



# T-GEx

Strategic Professional Development Program for  
Young Researchers  
Tokai Pathways to Global Excellence

FY2023 Annual Report

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## 1. Preface

We are pleased to present the FY2023 report of the Tokai Pathways to Global Excellence (T-GEEx). This program began in October 2021, aiming to develop advanced knowledge “groundbreakers” who solve global challenges. Again, we want to express our gratitude to all those at Nagoya University and Gifu University, as well as partner academic institutions and companies, who have worked hard to develop the T-GEEx program since its inception. Above all, I would like to express my sincere gratitude to the T-GEEx Fellows and T-GEEx Associates, who have been actively involved in various seminars and events from the planning stage, enriching the work of T-GEEx.

With the start of the 2023 fiscal year, five new T-GEEx Fellows (one of whom is affiliated with Gifu University) and five new T-GEEx Associates joined the group. Currently, a total of 28 early career researchers are participating in this program, and T-GEEx is rapidly evolving into a "bloc" of excellent early career researchers in the Tokai region. This year, we introduced a new Company Associate system, and one Company Associate joined. By having these new Fellows and Associates, the diversity of early career researchers gathering at T-GEEx is steadily increasing, with Fellows choosing the entrepreneurial track and engaging in the launch of industry-academia collaboration activities. On the other hand, several Fellows have "graduated" from T-GEEx by obtaining positions at other universities, and the activities of T-GEEx are also spreading across Japan and the world dynamically through these transfers of young T-GEEx Fellows and Associates.

In 2023, which is the third year of the project, we not only sought to improve events that had already been held once, such as the Retreat and Research Outcomes Exhibition but also took on new challenges, such as hosting an international workshop inviting early career researchers from the University of Freiburg in Germany and a seminar on obtaining external funding. The 2023 Retreat was held in Gifu City with the theme of "Giving Gifts to Each Other." The number of Fellows and Associates who stayed overnight increased, and it was an excellent opportunity for them to get to know each other and have in-depth discussions about their research. We received three applications for the Seeds Joint Research Fund after the Retreat, and we also called for applications in the spring of 2023, so five applications successfully secured the finding. The seeds of collaborative research at T-GEEx are steadily growing.

This year's Research Outcomes Exhibition was held over the entire day, and new features included short presentations and panel discussions. It was a huge success thanks to active participation from partner academic institutions and companies. At the Retreat and Research Outcomes Exhibition, in response to requests from Fellows and Associates, we provided several opportunities for awards presentations. We observed that this offered an excellent opportunity for early career researchers to be inspired, such as a young researcher from a partner company winning the best poster award at the Research Outcomes Exhibition. In addition, we offer seminars throughout the year to help build better transferable skills, and we continue to support the active research engagement of our Fellows and Associates by reviewing and evaluating Start-up and Tailor-made Research Funds applications and setting up and implementing a mentoring system.

Through these activities, T-GEEx has received a wealth of valuable advice on improving our operations, including the need to establish the T-GEEx brand. In FY2024, we are planning to undertake some exciting new initiatives, such as holding our first External evaluation committee. We are eager to make effective use of the advice we have received so far to continue to enhance our operations. This report will not only provide a glimpse into the accomplishments of T-GEEx Fellows and Associates but also instil a sense of optimism and anticipation for the future of the program.

June 2024  
Tokai Pathways to Global Excellence  
Program Manager  
Hiroko Takeda

## 2. Target People for Training

### 2-1 Adopted in FY2023

#### 1) T-GEEx Fellow

The selection of T-GEEx Fellows for FY2023 were recruited through public applications from Nagoya University and Gifu University, with internal selection processes conducted at each university (1st selection), after which the final selection (2nd selection) was made by the Working Committee (Selection and Evaluation Committee). The final selection was conducted through a comprehensive online interview, and after deliberation, the five new researchers, as shown in Table 2-1-1, were adopted.

