

Tohoku Initiative for Fostering Global Researchers for Interdisciplinary Sciences

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

Connect, expand, from Tohoku to the world.

Message



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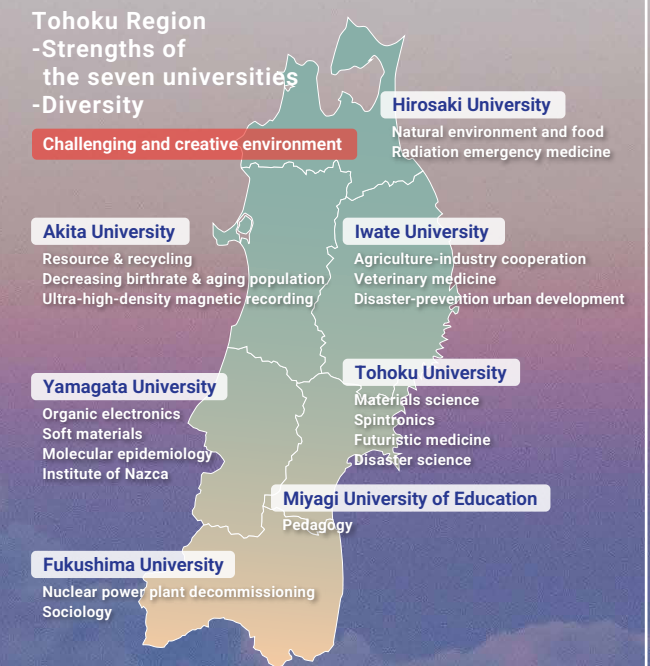
The Tohoku region faces challenges like declining birthrate, aging population, disaster reconstruction, and green energy, all deeply related to the Sustainable Development Goals (SDGs). Seven national universities in Tohoku have strengths in unique research related to these issues and have collaborated in various aspects, building a solid system. The Tohoku Initiative for Fostering Global Researchers for Interdisciplinary Sciences (TI-FRIS) aims to develop researchers with interdisciplinary, internationality, and sociability, who can play a crucial role in addressing these challenges.

TI-FRIS forms a consortium of the seven national universities in the Tohoku region to develop programs capitalizing on each university's strengths and unique activities. With cooperation from domestic and international research institutions and companies, TI-FRIS provides interdisciplinary researcher exchange, international collaborative research, social implementation, and transferable skills training programs. Through these programs, TI-FRIS flexibly responds to researchers' intrinsic growth, emphasizing diversity and creating a challenging, innovative environment.

The goal of TI-FRIS is to foster researchers as leaders in interdisciplinary research communities, spearheading international collaborative research projects and social implementation of research results in the future.

Overview of the Initiative

The Tohoku Initiative for Fostering Global Researchers for Interdisciplinary Sciences (TI-FRIS) is a program that aims to establish and demonstrate the effectiveness of a new researcher development program covering the entire Tohoku region to foster world-class researchers with interdisciplinarity, internationality, and sociability. Launched in 2020 in the "Strategic Professional Development Program for Young Researchers" of the Ministry of Education, Culture, Sports, Science and Technology, and led by Tohoku University, the Initiative has formed a consortium with Hirosaki University, Iwate University, Akita University, Yamagata University, Fukushima University, and Miyagi University of Education. In partnership with cooperating research institutions and companies in Japan and abroad, TI-FRIS Fellows, who are young researchers selected from participating universities, are actively participating in the program.



Researchers that TI-FRIS Aims to Foster

World-leading researchers in their specialized field who also possess abilities



- ▶ To engage in interdisciplinary research with researchers from different fields (Interdisciplinarity),
- ▶ To collaborate and advance research with researchers from around the world (Internationality), and
- ▶ To work in cooperation with society and apply research outcomes for the benefit of society (Sociability).

Features of the Initiative

Feature 1
Interdisciplinarity
35.7%*

- ▶ **Proven Track Record**
Unique interdisciplinary young researchers fostering system
- ▶ **New Approach**
Diversity through collaboration among participating institutions

Feature 2
Internationality
35.0%*

Personas of TI-FRIS Fellows

- Selected from top-class young researchers at participating universities
- Outstanding research skills in a specialized field
- Strong challenging spirit to explore new academic fields (e.g.) Completion of doctoral course → Postdoc → Assistant professor at a participating university

Feature 3
Sociability
29.3%*

- ▶ **New Approach**
International collaborative research through continuous overseas visits
- ▶ **New Approach**
Support from international mentors

- ▶ **New Approach**
Social implementation of research through collaboration with companies
- ▶ **New Approach**
Utilization of research results through collaboration with society

Interdisciplinarity

Interdisciplinary Researcher Exchange Program (5 years)

Interaction with researchers in different fields

TI-FRIS Fellows from different specializations and institutions gather across the boundaries of their specialties and affiliated institutions to present and discuss their research findings and conduct research exchanges that will develop into interdisciplinary research. This program aims to strengthen their ability to develop interdisciplinary research with researchers in different fields (interdisciplinarity).



