

Overview of TI-FRIS

TI-FRIS Program Information Session

March 21, 2024

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



令和元年度採択

京都大学 L-INSIGHT

世界視力を備えた次世代
トップ研究者育成プログラム



令和元年度採択

広島大学 HIRAKU-Global

地方協奏による世界トップ
クラスの研究者育成



TI-FRIS

令和2年度採択

東北大学 TI-FRIS

学際融合グローバル研究者
育成東北イニシアティブ



令和3年度採択

筑波大学 TRiSTAR

大学×国研×企業連携による
トップランナー育成プログラム



令和3年度採択

名古屋大学 T-GEx

世界的課題を解決する
「知の開拓者」育成事業

学際融合グローバル研究者育成 東北イニシアティブ

(略称：学際融合東北拠点)

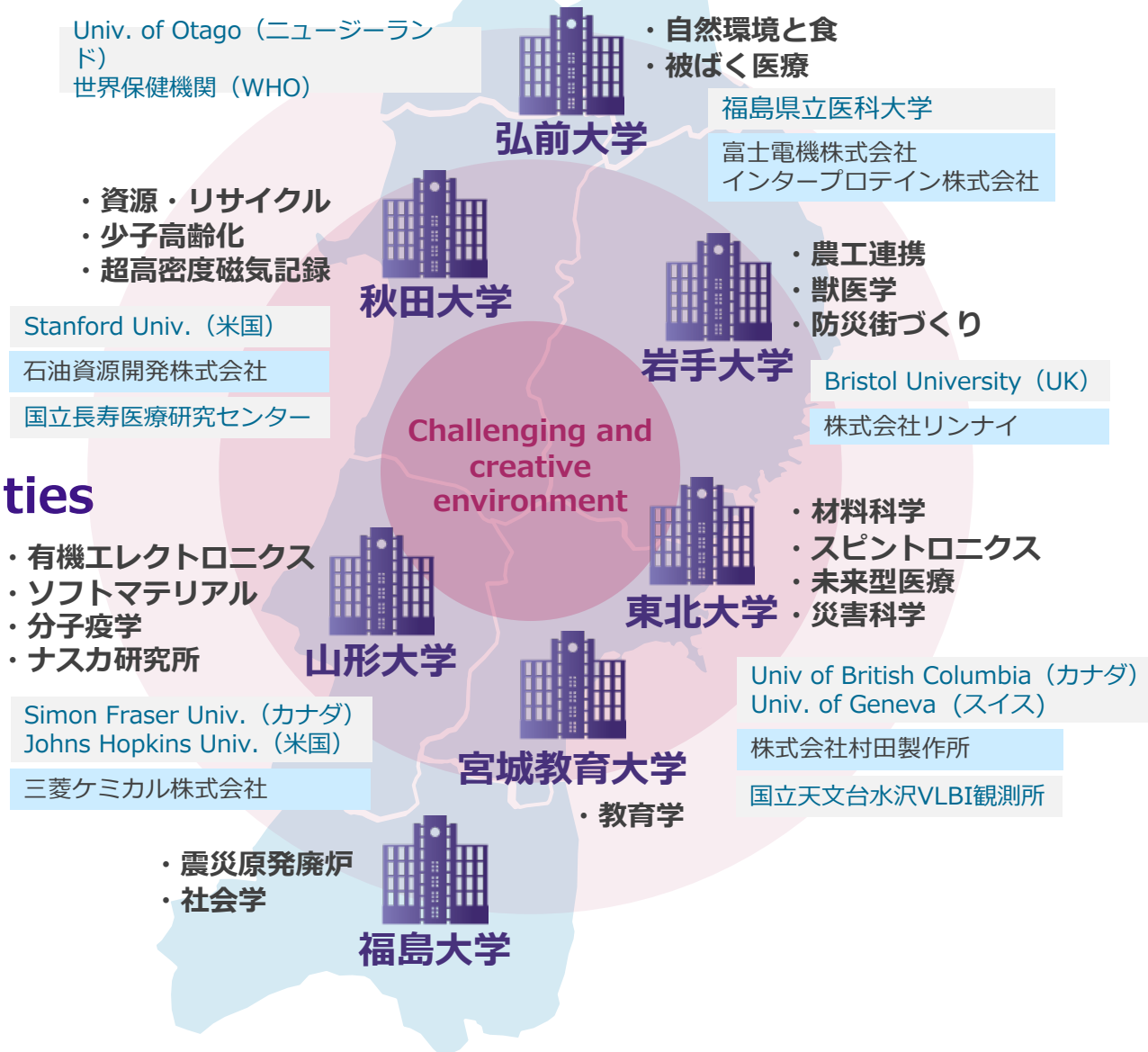
Tohoku Initiative for Fostering Global
Researchers for Interdisciplinary Sciences
(TI-FRIS)