Table 2-1-1 T-GEEx Fellows adopted in FY2023

| Year of Adoption | University Name  | Department Title                                    | Title of Research Subject   |
|------------------|------------------|---|---|
| FY2023           | Nagoya Univ.     | IAR/Bioagricultural Sciences                        | Improving plant ability to adapt to a fluctuating nutritional environment for a cleaner and sustainable agriculture |
|                  | Fanny Bellegarde | YLC Designated Assistant Prof.                      |   |
|                  | Nagoya Univ.     | Dept. of Integrated Health Science                  | Factors and social structure associated with social isolation of people with Severe Mental Illness (SMI)            |
|                  | Aiko Hoshino     | Lecturer  |   |
|                  | Nagoya Univ.     | School of Engineering                               | Migration-driven Nanoscale Metallic Additive Manufacturing for Metamaterial Fabrication                             |
|                  | Yasuhiro Kimura  | Assisant Prof.                                      |   |
|                  | Nagoya Univ.     | IAR/Medicine  | Integrating genomics and biophysics to develop a new drug for tauopathy   |
|                  | Koyo Tsujikawa   | YLC Designated Assistant Prof.                      |   |
|                  | Gifu Univ.       | IAR/Drug Discovery and Medical Information Sciences | Development of artificial cell-type molecular robots to address the challenges of CAR-T cell therapy                |
|                  | Sayuri Higashi   | G-YLC Designated Assistant Prof.                    |   |

The ratio of successful applicants for FY2023 was about five times, which was the same as in previous years.

#### 2) T-GEEx Associate

The T-GEEx Associates for FY2023 were recruited and recommended by six partner academic institutions. After the application documents were reviewed by the Working Committee (Selection and Evaluation Committee), a decision was made to adopt a total of 12 people, including the five new researchers shown in Table 2-1-2. The adopted T-GEEx Associates were given the status of visiting researcher at Institute for Advanced Research, Nagoya University, and were given access to the facilities, equipment sharing system, and library at Tokai National Higher Education and Research System before their training began.

Table 2-1-2 T-GEEx Associates adopted in FY2023

| Year of Adoption | Institution Name                           | Department Title   | Field of Expertise  |
|------------------|--|--|---|
| FY2023           | Mie Univ.                                  | Faculty of Education<br>Shunsuke Ichikawa Associate Prof.                | Biochemistry, Applied Microbiology, Bioengineering, Enzyme Engineering          |
|                  | Nanzan Univ.                               | Faculty of Economics<br>Yuta Ogane Associate Prof.                       | Theory of finance, Entrepreneurship   |
|                  | Mie Univ.                                  | Faculty of Engineering<br>Shun Okuhara Associate Prof.                   | Artificial Intelligence (Multi-Agent, Auto-Negotiation), Educational Technology |
|                  | Meijo Univ.                                | Faculty of Information<br>Yusuke Nozaki Assistant Prof.                  | Hardware Security   |
|                  | National Astronomical Observatory of Japan | Research Enhancement Strategy Office<br>Masato Shirasaki Assistant Prof. | Observational Cosmology, Informatics Astronomy                                  |

### 3) T-GEEx Company Associate

We decided to start a trial recruitment of young researchers from partner companies (T-GEEx Company Associates) in FY2023. Specifically, we issued a call for applications to the 11 partner companies participating in the consortium and requested them to select nominees. The first application was received in November, and after reviewing it by the Working Committee (Selection and Evaluation Committee), the decision was made to adopt one new researcher as shown in Table 2-1-3. The adopted T-GEEx Company Associates were given the status of visiting researcher at Institute for Advanced Research, Nagoya University, and were given access to the facilities, equipment sharing system, and library at Tokai National Higher Education and Research System before their training began.

Table 2-1-3 T-GEEx Company Associates Adopted in FY2023

| Year of Adoption | Partner Company Name                | Department Title                         | Main business and research      |
|------------------|-------------------------------------|--|---------------------------------|
| FY2023           | NEOREX Co., Ltd.<br>Shinya Sugihara | Technology G<br>Advanced Senior Engineer | System Development, Informatics |

## 2-2 Ended in FY2023

### 1) T-GEEx Fellow

The basic training period for T-GEEx Fellows is set at five years, but five T-GEEx Fellows shown in Table 2-2-1 were ended during FY2023 due to reasons such as changing the post.

