11, 2015)
 - Spintronics
(November 18-20, 2015)
 - Spintronics VLSI
(November 20-21, 2015)

Key Participants Include

David Awschalom Chicago
Albert Fert Paris
Stuart Parkin Amsterdam

Committee

Yoshio Hasegawa (Chair)
Yasuo Ando
Masahito Saitoh
Kensuke Maeno
Ryoji Takamachi

Yoshio Hasegawa (Co-Chair)
Joseph Burghen
Fumihiko Matsubara
Hideo Ohno
Oleg Tsvetkov

Tatsuo Endoh
Susumu Hata
Gij Saitoh
Masahiro Yamaguchi

The Tohoku Forum for Creativity is the first international virtual research institute in Japan.
Our aim is to identify important problems across all fields of research,
and to develop innovative ideas and deeper theoretical foundations through intensive, focused discussions.

www.tfc.tohoku.ac.jp

Sponsored by TEL



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2016

Comprehensive Research on Materials, Systems and Energy for a Sustainable Future of the Earth

Tohoku Forum for Creativity Thematic Program 2016

Comprehensive Research on Materials, Systems and Energy for a Sustainable Future of the Earth

August – November, 2016

Organizer

Tohkiyuki Takagi Hiroo Yugami Takashi Goto Koshi Adachi Naoto Wada

Events

TFC ELYT School 2016 August 28 – September 7, 2016
TFC Conference September 5, 2016
TFC ELYT Workshop (Plenary Lectures) October 2, 2016
TFC ELYT Off-campus Workshop for Intensive Discussions October 7 – 8, 2016

The Tohoku Forum for Creativity is the first international virtual research institute in Japan.
Our aim is to identify important problems across all fields of research,
and to develop innovative ideas and deeper theoretical foundations through intensive, focused discussions.

www.tfc.tohoku.ac.jp

Sponsored by TEL

Events

- 8/28-9/7 TFC ELYT School 2016
- 10/5 TFC Conference
- 10/6 TFC ELYT Workshop (Plenary Lectures)
- 10/7-8 TFC ELYT Off-campus Workshop for Intensive Discussions

Organizers

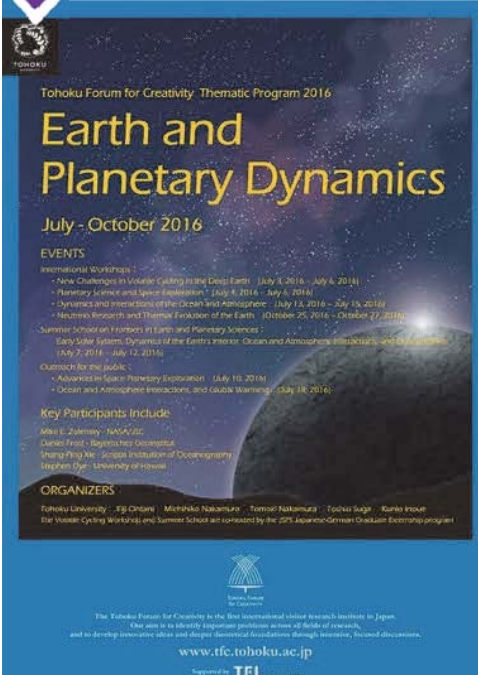
- Tohkiyuki Takagi (Tohoku University)
- Hiroo Yugami (Tohoku University)
- Takashi Goto (Tohoku University)
- Koshi Adachi (Tohoku University)
- Naoto Wada (Tohoku University)

Principle invited researchers

- Philippe Benoit
(Head of the Energy Environment Division/International Energy Agency (IEA), Paris, France)
- Hiroshi Komiyama
(Chairman, Mitsubishi Research Institute, Tokyo, Japan (The 28th President of the University of Tokyo))
- Yves Brechet
(Haut-Commissaire, French Alternative Energies and Atomic Energy Commission (CEA), France)

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Earth and Planetary Dynamics



Tohoku Forum for Creativity Thematic Program 2016

Earth and Planetary Dynamics

July - October 2016

EVENTS

International Workshops:

- New Challenges in Understanding the Deep Earth (July 5, 2016 - July 6, 2016)
- Planetary Science and Space Exploration (July 6, 2016 - July 7, 2016)
- Dynamics and Interactions of the Ocean and Atmosphere (July 13, 2016 - July 15, 2016)
- Neutron Research and Thermal Evolution of the Earth (October 25, 2016 - October 27, 2016)

Summer School on Frontiers in Earth and Planetary Sciences (July 7, 2016 - July 12, 2016)

Outreach for the public:

- Advanced Space Planetary Exploration (July 18, 2016)
- Ocean and Atmosphere Interactions, and Global Warming (July 18, 2016)

Key Participants Include:

Mike E. Zolensky (NASA/JSC)
 Daniel Frost (Bayreuth High Pressure Mineral Physics)
 Shang-Ping Xie (Scripps Institution of Oceanography)
 Stephen Dye (University of Hawaii)