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)

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

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.

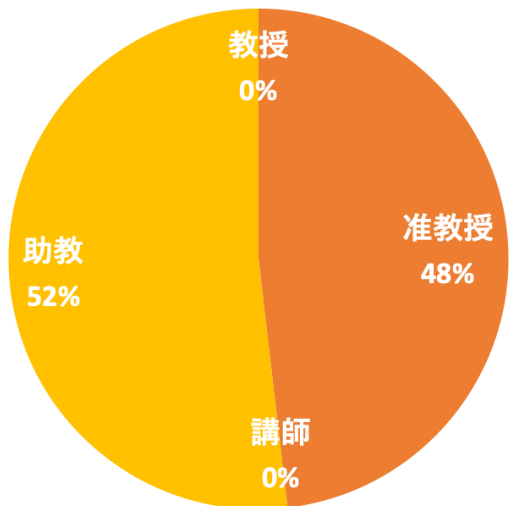
FY2024 Call for Applications

● **Approx. Six Fellows**

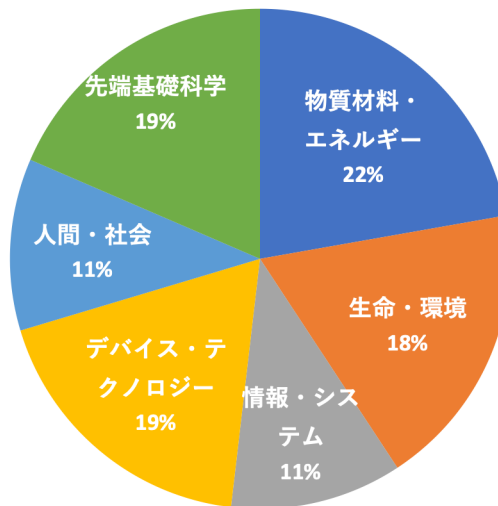
The 6 research areas of: Materials and Energy, Life and Environments, Information and Systems, Devices and Technology, Human and Society; and Advanced Basic Science.

※Looks forward to receiving active applications from the humanities and social sciences.