Table 2-2-1 T-GEEx Fellows who ended their training in FY2023

| End of Training   | University<br>Name | Department<br>Title   | Year of<br>Adoption | Training<br>Period | Reason            |
|-------------------|--------------------|---|---------------------|--------------------|-------------------|
| July in 2023      | Nagoya Univ.       | Institute for Space-Earth<br>Environmental Research<br>Satoko Nakamura Designated Associate Prof.             | FY2022              | 1 year<br>4 months | resignation       |
| August in 2023    | Nagoya Univ.       | IAR/Institute for Space-Earth<br>Environmental Research<br>Shinnosuke Ishizuka YLC Designated Assistant Prof. | FY2022              | 1 year<br>5 months | resignation       |
| September in 2023 | Nagoya Univ.       | IAR/Medicine<br>Hirotaka Iijima YLC Designated Assistant Prof.  | FY2022              | 1 year<br>6 months | changing the post |
| March in 2024     | Nagoya Univ.       | Dept. of Aerospace Engineering<br>Daisuke Ichihara Assistant Prof.  | FY2022              | 2 years            | changing the post |
| March in 2024     | Nagoya Univ.       | Center for Gender Diversity<br>Naoto Machida Project Assistant Prof.  | FY2022              | 2 years            | changing the post |

In addition, three researchers, Hirotaka Iijima, Daisuke Ichihara, and Naoto Machida, were awarded Certificates of Outstanding Achievements in recognition of their outstanding activities within the program.

### 2) T-GEEx Associate

The training period for T-GEEx associates is set at least one year to five years, and training for four people, as shown in Table 2-2-2, was ended during FY2023 due to reasons such as changing the post.

Table 2-2-2 T-GEEx Associates who ended their training in FY2023

| End of Training | Institution<br>Name                        | Department<br>Title  | Year of<br>Adoption | Training<br>Period | Reason            |
|-----------------|--|--|---------------------|--------------------|-------------------|
| August in 2023  | Mie Univ.                                  | Faculty of Engineering<br>Shiyu Xiao Assistant Prof.                     | FY2022              | 1 year<br>5 months | resignation       |
| March in 2024   | Nanzan Univ.                               | Dept. of Anthropology and Philosophy<br>Akira Nakao Associate Prof.      | FY2022              | 2 years            | self-judgment     |
| March in 2024   | Toyohashi Univ. of Technology              | Dept. of Mechanical Engineering<br>Masahito Nishikawara Assistant Prof.  | FY2022              | 2 years            | changing the post |
| March in 2024   | National Astronomical Observatory of Japan | Research Enhancement Strategy Office<br>Masato Shirasaki Assistant Prof. | FY2023              | 1 year             | self-judgment     |

In addition, Assistant Professor Masahito Nishikawa was awarded a Certificate of Outstanding Achievements in recognition of his outstanding activities within the program.



### 3. Development Program

#### 3-1 Transferable Skills

The T-GEEx training program organizes and categorizes the various transferable skills acquired by T-GEEx Fellows and associates as advanced knowledge “groundbreakers” skills framework consisting of six competencies (“advanced expertise,” “ability to collaborate,” “ability to discover issues,” “ability to grasp global trends,” “sense of setting the future direction,” and “ability to promote research.”). T-GEEx Fellows, Associates, and Company Associates will improve these competencies through participation in Skill Booster Modules, research activities, social implementation, outreach etc.

In FY2023, 21 Skill Booster Modules were held. Details are as shown in Table 3-1.