ORGANIZERS

Tohoku University: Eiji Ohtani, Michihiko Nakamura, Tomoki Nakamura, Toshio Suga, Kunio Inoue
 The Visiting, Cycling Workshop, and Summer School are co-organized by the JST Japan-German Outreach Exchange program

www.tfc.tohoku.ac.jp

Supported by TEL

Events

- **Symposium**
 - Jul. 4- 6 International symposium
 - Jul. 4- 6 Symposium on Earth Volatile Cycle
 - Jul. 13-15 International symposium
 - Aug. - Sep. International symposium
- **Summer School**
 - Jul. 7-12 Summer School
- **Outreach activities**
 - Jul. 17 Public Lecture
 - Jul. 18 Public Lecture

Organizers

Eiji Ohtani (Tohoku University)
 Michihiko Nakamura (Tohoku University)
 Tomoki Nakamura (Tohoku University)
 Toshio Suga (Tohoku University)
 Kunio Inoue (Tohoku University)

Principle invited researchers

- Mike E. Zolensky
NASA/JSC, Planetary science
- Catherine McCammon
Bayerisches Geoinstitut, University of Bayreuth High Pressure Mineral Physics
- Shang-Ping Xie
Scripps Institution of Oceanography, UC San Diego, Physical Oceanography
- John Gregory Learned
University of Hawaii, Particle Physics, Geo-neutrino research

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TOKYO ELECTRON House of Creativity



20

Organization for Advanced Studies (OAS)

Advanced Research Institute

- Advanced Institute for Materials Research (WPI)
- *Natural Science*
- *Life Science*
- *Social System*

International Joint Laboratory

- ElyT-Max: U. Lyon, CNRS
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Center for Creativity

- Tohoku Forum for Creativity
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- Falling Wall Venture

Research Reception Center

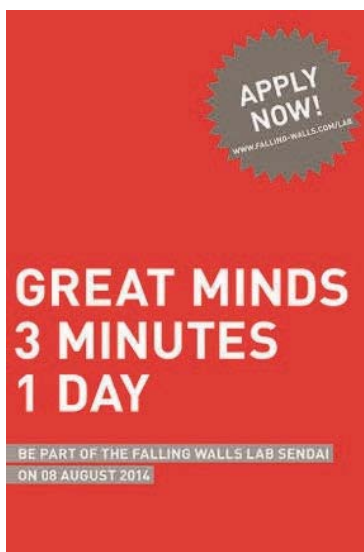
International Administration Office

Graduate School, Institute, Center

21

Falling Walls Lab Sendai First Lab in Japan

- First Lab in East Asia
- Three Minute Research presentation
- Top 3 attend international competition in Berlin



22

Falling Walls Venture Lab SENDAI 2016



Tohoku University's Approach as a Global Intellectual Hub to Accelerate Brain Circulation

Strengthen Education Abilities:
International Joint Graduate Programs



International Joint Graduate School Programs (IJGP)

Create a venue where students will grow into individuals capable of flourishing in the international community
(Vision 1)

Aims

- Expand our knowledge beyond the borders of one particular department or field
- Contribute to the evolution of humans in the future

Ideas and Roles

1. Meet present needs and cultivate highly capable human resources in the world.
2. Develop cutting-edge education programs which also 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.

Program Traits

1. Interdepartmental graduate degree program.
2. Jointly supervised instruction between Tohoku University and overseas institutions.

25

Eight International Joint Graduate Programs

Four Fields Aiming to Enter the World Rankings' Top Tier

Spintronics

Materials Science

Physics for the Universe

Earth Science

Nature Index (2014.10.1 – 2015.9.30)

Source: <http://www.natureindex.com/institution-outputs>

Tohoku University Rank by Weighted Fractional Count (WFC)

Subject	Rank
All	35
Chemistry	34
Earth & Environmental Sciences	34
Physical Sciences	18

