

Overview of TI-FRIS

TI-FRIS Program Information Session

March 19, 2025

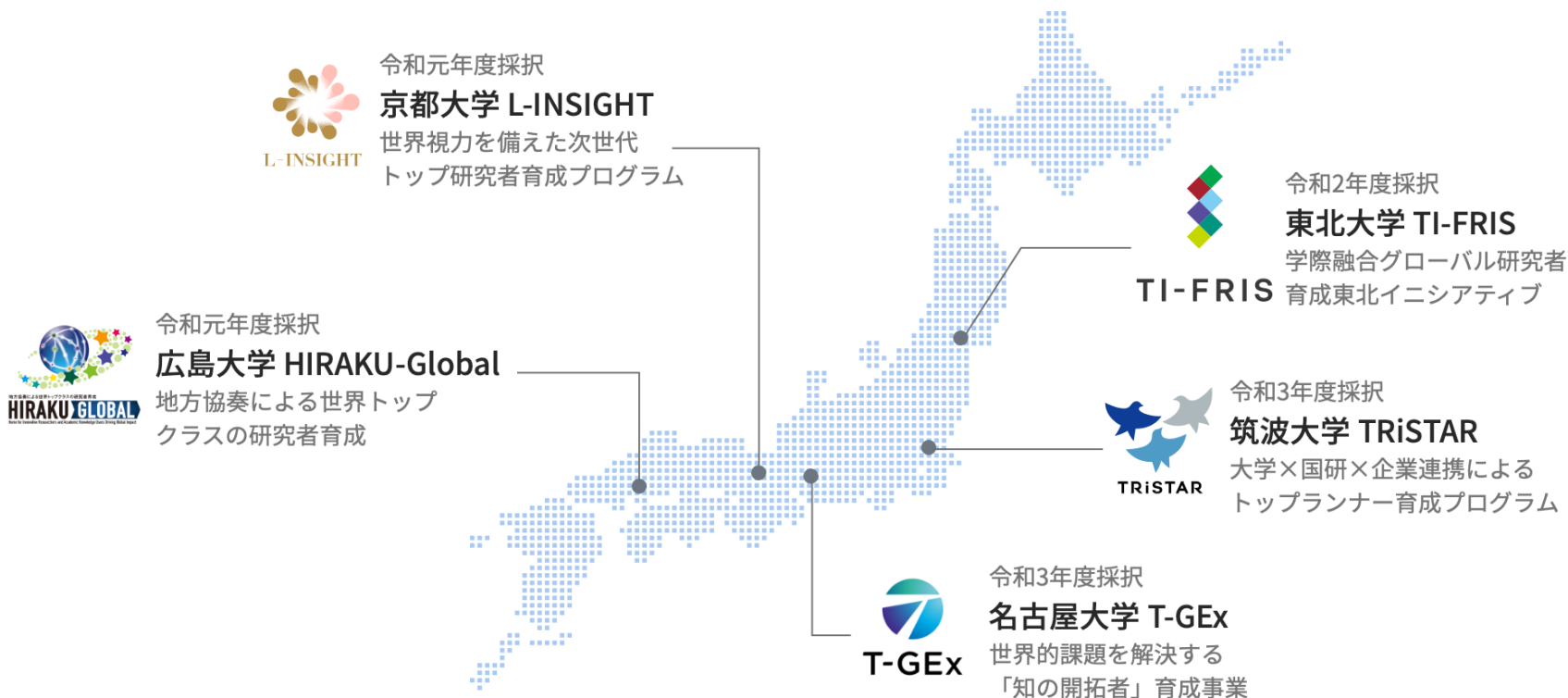
TI-FRIS Program Manager
Director, FRIS, Tohoku University
Toshiyuki Hayase



"Strategic Professional Development Program for Young Researchers" aims to enhance the research productivity of Japan. It supports universities and research institutions that promote the strategic development of excellent researchers. The project includes incorporating the knowledge of advanced cases in other countries into good domestic cases of the development of researchers, creating programs for developing the world's top-class researchers, and establishing a coordinated system for researcher development (e.g., a system to publish papers in the world's top-class journals, to obtain overseas research grants, etc.) instead of one for each independent laboratory.