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

TI-FRIS/FRIS Hub Meeting

Broad interaction among young researchers across fields and universities

TI-FRIS/FRIS Hub Meeting supports the growth of young researchers to understand the importance of interdisciplinary research and to be able to use it. The presentations will focus on "what is interesting about my field," "what is the research method in my field," and "introduction of problems that are not likely to be solved only within my field." The meeting is held once a month at Tohoku University and online.



- Hybrid of onsite and online participation
- Archiving of recorded videos
- Open to science journalists

Internationality

International Collaborative Research Program (5 years)

Collaborative research with world-class researchers

TI-FRIS Fellows stay at overseas research institutions and conduct continuous international collaborative research with world-class researchers. This program aims to strengthen their ability to advance research through friendly competition with researchers from around the world (internationality).



- Fund for Start-up Activities
- Fund for International Collaborative Research
- Grant for Publication and Presentation of Research Results
- Grant for Organizing Seminars

Sociability

Social Implementation Program (5 years)

Acquiring the ability to apply research to society

TI-FRIS Fellows undertake industry-academia collaborative research with companies and others. This program aims to strengthen their ability to work with society to translate research outcomes into social applications (sociability) in collaboration with society through exchanges and support for the development of the social implementation of their research results.



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

Transferable Skills Training Program (5 years)

Acquiring broadly applicable skills such as problem-solving, self-management, and interpersonal skills

To strengthen the skills essential for world-class researchers, this program offers courses by prominent researchers and experts from Japan and abroad. TI-FRIS is promoting resilient operation by holding lectures online and archiving recorded videos.

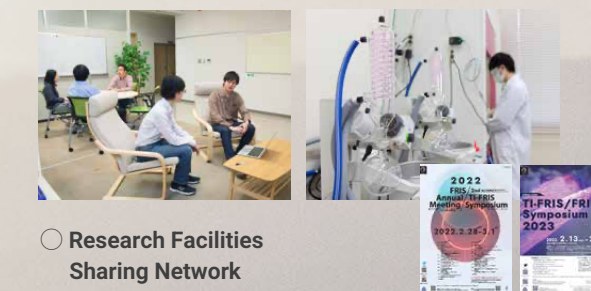
- Lecture Course by Top Researchers
- Lecture Course on Academic Impact
- Lecture Course on Societal Impact
- Lecture Course on Industrial R&D and Social Implementation
- Lecture Course on Interdisciplinary Research



Common Program

Fundamental research facilities and communication opportunities

In partnership with the participating institutions, TI-FRIS provides the fundamental research facilities for TI-FRIS Fellows to conduct independent research. TI-FRIS also offers opportunities for TI-FRIS Fellows to present their findings and interact with stakeholders and for introducing the Initiative.



- Research Facilities Sharing Network
- TI-FRIS Symposium

Double Mentor System

Domestic Mentor

Senior faculty members at TI-FRIS Fellows' home institutions serve as their domestic mentors to secure and support a stable and independent research environment for TI-FRIS Fellows.