QS World University Rankings by Subject 2015

Source: <http://www.topuniversities.com/subject-rankings/2015>

Subject	Rank
Physics & Astronomy	37
Chemistry	41
Materials Sciences	31

Challenging Four New Academic Disciplines

Data Science

Life Sciences

Disaster Reduction / Safety Science

Japanese Studies



New Agriculture Department Building Complex



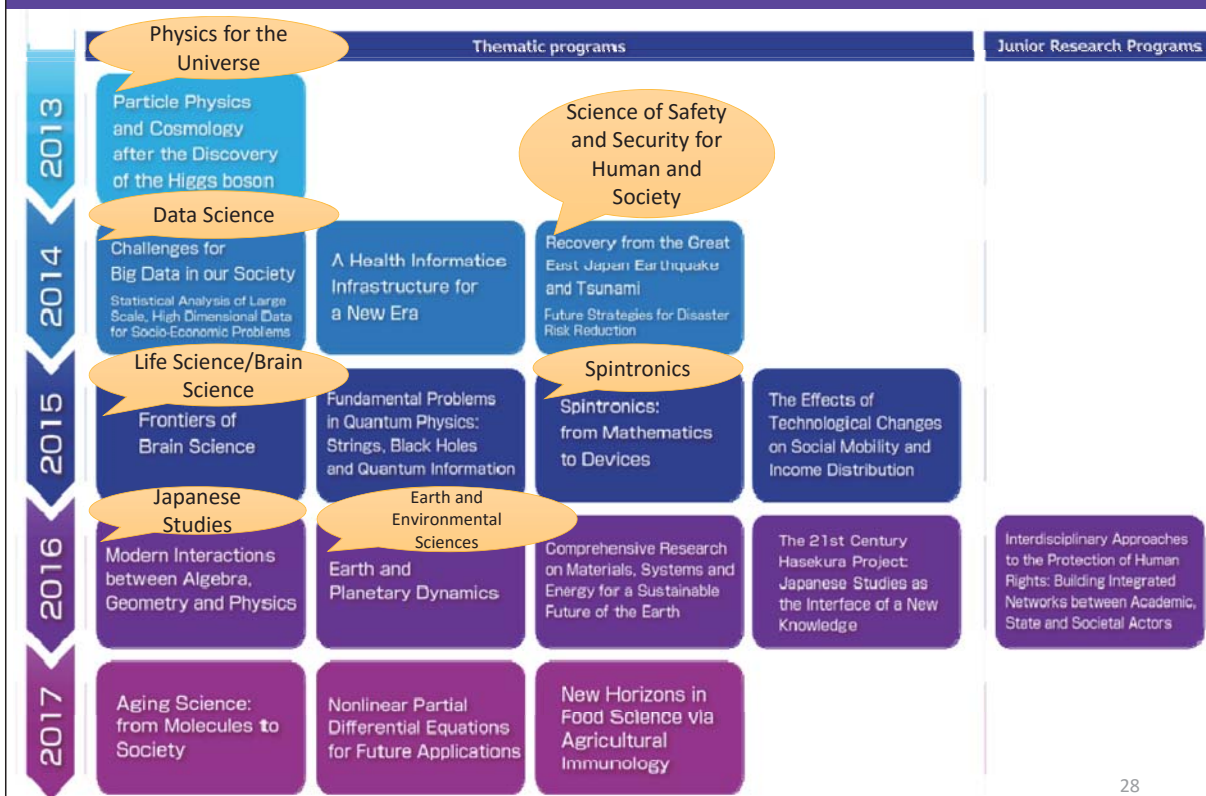
災害科学国際研究所
IRIDeS
International Research Institute of Disaster Science

Eight International Joint Graduate Programs

	Spintronics (GP-Spin)	Materials Science	Physics for the Universe (GPPU)	Earth and Environmental Sciences (GP-EES)	Data Science	Life Science/Brain Science (Neuro Global)	Science of Safety and Security for Human and Society	Japanese Studies
Head Organizer	Graduate School of Science Pro. Yoshiro Hirayama	School of Engineering Prof. Satoshi Sugimoto	Research Center for Neutrino Science Prof. Kunio Inoue	Graduate School of Science Prof. Tadahiro Hayasaka	Graduate School of Information Sciences Prof. Takeshi Tokuyama	School of medicine Prof. Noriko Osumi	International Research Institute for Disaster Science Prof. Fumihiko Imamura	Graduate school of Arts and Letters Prof. Akihiro Ozaki
Partner Universiti es (extract)	U Mainz, Technical U Munich, Technische Universität Kaiserslautern, Delft U Technology, U Chicago, Tsinghua U	Yale U, MIT, U Cambridge, Johann Wolfgang Goethe- Universität Frankfurt am Main, Tsinghua U, University of Science & Technology Beijing, Grenoble Institute of Technology	UCB, U Washington, U Mainz, Technical U Munich, Tsinghua U, Seoul National U	U Bayreuth, U Hawaii at Manoa, Novosibirsk state U, RWTH Aachen U, Carnegie Institution for Science, U Florence	Case Western Reserve U, Carleton U, U Sydney, U Toronto, Max Planck Society, Chulalongkorn U, Hong Kong U Science and Technology, Seoul National U	U Oxford, UCL, INSA-Lyon, Maastricht U, U Melbourne, Harvard U, Istituto Italiano di Tecnologia	Stanford U, UCL, U Hawaii at Manoa, Harvard U, USGS	Università degli Studi di Napoli "L'Orientale", Università Ca' Foscari Venezia, Sapienza – Università di Roma, Università degli Studi di Firenze, Universität Wien, Ruprecht-Karls- Universität Heidelberg
Establish	2015.04	2019.04	2017.04	2016.10	2017.04	2018.04	2019.04	2019.04