世界で活躍できる研究者戦略育成事業 実施機関

Strategic Professional Development Program for Young Researchers



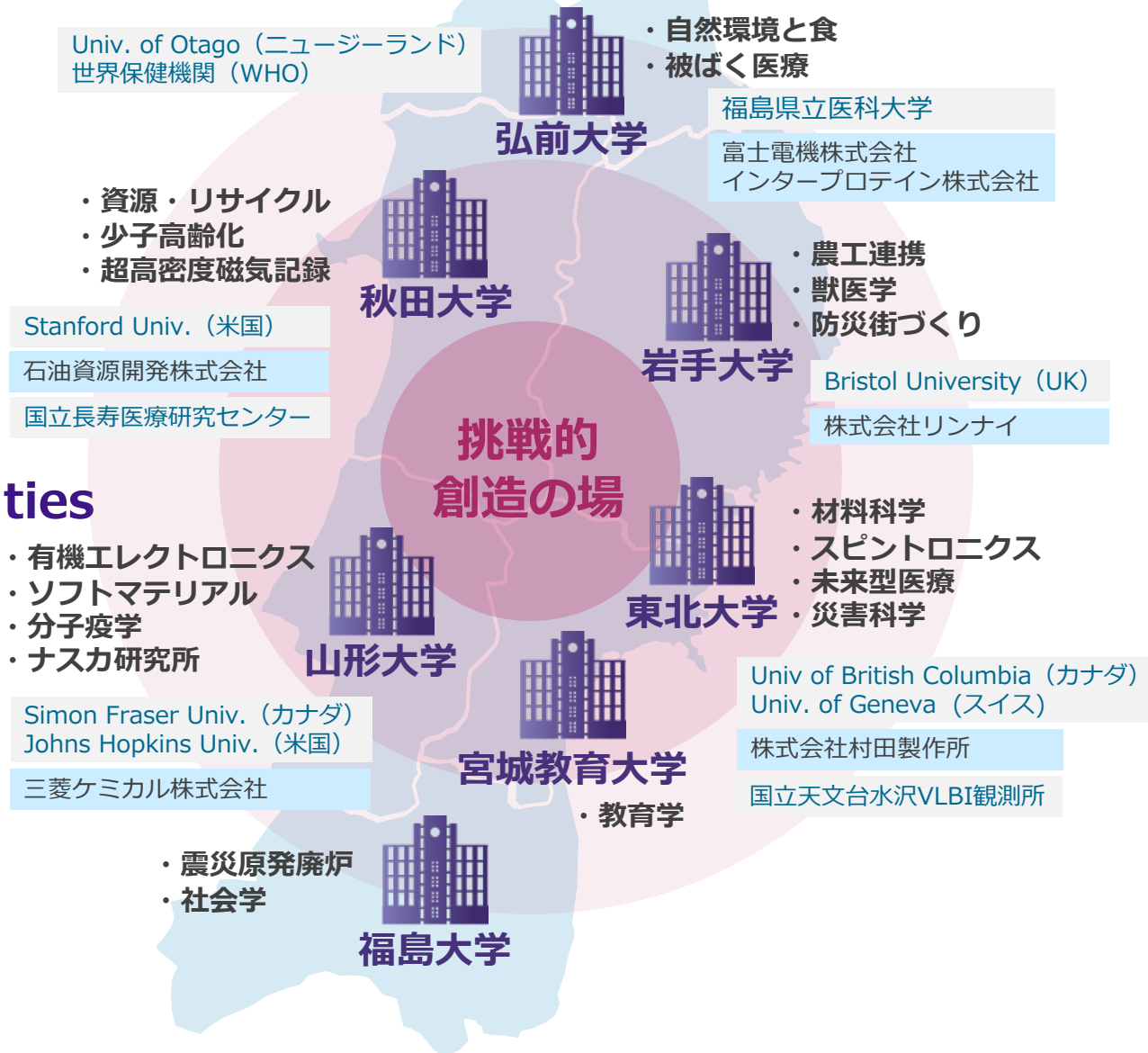
Tohoku Initiative for Fostering Global Researchers for Interdisciplinary Sciences (TI-FRIS)



TI-FRIS

| 学際融合東北拠点 |

Tohoku Region Strengths of the seven universities Diversity





Inter- disciplinarity

Ability to engage in interdisciplinary research with researchers from different fields



Inter- nationality

Ability to collaborate and advance research with researchers from around the world



Sociability

Ability to work in cooperation with society and apply research outcomes for the benefit of society

Interdisciplinarity

Interdisciplinary Researcher Exchange Program



- Hub Meeting (monthly)
- Retreat (yearly)
- Grant for Interdisciplinary Research