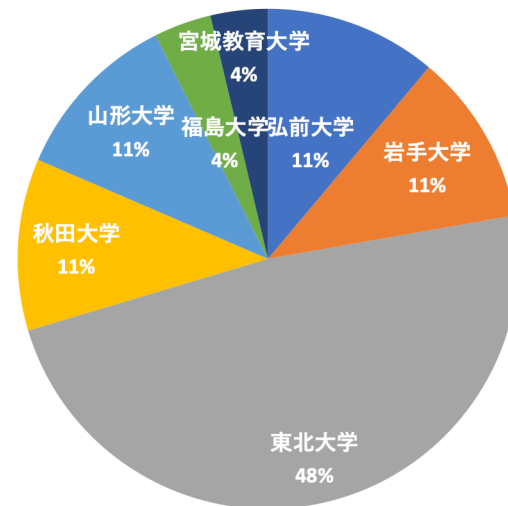
職位（在籍者） Position



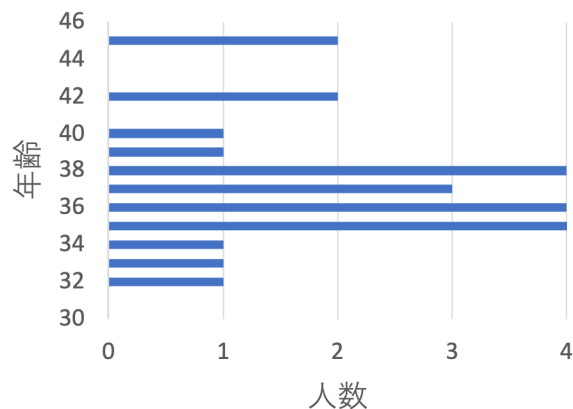
領域（在籍者） Field



所属大学（在籍者） Univ.

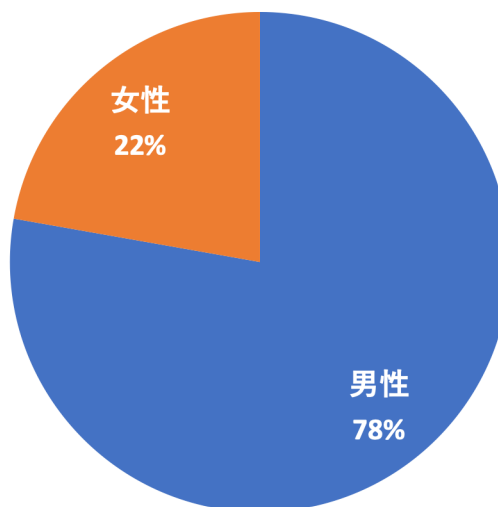


年齢分布（在籍者） Age

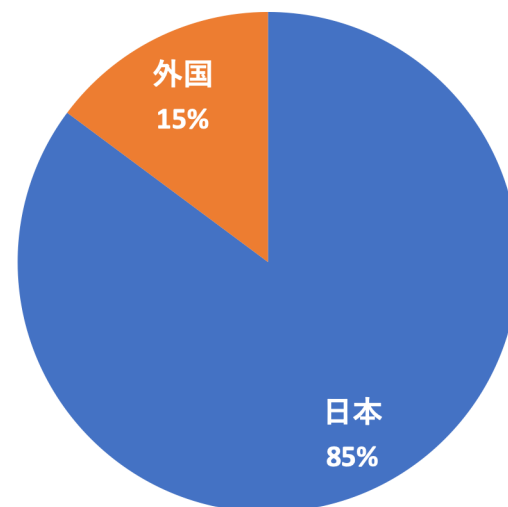


Avg. Age: 37.2

ジェンダー（在籍者） Gender



国籍（在籍者） Nationality



○ Purpose

- By monitoring activities and achievements by TI-FRIS Fellows, the implementation status and effectiveness of this project and the achievement status of the goals, researchers who can play an active role in the world are effectively fostered, and useful researcher development programs are established.

○ 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

○ Implementation Period

- Conducted each year within the scope of the program's implementation period

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
R06 4月	Hub Meeting 37		
5月	Hub Meeting 38 (by TI-FRIS Fellow)		
6月	Hub Meeting 39 Briefing and Exchange Meeting w/ 5th Fellows (TBD)		
7月	Hub Meeting 40 (by TI-FRIS Fellow) TI-FRIS/FRIS Retreat (7/18-19, Iwate)		Interview w/ PM and Coordinators (TBD) Monitoring questionnaire for 5th TI-FRIS Fellows and their mentors at starting
8月			
9月	Hub Meeting 41 (by TI-FRIS Fellow)		
10月	Hub Meeting 42 (by TI-FRIS Fellow) Fellow Research Exchange (TBD)		
11月	Hub Meeting 43 Lecture Course on Industrial R&D and Social Implementation (TBD, Akita)	Call for FY2025 Grant Applications	
12月	Hub Meeting 44 Lecture Course on Societal Impact (TBD)		
R07 1月	Hub Meeting 45 (by TI-FRIS Fellow)	Decision for FY2025 Grant Applications	Submission of List of Achievements in FY2024
2月	Hub Meeting 46 Symposium (TBD) (Lecture Courses by Top Researchers/on Interdisciplinary Research)		
3月	Hub Meeting 47	Submission of FY2024 Implementation Report	Monitoring questionnaire for activities in FY2024 and for their mentors
4月			