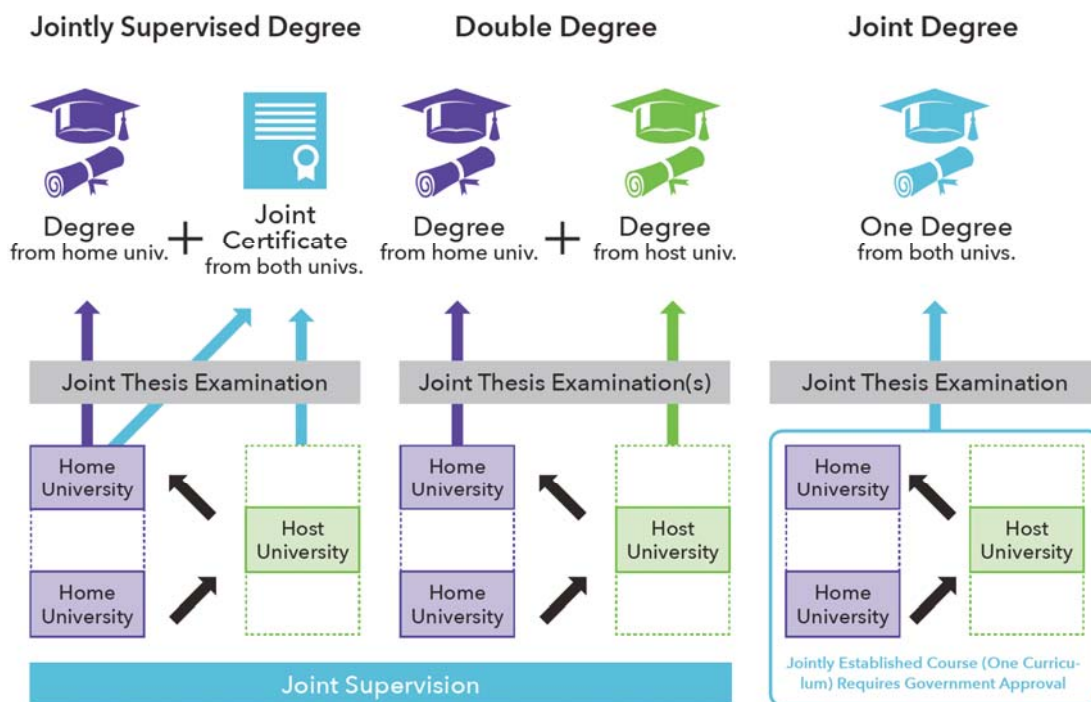
27

Synergy with Forum for Creativity



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Joint Education Programs Comparison



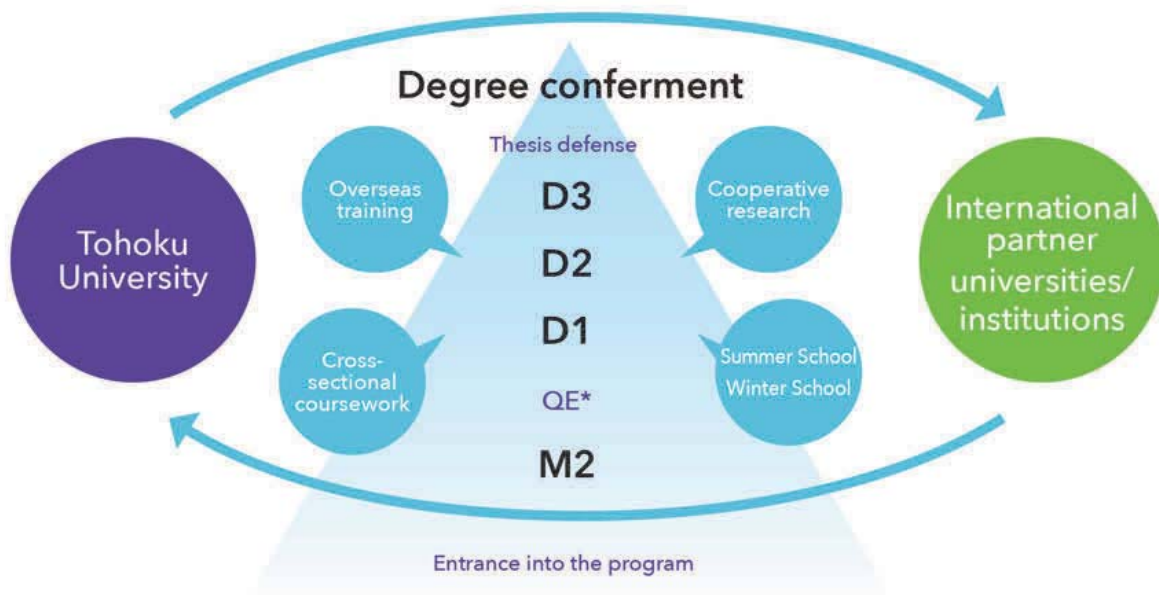
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Joint Education Programs Comparison

	Jointly Supervised Degree	Double Degree	Joint Degree
Definition	The degree will be awarded by the student's home university. Advising and thesis examination will jointly be done. A joint signatory "Certificate of Jointly Supervised Degree" will be issued.	This is a Degree awarded by multiple universities after educating the students in a fixed course, but utilizing credit exchanging etc.	A joint signatory Degree will be issued.
Educational Program	The educational program will be independently administered by the individual university. Both universities will be able to offer special courses for the jointly supervised degree students.	It is desirable to be negotiated between universities.	It is indispensable to be negotiated between universities.
Degree Conferment	The degree will be awarded by the student's home university. It is substantially closer to joint Degree.	The Degree can be awarded by each university under the existing legal system in each country.	The existing legal system in each country may obstruct the Degree awarding process. The overseas university should hold the rights of Degree accreditation.