Internationality

International Collaborative Research Program



- Fund for Start-up Activities
- Fund for International Collaborative Research (one month/5 yrs)
- Grant for Publication and Presentation of Research Results
- Grant for Organizing Seminars

Sociability

Social Implementation Program



- Advisory Support for Industry-Academia Collaborative Research
- Advisory Support for Social Implementation
- Grant for Industry-Academia Collab. Research and Social Implementation

Transferable Skills Training Program (Hybrid in onsite and online, Archiving)

- Lecture Course on Interdisciplinary Research
- Lecture Course by Top Researchers
- Lecture Course on Academic Impact
- Lecture Course on Societal Impact
- Lecture Course on Industrial R&D and Social Implementation

Common Program

- Research Facilities Sharing Network
- TI-FRIS Symposium



	Year	Interdisciplinarity	Internationality	Sociability
TI-FRIS Senior Fellow	6th to 10th Year	Leaders of interdisciplinary research communities	Leader of international collaborative research projects	Leaders of social implementation projects of research results
TI-FRIS Fellow	5th Year	Interdisciplinary collaborative research results	Conducting new international collaborative research	Outcomes of industry-academia collaborative research
	4th Year	Conducting interdisciplinary collaborative research with researchers to be trained in different fields	Obtained overseas research grants	Conducting industry-academia collaborative research with partner companies
	3rd Year	Planned interdisciplinary collaborative research with researchers in different fields to be trained	Results of international collaborative research with overseas partner institutions	Planning industry-academia collaborative research with partner companies
	2nd Year	Communicate with researchers targeted for training in different fields	Conducting international collaborative research with overseas partner institutions	Communicating with non-researchers from partner companies
	1st Year	Understanding the importance of interdisciplinarity (transferable skills)	Acquiring skills for academic impact (transferable skills) Conducting international collaborative research with overseas partner institutions	Understanding the importance of social impact (transferable skills)

Fellow Selection (selected/pre-selected)

- FY2024: 6 Fellows / 22 candidates
- FY2023: 5 Fellows / 15 candidates
- FY2022: 5 Fellows / 12 candidates
- FY2021: 5 Fellows / 14 candidates
- FY2020: 15 Fellows / 24 candidates

FY2025 Call for Applications

● Approx. 5 Fellows

The 6 research areas of: **Materials and Energy, Life and Environments, Information and Systems, Devices and Technology, Human and Society; and Advanced Basic Science.**

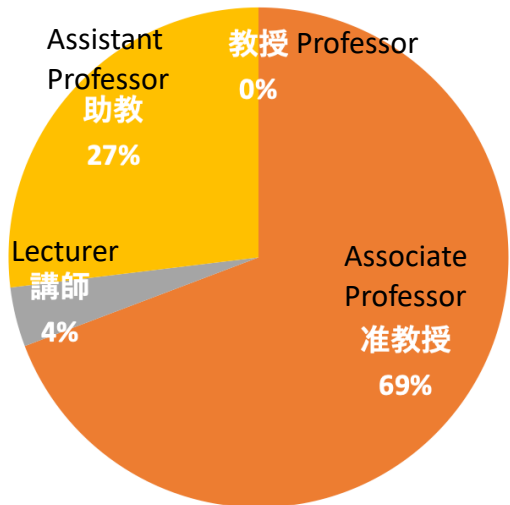
※We look forward to receiving applications from fields of humanities and social sciences.

Perspectives of Selection

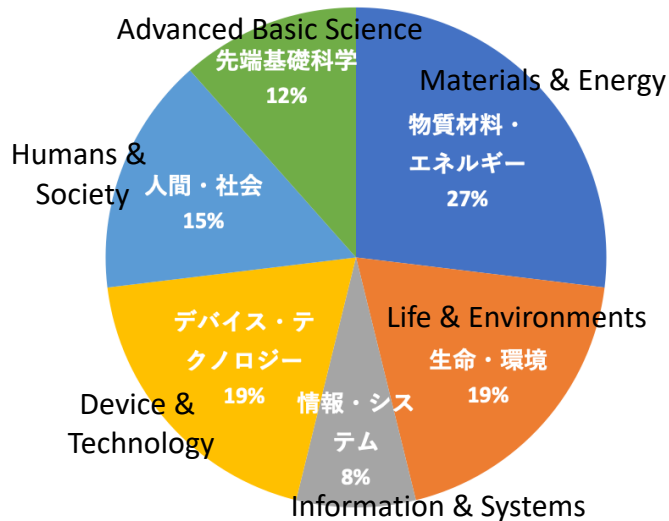
- Researchers affiliated with a participating university, who have obtained their doctorate within the last 10 years, who are less than 40 years old, and who can carry out research activities in an independent research environment with the support of domestic and international mentors.
- Researchers with outstanding research abilities and with research achievements in specialized fields.
- Researchers who are willing to promote interdisciplinary research and to develop new research fields through active exchanges with researchers from different fields.
- Researchers who can promptly begin joint international research.
- Researchers who are motivated to realize the social implementation of research results by interacting with a variety of stakeholders.