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)

Research Exchange between TI-FRIS Fellows

FY2021:

- North Tohoku meeting (2 times, @Iwate & Akita)
- Materials science and energy meeting (@ FRIS)
- Research meeting (2 times, @FRIS)

FY2022:

- Research meeting (2 times, @Yamagata & FRIS): 1 from Yamagata & 1 Tohoku
- Lab. visit (@Akita): 1 from Akita & 1 Tohoku
- Organizing a Seminar (@FRIS): 1 from Iwate, 1 Yamagata, & 2 Tohoku

FY2023:

- Research exchange and social gathering (2 times, @Fukushima & Yamagata)
- Research exchange (@Retreat)

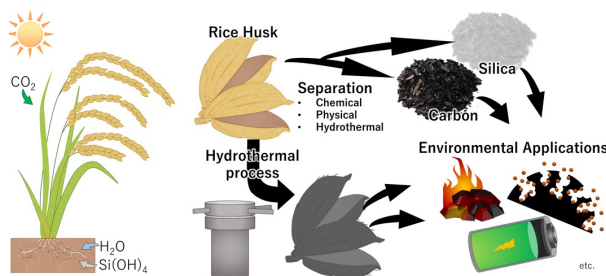


Starting in FY2022

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

Profs. Yuta Nakayasu (Tohoku U.), Kazutoshi Haga (Akita U.), Hiroya Abe (Tohoku U.)

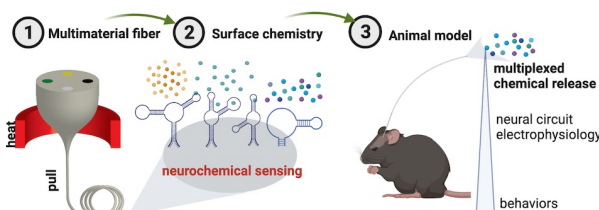
- Review Paper Published.



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

Yuan Yuan Guo 准教授 (東北大学)、馬淵拓哉 助教 (東北大学)

- Int'l Workshop Organized.



Starting in 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

野村理 助教 (弘前大学)、田副博文 准教授 (弘前大学)

- Research Paper in Prep.



VR tool for learning radiation medicine

感情評価の項目: 今から実習される課題に対する、実験中の今の感情を、以下の尺度を基に評価してください。それぞれの項目は、ご自身の気持ちに最も近い数字(1-5)を選択してください。

	1	2	3	4	5
集中している	○	○	○	○	○
興味がある	○	○	○	○	○
楽しんでいる	○	○	○	○	○
疲れている	○	○	○	○	○
集中できない	○	○	○	○	○
興味がない	○	○	○	○	○
楽しめない	○	○	○	○	○
集中している	○	○	○	○	○
興味がある	○	○	○	○	○
楽しんでいる	○	○	○	○	○
疲れている	○	○	○	○	○
集中できない	○	○	○	○	○
興味がない	○	○	○	○	○
楽しめない	○	○	○	○	○

Emotion assessment tool



- Funding: Up to 500,000 JPY per project (each year) for 2 years
- Utilization of the seeds of TI-FRIS Fellows
- From exchange between Fellows to high-impact interdisciplinary research

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

Inter-disciplinarity

Ability to engage in interdisciplinary research with researchers from different fields