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Program Image



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Curriculum Example (Spintronics)

	grade	GP-Spin	
Doctoral Program	D3	Prospective degrees	Jointly supervised degree, Joint degree (in future)
		Thesis defense	QE2
	D1-D3	Practical	Practical Spintronics I, II
		Advanced	Applied Spintronics I, II
		Overseas research training	Spintronics Overseas Training
		Communication	Training for Global Communication Skill
Master's Program	M2	Thesis defense	QE1
		Seminar and Research	Master's Seminar and Research
		Fundamental	Fundamental Spintronics I, II, III
		Basic	Basic Spintronics I, II
	M1		Selective examination for the program

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Spintronics(GP-Spin)

Spintronics is the study of the fundamental electronic charge and intrinsic spin of electrons, addressing the attributes of universal matter. It not only connotes the scholarly importance of combining Physics and Engineering fields, but using basic Physics to develop new devices in a variety of fields. We have expectations that Japan will be a leading contributor in this field.

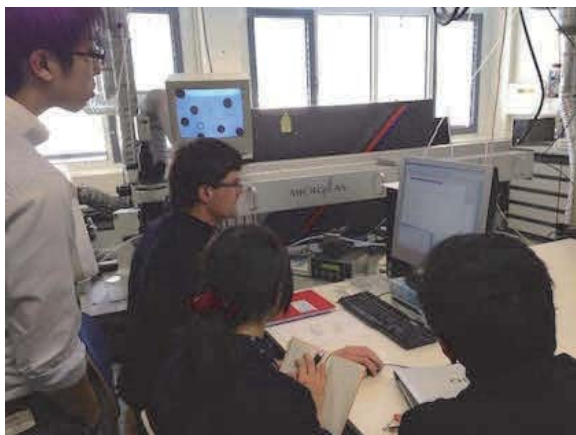


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Earth and Environmental Sciences(GP-EES)

Vision

Aiming to continue the Global Education and Research Center for Earth and Planetary Dynamics' goal of cultivating talented and driven individuals who "have a comprehensive understanding of the entire earth", this program aims to instill internationalization by creating seamless education and research between many countries.



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Strengths and Challenges

Strengths

- Becoming domestically recognized for our leading degree programs.
- Anticipating an increased international presence through relations with institutes overseas.
- Anticipating the effects of synergy between education and research.

Challenges

- Difficulties in securing visiting professors for a long period
- Time consuming to negotiate and conclude JSD/DD.
- We have been developing JSD and DD, but we have not decided how much our university will commit to Joint Degrees.

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Enhancing Educational Internationalization for All Students

Kimio Hanawa

Executive Vice President
for Education, Student Support and Student International Exchange

Tohoku University International Advisory Board 2016

1



Major events leading us to internationalization of education

Global 30 Project (2008-2013)

- Internationalization of Institution
- Setting up International Programs both at undergraduate and graduate levels



**Government
Initiatives**

Go Global Japan (2012-2016)

- Fostering Global Leaders Among Japanese Students
- Internationalization of Institution



**Government
Initiatives**

Tohoku University Global Vision (2013)

- Satomi Vision + Faculty Vision

**Institutional
Initiatives**

Institute for Excellence in Higher Education (2014)

- Integrating International Perspectives into General Education

**Institutional
Initiatives**

Top Global University Project (2014-2023)

- Raising International Competitiveness of Japanese Higher Education
- Internationalization of Institution