Number of fellows: 29

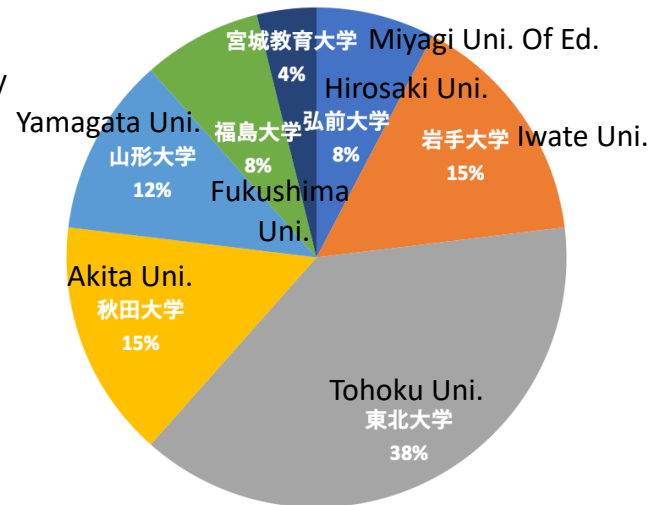
Positions



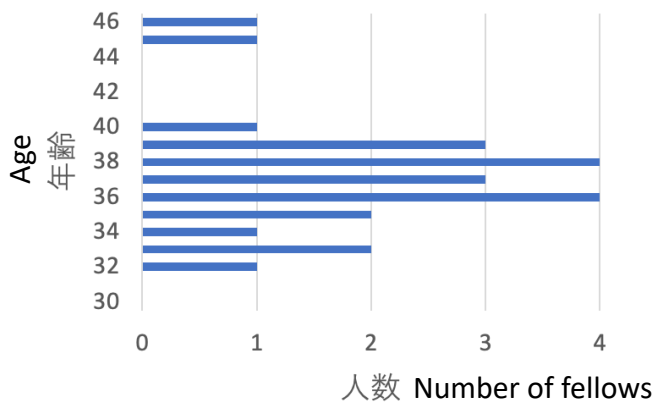
Research Fields



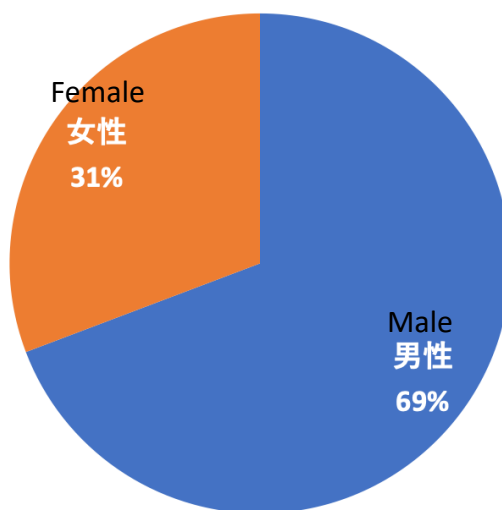
Affiliations



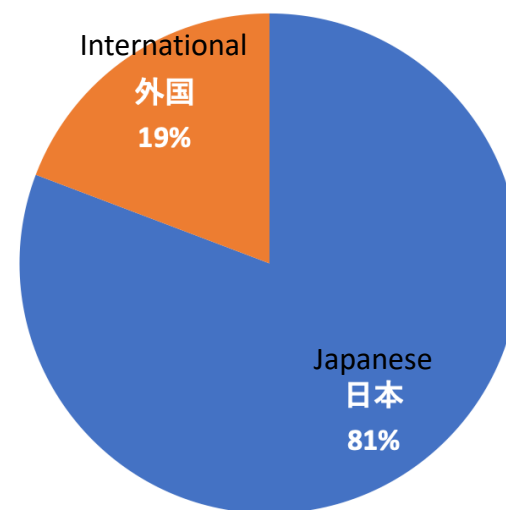
Age Distribution



Gender



Nationalities

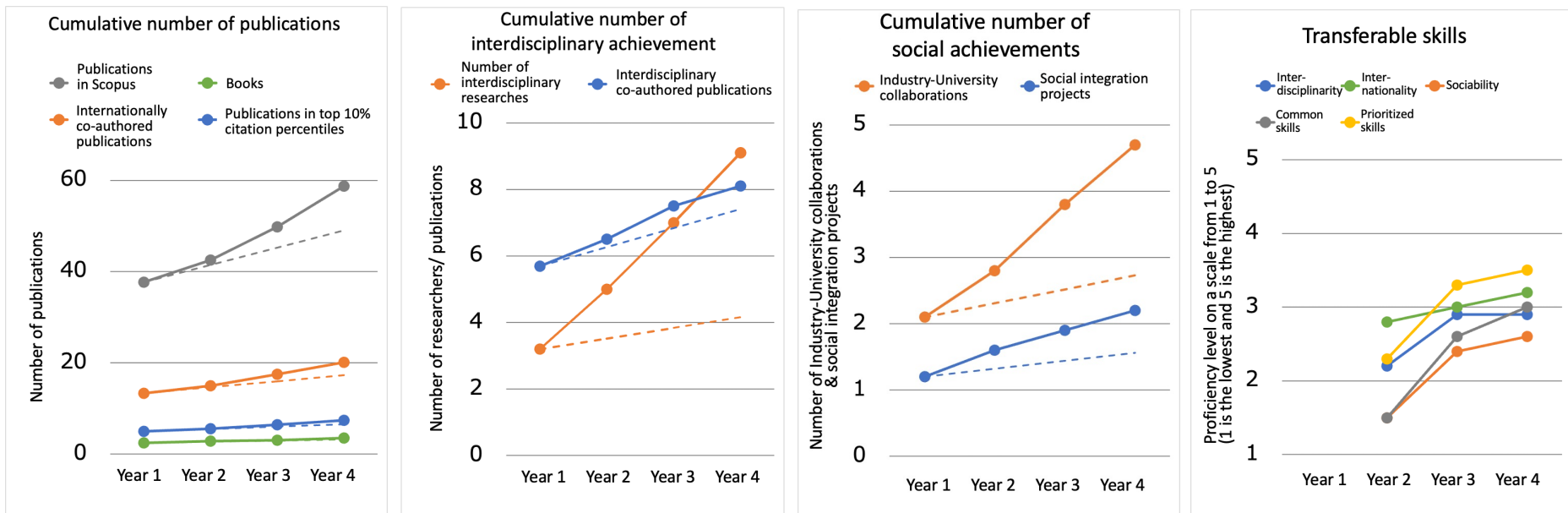


Average age : 37.2

○ Contents of Monitoring

- (A) Implementation status of the programs and activity status of TI-FRIS Fellows
- (B) Research achievements of TI-FRIS Fellows
- (C) Effectiveness of TI-FRIS programs
- (D) Achievement of goals of TI-FRIS

Improvement of internationality, interdisciplinarity, sociability, research activities and research performance



Broken lines : Initial projections of improvement, assuming the hiring occurs in the 10th year of the research career.

Request to Domestic and International Mentors

(Domestic Mentor) To provide a stable, independent, and international research environment for each TI-FRIS Fellow, TI-FRIS requests senior faculty members at TI-FRIS Fellows' affiliated institutions to serve as their domestic mentors.

(International Mentor) To provide a truly international research environment for each TI-FRIS Fellow, TI-FRIS requests senior researchers from TI-FRIS Fellows' international collaborative research institutions to serve as their international mentors.

Mentors are asked to fulfill the following tasks.

1. Support and Advice for TI-FRIS Fellows

(Domestic Mentor) Mentors are asked to provide an independent research environment and research support for the TI-FRIS Fellows. While we understand that the concept of an independent research environment varies from department to department, at the very least, young researchers should be able to secure research space and execute their research expenses. In addition, mentors are asked to provide advice and counsel to TI-FRIS Fellows regarding the promotion of their research and educational activities as necessary.

(International Mentor) International mentors are asked to provide some advice and support as and when necessary through collaborative research with the TI-FRIS Fellows so that the TI-FRIS Fellows enhance research achievements and get international grants.