Table 3-1 Skill Booster Modules implemented in FY2023

| Fiscal Year | Dates                  | Titles   | Module Classification |                      | Ability to collaborate | Advanced expertise | Ability to discover issues | Ability to grasp global trends | Sense of setting the future direction | Ability to promote research |
|-------------|------------------------|--|-----------------------|----------------------|------------------------|--------------------|----------------------------|--------------------------------|---------------------------------------|-----------------------------|
| FY2023      | 25-Apr-23              | JST Strategic Basic Research Programs (CREST, PRESTO, ACT-X) Seminar on Strategy'  | Management Skills     |                      |                        |                    |                            |                                |                                       |                             |
|             | 6-Jun-23               | PI development seminar 'Design Terakoya for Researchers'   | Management Skills     | Communication Skills |                        |                    |                            |                                |                                       |                             |
|             | 20-Jun-23              | PI development seminar 'Grant-in-Aid Strategy Seminar for Early Career Researchers 2023'   | Management Skills     |                      |                        |                    |                            |                                |                                       |                             |
|             | 18-Jul-23              | PI development seminar 'Creating a Research Portfolio - Beginner's Guide to Creating a Website'                                    | Management Skills     | Communication Skills |                        |                    |                            |                                |                                       |                             |
|             | 27-Sep-23              | PI development seminar 'How to use SciVal for Researchers - Analyze your own research results'                                     | Management Skills     |                      |                        |                    |                            |                                |                                       |                             |
|             | 20-Oct-23              | PI development seminar 'Consideration of leadership style as a PI'   | Management Skills     | Communication Skills |                        |                    |                            |                                |                                       |                             |
|             | 21-Nov-23              | PI development seminar 'How to write a "press release" that catches the media's attention'   | Communication Skills  | Social Engagement    |                        |                    |                            |                                |                                       |                             |
|             | 19-Dec-23              | PI development seminar 'Methods of Smooth Communication (Part 1) - Considering Anger Management'                                   | Management Skills     | Communication Skills |                        |                    |                            |                                |                                       |                             |
|             | 24-Jan-23              | PI development seminar 'Methods of Smooth Communication (Part 2) - Active Listening and Assertive Communication'                   | Management Skills     | Communication Skills |                        |                    |                            |                                |                                       |                             |
|             | 6-Feb-24<br>20-Feb-24  | PI development seminar 'The basics of patenting for career advancement and why you should patent your research results'            | Management Skills     | Social Engagement    |                        |                    |                            |                                |                                       |                             |
|             | 16-Sep-23              | Leadership Program for Researchers2023<br>'Thinking about your career'   | Role Model Study      |                      |                        |                    |                            |                                |                                       |                             |
|             | 17-Oct-23              | Leadership Program for Researchers2023<br>'Deepen self-understanding, leading to understanding of others and mutual understanding' | Management Skills     | Communication Skills |                        |                    |                            |                                |                                       |                             |
|             | 10-Nov-23              | Leadership Program for Researchers2023<br>'Action Plan for Career Development - Step 1'  | Management Skills     |                      |                        |                    |                            |                                |                                       |                             |
|             | 15-Dec-23              | Leadership Program for Researchers2023<br>'Time Management for Researchers'  | Management Skills     |                      |                        |                    |                            |                                |                                       |                             |
|             | 12-Jan-24              | Leadership Program for Researchers2023<br>'Action Plan for Career Development - Step 2'  | Management Skills     |                      |                        |                    |                            |                                |                                       |                             |
|             | 21-Dec-24              | Role Model Seminar 'Experiences in obtaining external funding'   | Management Skills     |                      |                        |                    |                            |                                |                                       |                             |
|             | 1-Sep-23               | Seminar on Intellectual Property 'Regarding the introduction of the Consent System under the Trademark ACT'                        | Management Skills     | Social Engagement    |                        |                    |                            |                                |                                       |                             |
|             | 4-Feb-24<br>- 9-Feb-24 | Retreat Camp Project 1 : Promoting Beneficial Interdisciplinary Collaborative Research   | Networking            | Retreat              |                        |                    |                            |                                |                                       |                             |
|             | 4-Sep-23<br>5-Sep-23   | Retreat Camp Project 2 : Gifts: the research survival guide  | Networking            | Retreat              |                        |                    |                            |                                |                                       |                             |
|             | 28-Nov-23              | T-GEEx Exhibition of Research Achievements 2023  | Networking            | Communication Skills |                        |                    |                            |                                |                                       |                             |
|             | 8-Feb-24<br>- 9-Feb-24 | The International Workshop2023 : Overlapping crises and pathways to solutions  | Networking            | Communication Skills |                        |                    |                            |                                |                                       |                             |

### 3-2 e-Portfolio

We developed an e-portfolio for T-GEEx Fellows as a tool to analyze how they will improve six competencies of advanced knowledge through participation in the T-GEEx program. In the e-portfolio, T-GEEx Fellows will record 1) the competencies they have improved through their research activities and 2) the competencies they expect to improve through participating in the Skill Booster Module. In addition, ③ the mentoring with academic mentors and corporate advisors were also recorded. These are constructed so that they can be used as a tool to reflect on overall research activities. In 2023, we verified the input method for (1), (2), and (3) and asked T-GEEx Fellows to actually input the data.