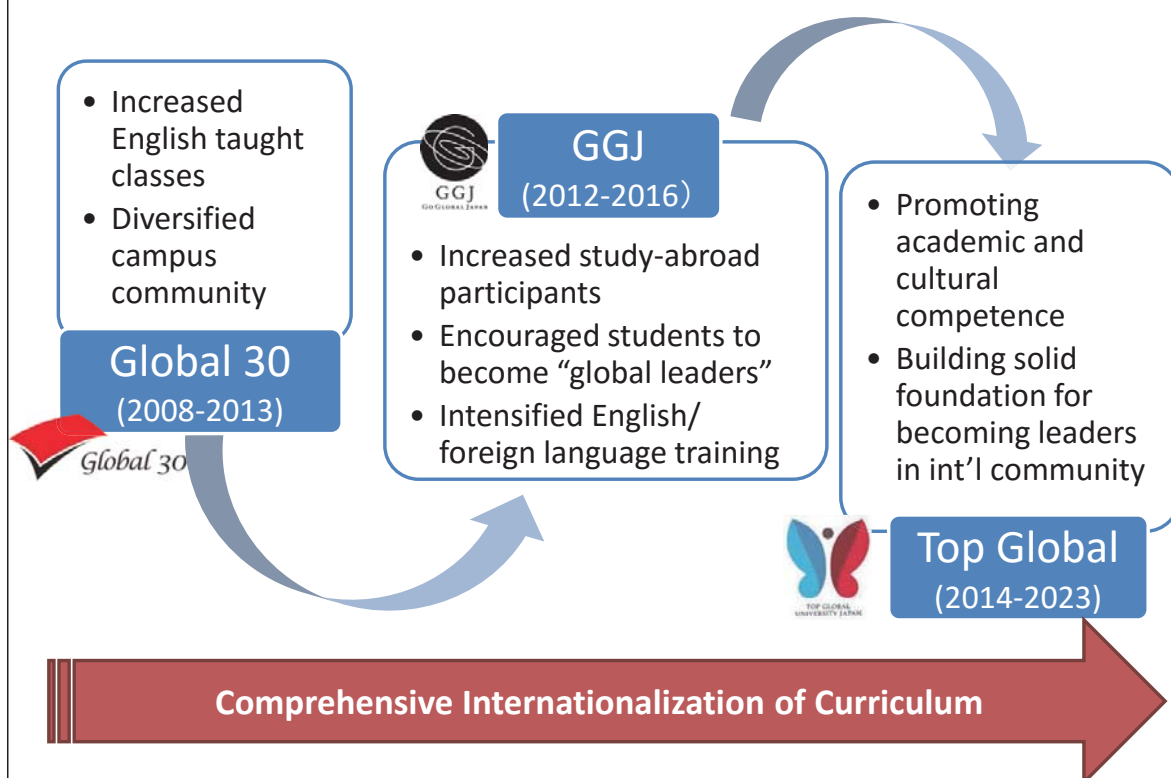


**Government
Initiatives**





External funding to enhance undergraduate education



3



Structure

I. Promotion of inbound mobility

II. Promotion of outbound mobility

III. Campus internationalization

IV. Summary

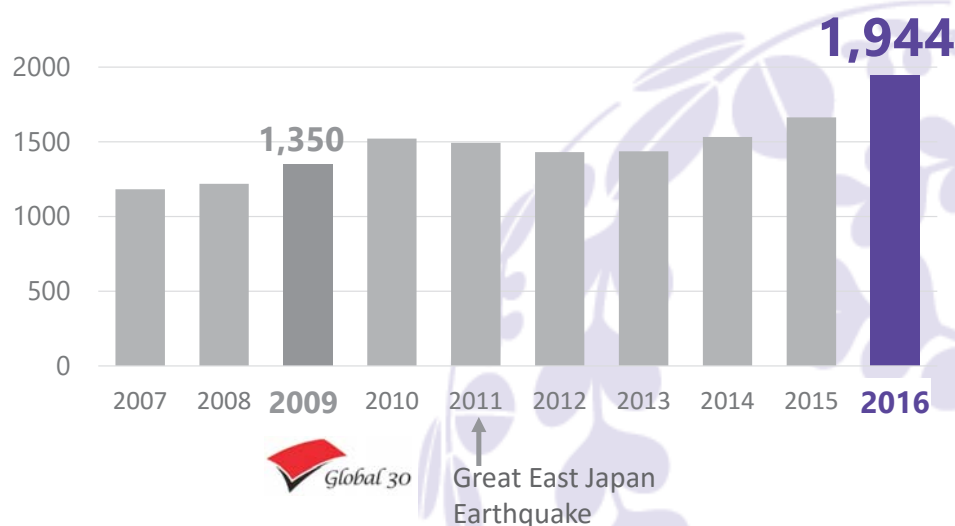




I. Promotion of Inbound Mobility

Trend in Incoming International Students

(As of May 1 each year)