2. Monitor Progress

Mentors are asked to fill out an evaluation questionnaire and give their opinion on the research activities of the TI-FRIS Fellow for the monitoring of the effectiveness of this program.

	Events	Fund/ Grant Programs	Monitoring
2025 Apr.	Hub Meeting 48		
May	Hub Meeting 49		
Jun.	Hub Meeting 50 Briefing and Exchange Meeting w/ Fellows (TBD)		Interview w/ PM and Coordinators (TBD) Monitoring questionnaire for 6th TI-FRIS Fellows and their mentors
Jul.	Hub Meeting 51 TI-FRIS/FRIS Retreat (7/17-18)		
Aug.			
Sep.	Hub Meeting 52		
Oct.	Hub Meeting 53 Lecture Course on Societal Impact 8 (TBD)		
Nov.	Hub Meeting 54 Lecture Course on Industrial R&D and Social Implementation 6 (TBD)	Call for FY2026 Grant Applications	
Dec.	Hub Meeting 55		
2026 Jan.	Hub Meeting 56	Decision for FY2026 Grant Applications	Submission of List of Achievements in FY2025
Feb.	Hub Meeting 57 Symposium (TBD) (Lecture Course by Top Researchers/ on Interdisciplinary Research)		
Mar.	Hub Meeting 58	Submission of FY2025 Report	Monitoring questionnaire for activities in FY2025 and for their mentors
Apr.			



Researchers
From Different Fields

FY2024~ Presentation in English,
Expansion of participants

Talks on a variety of topics

- What makes the field interesting
- Research approach and experimental methods
- Problems that cannot be solved by the field alone

Participants

- Hub Meeting members: TI-FRIS Fellows, FRIS faculty members (~60)
- Observers: Members of TI-FRIS participating universities, TI-FRIS officials, Researcher+ Program Fellows, Science Journalists (~20)

Exchanges between TI-FRIS Fellows

- Exchanges between TI-FRIS Fellows initiated through Hub Meetings and Retreats
- FY2023~: Increased the number of exchanges including “North Tohoku Meetings”, networking & exchange meetings, study groups, lab tours, and co-hosting research meetings
- FY2024~: International workshops like the “Interdisciplinary Exchange Workshop for the Future (IEWF)” organized by TI-FRIS Fellows (through the “Research Exchange Support” program)
 - ✓ Encouraged participation from institutions outside the TI-FRIS participating members, such as Hokkaido University and Kyushu University.
 - ✓ Contributed to the dissemination and development of the TI-FRIS program.



IEWF-KJ (Pusan)
March 2024



IEWF-ThJ (Bangkok)
May 2024



IEWF-TwJ (Hsinchu)
January 2025

Grant for Interdisciplinary Research

- Funding of Up to 500,000 JPY per project (each year) for 2 years
- For utilization of the seeds of TI-FRIS Fellows
- For transformation of exchanges between TI-FRIS Fellows into high-impact interdisciplinary research
- Application open in November, Announcement of the results in January, and Start of projects in April (following year)
- **Contributed to the numbers of co-authored papers and international workshops organized by TI-FROIS fellows.**

FY2022 :

有機・無機廃棄物への超臨界水熱処理による電極触媒材料の開発

Yuta Nakayasu (Tohoku), Kazutoshi Haga (Akita), Hiroya Abe (Tohoku)



DNAアプタマーと標的分子間相互作用の解析による次世代生体分子センサの開発

Yuanyuan Guo (Tohoku), Takuya Mabuchi (Tohoku)



FY2023:

被ばく医療教育に関するバーチャルリアリティ教材の教育効果

Osamu Nomura (Hirosaki), Hirofumi Tabuchi (Hirosaki)



FY2024:

樹脂基板上金属/有機半導体の光学応答と高感度センサ応用

Tomohito Sekine (Yamagata), Takao Oto (Yamagata)



水熱抽出木質リグニンの電極用キノン類への水熱変換

Yuta Nakayasu (Tohoku), Lam Pui Ying (Akita)



TI-FRIS

- Development and Validation of Researcher Fostering Program
- Exchange with Different Fields
- Int'l Collaborative Research
- Social Impact of Research
- Wish Fellows to Take Advantage of the Opportunity
- Will Reflect Fellows' Opinions



Ability to engage in interdisciplinary research with researchers from different fields