### 3-3 Retreat Camp

- Date and time: September 4th to 5th, 2023 (Day 1: 9:30am to 7pm, Day 2: 9:30am to 3pm)
- Location: Hotel Resol Gifu

A retreat camp was held for T-GEEx Fellows and Associates to understand each other's research content and the image of researchers, to explore interdisciplinary collaborative research units that can be launched in the near future and to build a network of T-GEEx researchers that can cooperate on a permanent basis. The planning and management of this event was positioned as a task force and was handled by three T-GEEx Fellows and two T-GEEx Associates.

In 2023, we carried out Project 1, "Promoting complementary and mutually beneficial interdisciplinary collaborative research," and Project 2, "Advice session on research life concerns." In Project 1, participants provided feedback to presenters on their research presentations, and presenters then provided feedback to participants' comments, which helped to raise consciousness of interdisciplinary collaborative research. Based on the evaluation results of Project 1, six award winners (four T-GEEx Fellows and three T-GEEx Associates) were selected, including the Best Presentation Award. In Project 2, participants shared three concerns (student guidance, research funding, and time management) and discussed ways to solve them. A total of 22 people participated (21 on-site and 1 online), which deepened mutual understanding and led to a proposal for a seeds joint research fund.

### 3-4 Research Outcomes Exhibition

- Date and time: November 28, 2023, 10:00-18:00
- Venue: Nagoya University, Research Center for Materials Science, Noyori Memorial Hall

Opportunities to disseminate research results, collect and exchange information for research development and social implementation, and build personal connections as a part of this initiative, a research results exhibition was held. The planning and management of this event was positioned as a task force and was handled by three T-GEEx Fellows and two T-GEEx Associates. The theme of this year's symposium was "Transcending the Boundaries of Research Fields," and approximately 100 people participated.

The first half of the event featured two special lectures (by Professor Sotaro Uemura of the University of Tokyo and Professor Yasuhiro Oyama of the Open University of Japan), followed by a panel discussion featuring the two professors, T-GEEx Fellows, and T-GEEx Associates. One memorable moment was when many participants were taken aback by a comment that "the barriers between fields don't really exist, but perhaps researchers create them in their own minds." In the second half of the event, there were short presentations and a poster session on a total of 23 topics, including five presented by corporate company researchers. There was a lively and enthusiastic exchange of opinions, and the Best Presentation Award went to Takuya Igashira (DENSO Corporation).

### 3-5 Role Model Seminar (Experiences in Obtaining External Funding)

- Date and time: December 21, 2023, 3:00 p.m. - 5:30 p.m.
- Venue: JR Gate Tower Conference (Nagoya Station)

We chose "Experiences in Obtaining External Funding" as a theme that young researchers can immediately apply to their own research activities and organized an opportunity for two lectures and discussion. This was also positioned as a second role model seminar, and the first speaker was Dr. Akira Yokoi, a lecturer at Nagoya University Hospital who is a member of the first batch of T-GEEx Fellows and has been successful in obtaining a wide range of large-scale funding from programs such as "FOREST (Fusion Oriented Research for Disruptive Science and Technology)," "AMED (Japan Agency for Medical Research and Development)," and "Kakenhi (Grants in Aid for Scientific Research)". He shared his experiences and thoughts on preparation and strategy.

The second speaker was Mayuko Kumasaka, Lead URA of Academic Research and Industry-Academia-Government Collaboration in Nagoya University, who is involved in the operation of T-GEEx. She has many years of experience supporting various applications from researchers in a wide range of fields and spoke about the important points of their preparation.

All of the content was extremely informative, and not only did participants engage in lively Q&A sessions, but the Working Committee members, Professor Sakakibara and Professor Shima, also provided very thought-provoking comments and advice, making for a very productive session.

### 3-6 International Workshop with University of Freiburg

- Date and time: February 8-9, 2024
- Venue: Nagoya University, NIC, large conference room and small conference room

We held an international workshop with the Young Academy of Sustainable Research (YAS) of the University of Freiburg, one of the universities visited in 2023 to collect best practices from overseas. Organizers from the T-GEEx Fellows and YAS members jointly planned a program on global issues via web conference. The participants were 13 people onsite, including 3 YAS members invited to Nagoya University, and about 7 people online, including from overseas.

The first day began with two-minute self-introductions by each participant, followed by two oral presentation sessions ("Understanding our environment" and "Sustainable urban development") and a poster session. After the introduction of the session by the moderator, research presentations (10 minutes each) were performed, followed by time for general discussion. During the poster session, there was a continuation of the Q&A and discussions that had not been covered during the oral presentation session.