5



Global 30: Future Global Leadership Program English taught degree programs



3 Undergraduate Courses in



Advanced Molecular Chemistry



International Mechanical and Aerospace Engineering



Applied Marine Biology

+

15 Graduate Courses





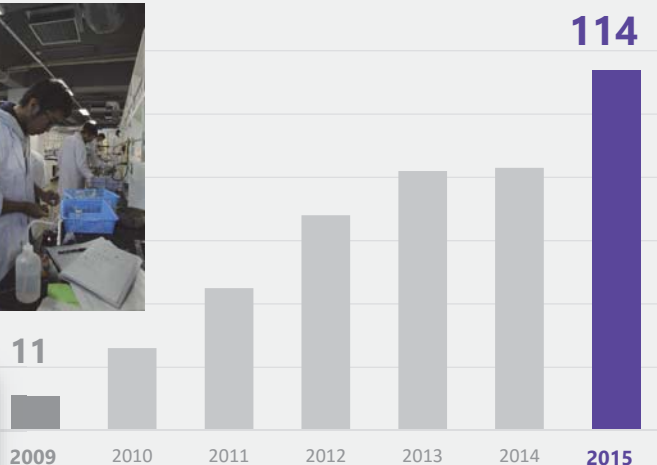
G30: FGL Numerical achievements



Future Global Leadership



Number of students graduating/completing English courses



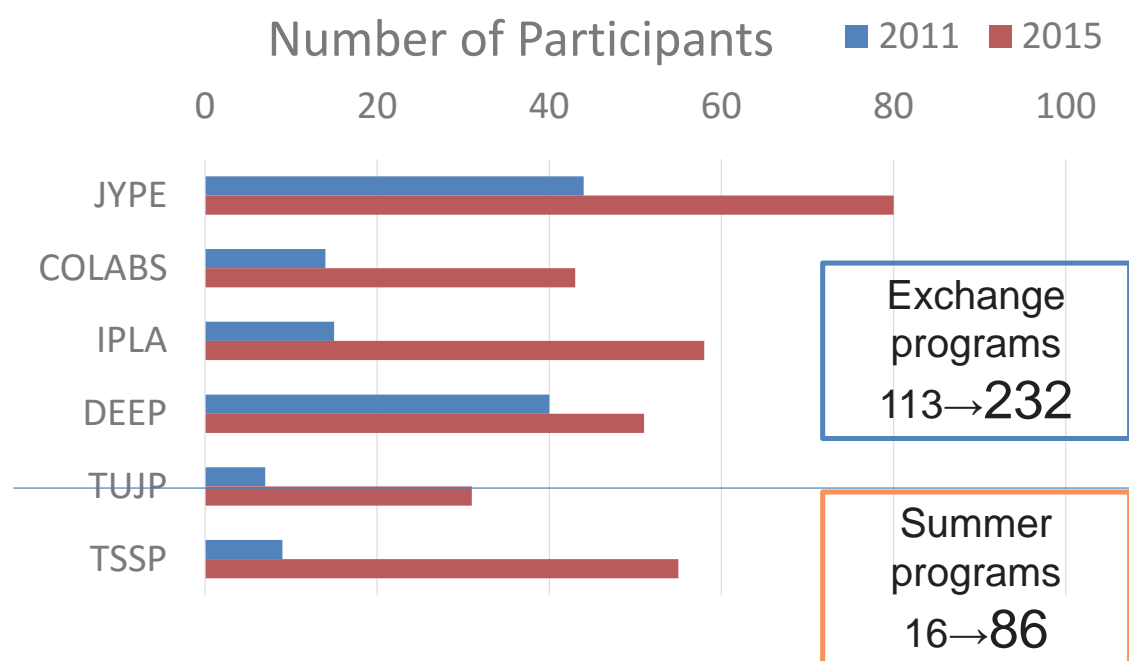
Other English taught short programs for international students



	Program	Outline	Duration	Eligibility
Exchange Programs	JYPE Junior Year Program in English	<ul style="list-style-type: none"> ● Lectures on Science and Engineering ● Japanese language and culture classes ● Research in a lab ● Research presentation 	2 Semesters	Undergraduate
	COLABS Cooperative Laboratory Study Program	<ul style="list-style-type: none"> ● Research in a laboratory ● Research presentation 	2 Semesters	Undergraduate
	IPLA International Program in Liberal Arts	<ul style="list-style-type: none"> ● Lectures on Liberal Arts ● Japanese language and culture classes ● Activities with Japanese students 	1-2 Semesters	Graduate
	DEEP Direct Enrollment Education Programs	<ul style="list-style-type: none"> ● Auditing classes (for undergraduates) ● Research in a lab (for graduates) 	1-2 Semesters	Undergraduate and Graduate
Summer Programs	TUJP Tohoku U Japanese Program	Lectures on Japanese language, culture and society	2 weeks	Undergraduate
	TSSP Tohoku U Science Summer Program	Lectures on Science and Engineering	2 weeks	Undergraduate



Other English-taught short programs for international students



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Support for International Students



University House

Students from Japan and overseas live together in the same environment.



President's Fellowship

Provides tuition, entrance, and test fees for international students of excellent character and academic standing.



International Support Office

Offers various supports for international students and researchers.

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II. Promotion of Outbound Mobility

Our plan to change the “inward looking” mindset of young people, and cultivate a generation that can actively contribute on the global stage.



TOP GLOBAL
UNIVERSITY JAPAN

- | Internationalization of the Curriculum
- | Faculty Development for Global Education
- | Improving Foreign Language Competencies
- | Cultivation of Global Human Resources
- | Support to Promote Study Abroad Programs



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TGL: Tohoku Univ. Global Leader Program



Academic Foundation



Tohoku University Global Leader Program

Cultivating Global Human Resources with 6 Key Competencies



1. Specialization

The ability to deeply understand one's own field of study

2. Broad perspective

The ability to look at things from a multidimensional perspective and make a judgement by various criteria

3. Problem identifying and problem solving

The ability to identify where problems exist from a multi-faceted, broad perspective, make earnest efforts to resolve the problems, and create a new situation or value

4. Cross-cultural/international understanding

The ability to understand and respect the history and culture of other countries and regions, while having an understanding of Japanese history and culture and retaining a sense of identity as a Japanese national

5. Communication

Skills high enough to communicate with others; presentation ability; and writing ability

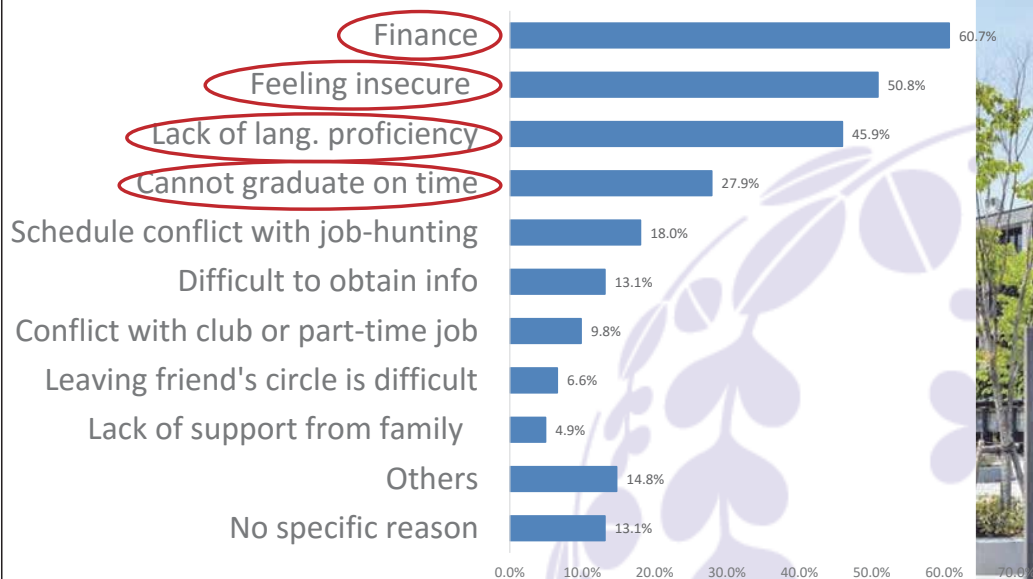
6. Leadership

The ability to take a leadership role in proactively resolving/overcoming problems through a deeper level of communication and cooperation