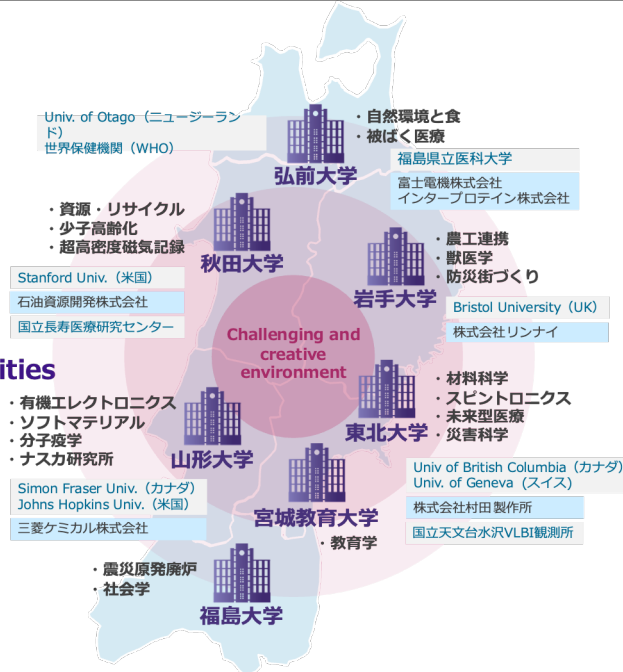


Ability to collaborate and advance research with researchers from around the world



Ability to work in cooperation with society and apply research outcomes for the benefit of society

Tohoku Region Strengths of the seven universities Diversity



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Internationality



- Fund for Startup Activities
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Sociability



- Advisory Support for Industry
- Academia Collaborative Research
- Advisory Support for Social Implementation
- Grant for IndustryAcademia Collab. Research and Social Implementation

Transferable Skills Training Program (Hybrid in onsite and online, Archiving)

- Lecture Course on Interdisciplinary Research
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Common Program

- Research Facilities Sharing Network
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TI-FRIS Secretariat / Joint holding of various events

Int'l Recruitment Fixed-term Asst. Prof. from All Research Areas

Researchers Sought:
Those who will promote world-leading interdisciplinary research and pioneer new academic fields.

Independent Research Environment Promotion of World-leading Research

Research Fund (11M JPY for 5 years)
Support for Int'l Research Activity
Interdisciplinary Research Environment

Mentor System Support for Fostering PI

Research space and advices provided by Mentor Prof./Assoc. Prof.

Exchange of Researchers from Different Fields Promotion of Interdisciplinary Research

Seminar (monthly), Retreat (yearly)