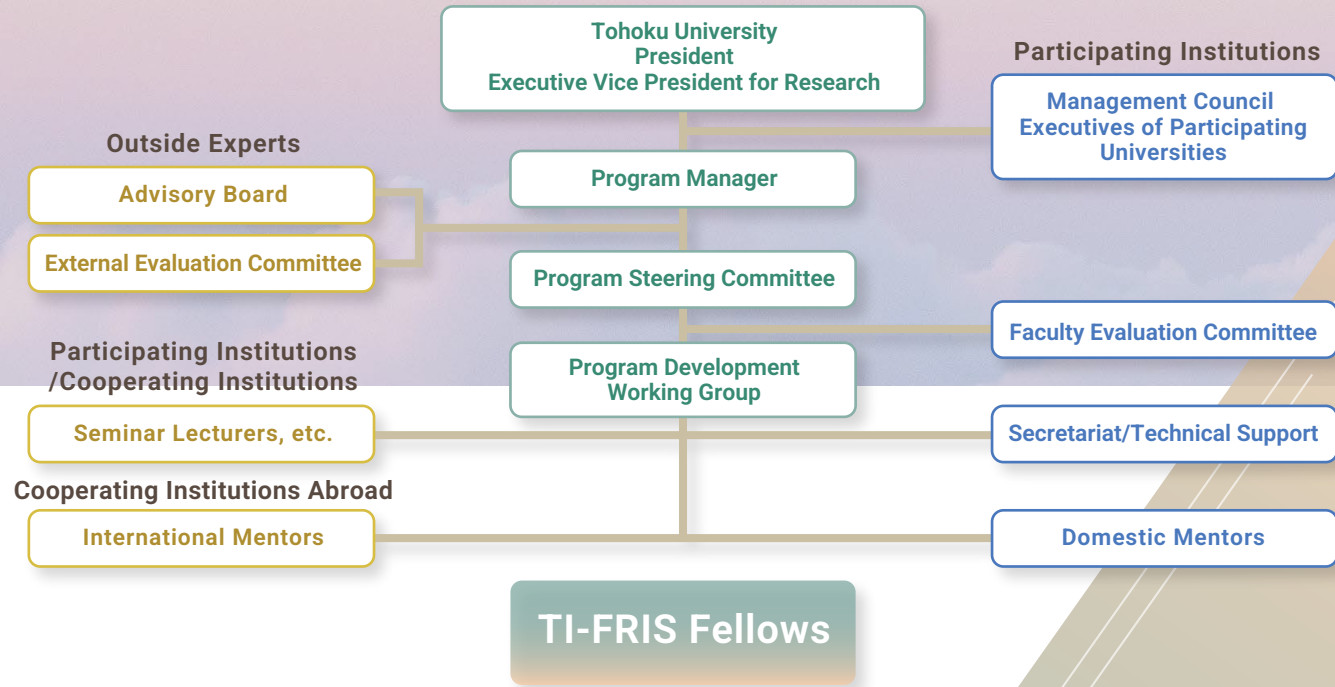
International Mentor

Senior researchers at TI-FRIS Fellows' international collaborating institutions serve as their international mentors to support TI-FRIS Fellows in a variety of ways to secure their international research environment.



Governance

The TI-FRIS Secretariat is located within the Frontier Research Institute at Tohoku University, the lead institution. The Program Manager oversees the Initiative, while the Program Steering Committee, composed of members from all participating institutions, discusses important matters. Outside experts form the Advisory Board and External Evaluation Committee and check the progress of the Initiatives, verify them, and make suggestions for improvement. The Faculty Evaluation Committee selects and assesses TI-FRIS Fellows, while the Program Development Working Group implements programs. Domestic and international mentors support TI-FRIS Fellows. An online researcher exchange and meeting system ensures efficient work and collaboration.



TI-FRIS Fellows

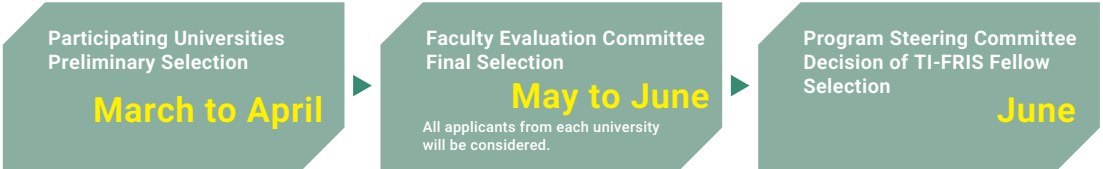
TI-FRIS Fellows are selected from participating universities every year. The Fellowship period is for a maximum of five years, followed by a five-year follow-up period. They will engage in regular interdisciplinary researcher exchanges across various specialties and institutions, continuous international collaborative research with overseas researchers, and the application of research outcomes in society.

The Initiative monitors the activities and research achievements of TI-FRIS Fellows as well as the effectiveness of the program and the achievement of its goals, providing feedback for program development (annual monitoring is conducted within the Initiative's implementation period).

After completing the Fellowship, the TI-FRIS Fellows may continue to participate in some of the programs as "Senior Fellows," conducting ongoing research exchanges.

Call for and Selection of TI-FRIS Fellows

Selection of TI-FRIS Fellows will be conducted in two stages: a preliminary selection at each participating university and a final selection at the Initiative.



Selection Perspectives

- Researchers affiliated with a participating university, who have obtained their doctorate within the last 10 years and who are less than 40 years old.
- Researchers 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 are **motivated to conduct international collaborative research** and who can begin it promptly.
- Researchers who are **motivated to realize the social implementation of research results** by interacting with a variety of stakeholders.

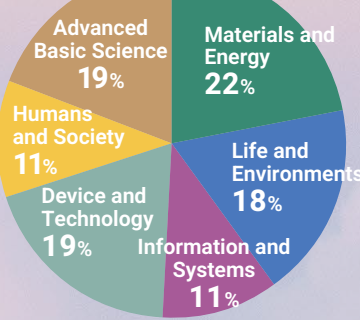
Statistics of Current Fellows

Positions / Associate Professor: 12
Assistant Professor: 15
Average age / 36.6 years old
(as of June 2023)

Diversity in Research Institutions



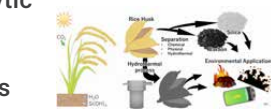
Research Areas



Examples of TI-FRIS Fellows' Activities

Development of Electrocatalytic Materials by Supercritical Hydrothermal Treatment of Organic and Inorganic Wastes

Dr. Yuta Nakayasu (Tohoku University)
Dr. Kazutoshi Haga (Akita University)
Dr. Hiroya Abe (Tohoku University)



Organizing a Public Lecture by the President of Urakawa Bethel House



Dr. Yuki Takahashi (Fukushima University)





HIROSAKI
UNIVERSITY



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