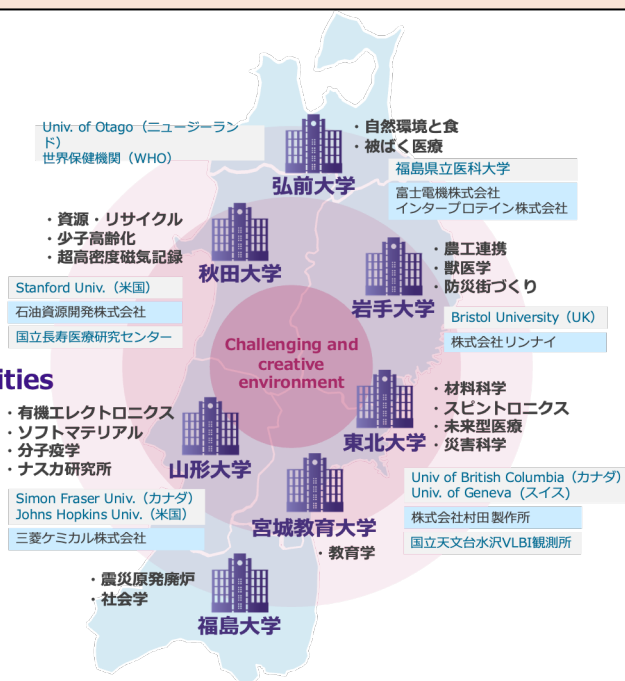
Inter-nationality

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

Tohoku Region Strengths of the seven universities Diversity



Interdisciplinarity



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

Internationality



- Fund for Startup Activities
- Fund for International Collaborative Research (one month/5yrs)
- Grant for Publication and Presentation of Research Results
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Sociability



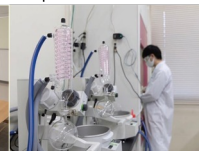
- Advisory Support for Industry
- Academia Collaborative Research
- Advisory Support for Social Implementation
- Grant for IndustryAcademia Collab. Research and Social Implementation

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

- Lecture Course on Interdisciplinary Research
- Lecture Course by Top Researchers
- Lecture Course on Academic Impact
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Common Program

- Research Facilities Sharing Network
- TI-FRIS Symposium



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

~50 Asst. Prof.

Limited-term Asst. Prof.
Independent Research
Environment,
Devote Oneself to Research,
Collaboration w/ Mentor

**Mentors
(Prof./Assoc. Prof.)**
Provide advices
and research space

Cooperation

Support for Int'l
Research Activity,
FRIS Project for Japan-Korea
Exchange



Tohoku Initiative for
Fostering Global Researchers
for Interdisciplinary Sciences
[TI-FRIS]



Interdisciplinary Research Environment
FRIS CoRE

RIEC

Grad. School
of Arts and Letters

Grad. School of Medicine

Grad. School
of Science

Grad. School
of Engineering

Grad. School
of Life Science

And 17 departments

Mentor Departments

**World-leading
Interdisciplinary Research
Pioneering New Academic
Fields**

**Publications in Nature,
Science, Cell**
6 papers (12%)

**Single-authored
books**
10 books (20%)

**MEXT Young
Scientists' Prize**
15 researchers (13%)

JST PRESTO PI
11 researchers (22%)

JST FOREST PI
8 researchers (16%)

**Tohoku U.
Distinguished
Researcher**
6 researchers (12%)

**Tohoku U. Prominent
Research Fellow**
52 researchers (83%)

As of May 1, 2023

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 FY2024 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. The consortium is formed for TI-FRIS by Tohoku University (representative institution), Hirosaki University, Akita University, Iwate University, Yamagata University, Fukushima University, and Miyagi University of Education (hereinafter referred to as “participating universities”).

At TI-FRIS, in order to develop world-class researchers with “interdisciplinarity,” “internationality,” and “sociability,” seven national universities in the Tohoku region with the cooperation of collaborating domestic and overseas institutions provides a diverse and flexible new researcher fostering program that covers the entire Tohoku region. This program aims cross-disciplinary exchanges utilizing the strengths of each institution and organization, and, additionally, TI-FRIS is also demonstrating the effectiveness of the program.

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

Selection of TI-FRIS Fellows



*Actual number for FY2023

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