On the second day, we had a lab tour of Nagoya University's Disaster Mitigation Center and ITbM in the morning. Next, we welcomed Dr. Awaga, Director of the Institute for Advanced Research (IAR) of Nagoya University, and he spoke about the future grant between IAR and YAS. Afterwards, the third oral presentation session entitled "Human health and well-being." was held.

Finally, there was a general discussion in a World Cafe format (small groups of 3-4 people discuss the topic, followed by a moderator summarizing the discussion) on two themes: "Global challenges and regional/scientific specification" and "Early career researchers' difficulties to tackle such challenges." In the former theme, it was confirmed through discussion that the global issues being addressed are problems that involve the overlap of multiple fields, and the keywords raised for solving these problems were "being proactive/engaging/involved/communicating knowledge." In the latter theme, many opinions were expressed regarding employment instability, research funding, and evaluation, which proved to be common issues.

Although this workshop was relatively small in scale, it was packed with content over two days and provided a good opportunity to consider individual research projects from a bird's-eye view, transcending national and specialized boundaries. The above format (short presentations and longer discussions) was decided upon after much discussion among organizers in charge of planning and running the event. Specifically, because the participants were from a wide range of research fields, from humanities and social sciences to science and engineering, the priority was to communicate their research in an easy-to-understand manner in a limited time. Although many of the researchers had plenty of experience giving presentations in English, they were not used to open discussions, so we incorporated World Cafe format that allows for casual conversation in small groups. Although the YAS members seemed more used to discussions than the T-GEEx members, the format that allowed all participants to share their opinions seemed to be effective.

### 3-7 Academic Mentors and Corporate Advisors

#### 1) T-GEEx Fellow

In Phase 1 (first year), an academic mentor with expertise in the field is appointed, and in Phase 2 (second year), a second mentor is appointed taking into account the training track selected, providing a double mentoring system. The first mentor is generally decided by the Working Committee, but the mentee's preference is also taken into consideration for the second mentor or corporate adviser. We recommend that Fellows actively appoint an overseas researcher if they are choosing the International joint research track, a researcher from a different field if they are choosing the Interdisciplinary joint research track, and a corporate advisor if they are choosing the Industry-Academia collaboration track or Entrepreneurship track. In FY2023, academic mentors and corporate advisors were assigned to the 18 T-GEEx Fellows, as shown in Table 3-7-1.