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Challenges: Obstacles of Study-abroad



Tohoku University Student Survey (2013,2014)



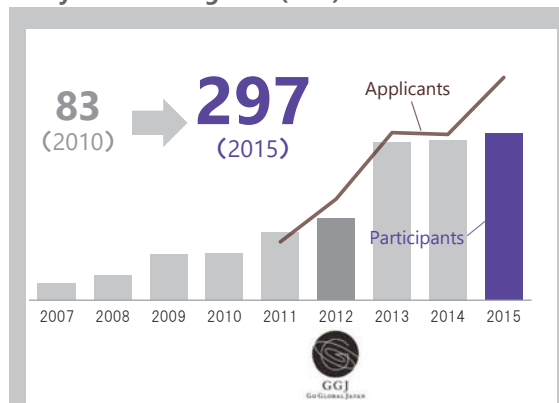


SAP: Study Abroad Program Short-term overseas training programs

Statistics on SAP participants (2007-2015)

Institutions	Number of Participants
University of California, San Diego (USA)	81
University of California, Riverside (USA)	411
University of Hawai'i at Mānoa (USA)	50
Simon Fraser University (Canada)	43
The University of Sydney (Australia)	144
The University of New South Wales (Australia)	94
Monash University (Australia)	29
University of Auckland (New Zealand)	15
The University of Sheffield (UK)	43
The University of York (UK)	60
Universität Paderborn (Germany)	44
École Centrale de Lyon (France)	18
Universidad de Alcalá (Spain)	15
Chulalongkorn University (Thailand)	46
Foreign Trade University (Vietnam)	55
Seoul National University (South Korea)	15
Gadjah Mada University (Indonesia)	17
National Chengchi University (Taiwan)	27
Universitas Indonesia (Indonesia)	20
Total	1,227

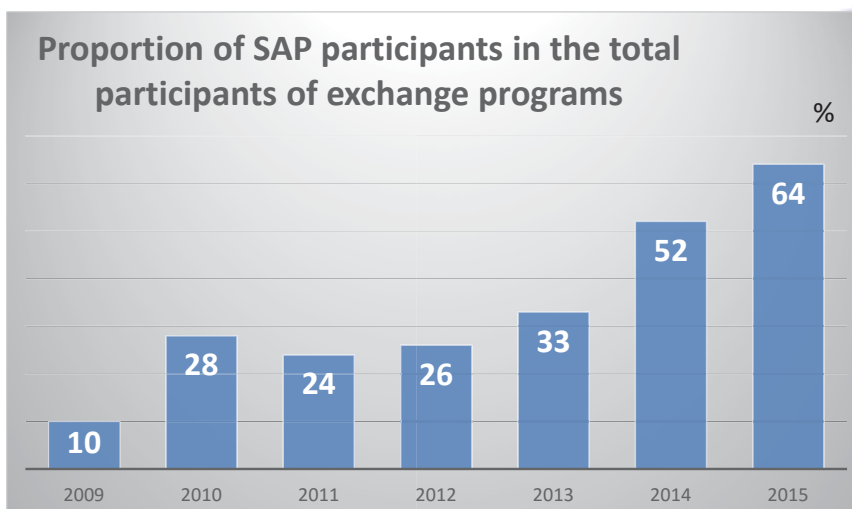
Study Abroad Programs (SAP)



Outcome of SAP

In 2015, 64% of students who applied for exchange programs had participated in short-term programs.

Proportion of SAP participants in the total participants of exchange programs





III. Campus Internationalization (1)

Living and learning together with students around the Globe

Classes

Developing **40** intercultural co-learning classes as part of Liberal Education



Extra-curricular

International Dormitory as base for learning by living together

680 rooms



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IV. Summary- Strengths

1. Has secured **sufficient resources and internal and external funding** to develop diverse international programs/classes/ activities
2. Has hired **talented faculty/staff** to operate and manage study-abroad and international programs, offering students a variety of experiences in- and outside classrooms
3. Has obtained **support from the university administration**





Challenges

1. **Integration**: How can we integrate the project-based international programs into the mainstream of undergraduate/ graduate curriculum ?
2. **Resources**: How can we build a sustainable education system with limited financial and human resources?

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Possible Future Action for Integration

- ✓ International education programs should be discussed and decided **comprehensively** in the framework of regular education programs
- ✓ Administration on international students and domestic students should be **integrated** by a single office



A new system of governance and management by involving all university staff with internationalization of education

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東北大学グローバルイニシアティブ構想諮問会議
(東北大学国際アドバイザリーボード)

2016年度開催報告書

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