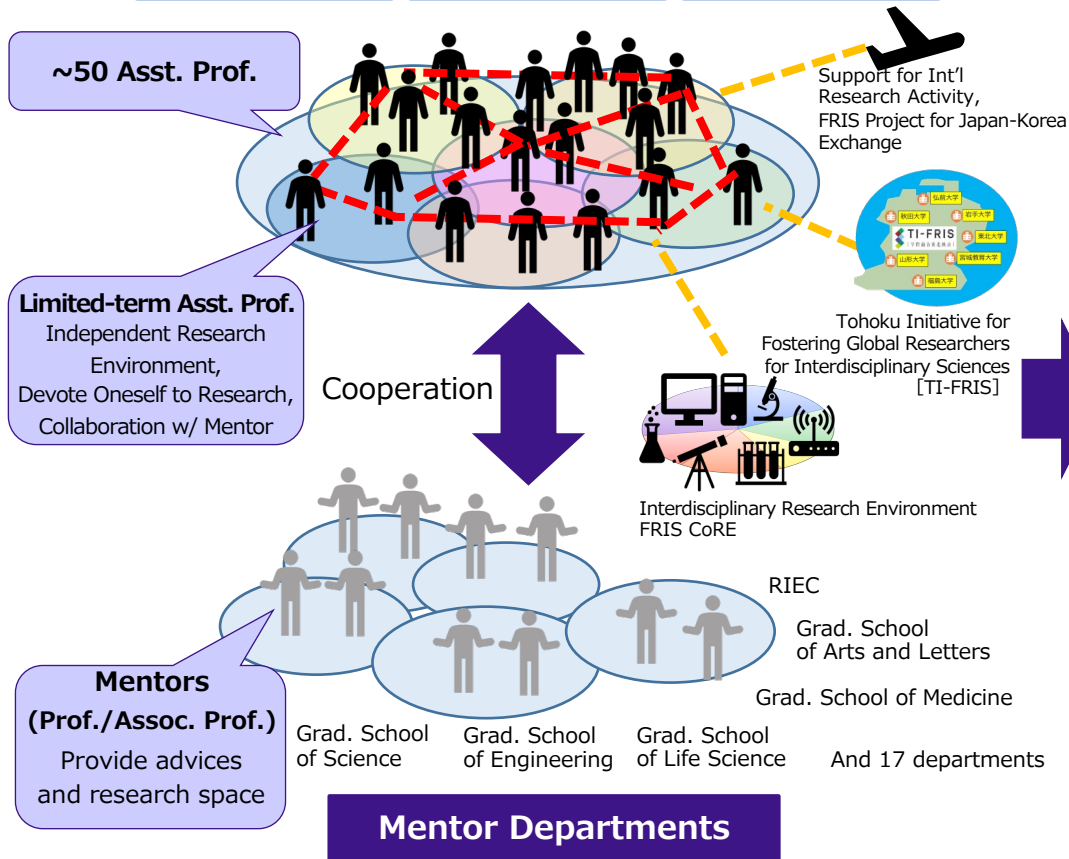
FRIS Tenure Track System

(After the 5-year term expires)

- Tenured Asst. Prof.
- Fixed-term Assoc. Prof. (5 yrs)
- Other position at Tohoku U. (including Cross appointment)
- Employment Extension (1 yr term, 2 yrs max.)

Frontier Research Institute for Interdisciplinary Sciences

Materials and Energy	Life and Environments	Information and Systems
Device and Technology	Human and Society	Advanced Basic Science



World-leading Interdisciplinary Research Pioneering New Academic Fields

Publications in Nature, Science, Cell
6 papers

Single-authored books
10 books

MEXT Young Scientists' Prize
17 researchers

JST PRESTO PI
11 researchers

JST FOREST PI
9 researchers

Tohoku U. Distinguished Researcher
8 researchers

Tohoku U. Prominent Research Fellow
60 researchers

As of May 2024

Promotion of **world-leading interdisciplinary research and pioneering new academic fields**
by **~50 young researchers** in all research areas

Strategic Professional Development Program for Young Researchers
Tohoku Initiative for Fostering Global Researchers for Interdisciplinary Sciences
Application Guidelines for FY2025 TI-FRIS Fellow Recruitment

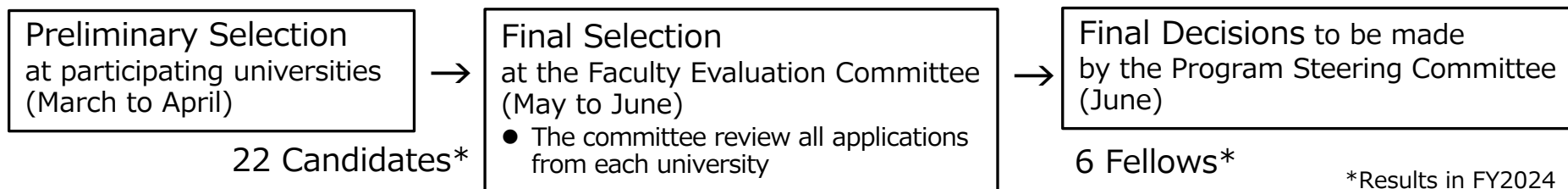
1. Purpose

The “Tohoku Initiative for Fostering Global Researchers for Interdisciplinary Sciences” (hereinafter referred to as "TI-FRIS") was selected as a MEXT “Strategic Professional Development Program for Young Researchers” in 2020. This initiative is a consortium led by Tohoku University and includes Hirosaki University, Akita University, Iwate University, Yamagata University, Fukushima University, and Miyagi University of Education (referred to as "participating universities").

TI-FRIS aims to develop world-class researchers with the qualities of “interdisciplinarity,” “internationality,” and “sociability.” It involves collaboration among seven national universities in the Tohoku region, working with domestic and international institutions to offer a diverse and flexible training program for new researchers. The program aims cross-disciplinary exchanges by utilizing the unique strengths of each participating institution. Additionally, TI-FRIS seeks to demonstrate the effectiveness of the program.

<https://www.ti-fris.tohoku.ac.jp/en/>

Selection Procedure of TI-FRIS Fellows



※ Contact the admin. office of each participating university regarding the preliminary selection.