Table 3-7-1 Academic mentors and corporate advisors for T-GEEx Fellows

| Year of Adoption | Name             | Title                            | Institution  | Department   | Track          | Academic Mentor 1<br>(Name, Title, University, Department)  | Academic Mentor 2<br>(Name, Title, University, Department)   | Corporate Advisor<br>(Name, Title, Corporate)                  |
|------------------|------------------|----------------------------------|--------------|--|----------------|---|--|--|
| FY2021           | Naoki Azuma      | Assisant Prof.                   | Nagoya Univ. | Dept. of Micro-Nano Mechanical Science and Engineering | ID             | Kenji Fukuzawa Prof.<br>Nagoya Univ.<br>Dept. of Micro-Nano Mechanical Science and Engineering                          | Keigo Shibayama Prof.<br>Nagoya Univ.<br>Microbiology and Immunology                                 | —  |
|                  | Hanako Hagio     | YLC Designated Assistant Prof.   | Nagoya Univ. | IAR/Bioagricultural Sciences                           | IN, ID, IA     | Naoyuki Yamamoto Prof.<br>Nagoya Univ. Dept. of Animal Sciences   | Kei Yamamoto Chargé de Recherche<br>Centre national de la recherche scientifique (France)            | —  |
|                  | Yuki Hattori     | Associate Prof.                  | Nagoya Univ. | Anatomy and Cell Biology                               | IN, ID         | Takaki Miyata Prof.<br>Nagoya Univ. Anatomy and Cell Biology  | Hiroaki Wake Prof.<br>Nagoya Univ. Anatomy and Cell Biology  | —  |
|                  | Hisashi Hayakawa | YLC Designated Assistant Prof.   | Nagoya Univ. | IAR/   | IN, ID         | Kanya Kusano Prof.<br>Nagoya Univ.  | Yoshiyuki Suto Prof.<br>Nagoya Univ. Dept. of Occidental History                                     | —  |
|                  | Ryo Higuchi      | YLC Designated Assistant Prof.   | Nagoya Univ. | IAR/Humanities   | IN, ID         | Institute for Space-Earth Environmental Research<br>Yukiko Kawamoto Associate Prof.<br>Nagoya Univ. Dept. of Humanities | Lioba Theis University Prof.<br>University of Vienna (Austria)                                       | —  |
|                  | Matthew Paul Su  | YLC Designated Assistant Prof.   | Nagoya Univ. | IAR/Science  | IN             | Azusa Kamikouchi Prof.<br>Nagoya Univ. Dept. of Biological Science  | Tsuyoshi Hirota Designated Prof.<br>Nagoya Univ.<br>Institute of Transformative Bio-Molecules        | —  |
|                  | Hironao Miyatake | Associate Prof.                  | Nagoya Univ. | Kobayashi-Maskawa Institute                            | IN             | Kiyotomo Ichiki Prof.<br>Nagoya Univ. Kobayashi-Maskawa Institute   | Yoshitaka Itow Prof.<br>Nagoya Univ.<br>Institute for Space-Earth Environmental Research             | —  |
|                  | Akira Yokoi      | Lecturer                         | Nagoya Univ. | Hospital   | IA             | Hiroaki Kajiyama Prof.<br>Nagoya Univ. Medicine in Growth and Aging   | —  | Satoko Takizawa<br>Senior Manager<br>Toray Industries          |
| FY2022           | Kazuki Heishima  | G-YLC Designated Assistant Prof. | Gifu Univ.   | IAR/Drug Discovery and Medical Information Sciences    | IN, ID         | Takashi Mori Prof.<br>Gifu Univ. Faculty of Applied Biological Sciences   | Takamitsu Kato Associate Prof.<br>Colorado State University (USA)                                    | —  |
|                  | Hiroataka Iijima | YLC Designated Assistant Prof.   | Nagoya Univ. | IAR/Medicine   | IN             | Yuske Matsui Associate Prof.<br>Nagoya Univ. Institute for Glyco-core Research  | Fabrisia Ambrosio Director<br>Harvard Medical School (USA)   | —  |
|                  | Daisuke Ichihara | Assistant Prof.                  | Nagoya Univ. | Dept. of Aerospace Engineering                         | ID             | Hosei Nagano Prof.<br>Nagoya Univ.<br>Dept. of Mechanical Systems Engineering   | Kazuo Osada Prof.<br>Nagoya Univ.<br>Dept. of Earth and Planetary Sciences                           | —  |
|                  | Naoto Machida    | Project Assistant Prof.          | Nagoya Univ. | Center for Gender Diversity                            | IN, ID         | Kenji Hiraishi<br>Nagoya Univ.<br>Dept. of Psychology and Human Developmental Sciences                                  | Kohei Kozuke Associate Prof.<br>Nagoya Univ.<br>Dept. of Psychology and Human Developmental Sciences | —  |
|                  | Satoko Nakamura  | Designated Associate Prof.       | Nagoya Univ. | Institute for Space-Earth Environmental Research       | IN, ID, IA, ES | Yoshizumi Miyoshi Prof.<br>Nagoya Univ.<br>Institute for Space-Earth Environmental Research                             | —  | Katsuya Hashizume<br>Executive Officer<br>Beyond Next Ventures |
| FY2023           | Fanny Bellegarde | YLC Designated Assistant Prof.   | Nagoya Univ. | IAR/Bioagricultural Sciences                           | IN             | Hitoshi Sakakibara Prof.<br>Nagoya Univ. Dept. of Applied Biosciences   |  |  |
|                  | Aiko Hoshino     | Lecturer                         | Nagoya Univ. | Dept. of Integrated Health Science                     | IN, ID         | Yasuhiro Uemura Associate Prof.<br>Nagoya Univ.<br>Dept. of Social and Human Environment                                |  |  |
|                  | Yasuhiro Kimura  | Assisant Prof.                   | Nagoya Univ. | Dept. of Micro-Nano Mechanical Science and Engineering | ES             | Yuki Toku Associate Prof.<br>Nagoya Univ.<br>Dept. of Micro-Nano Mechanical Science and Engineering                     |  |  |
|                  | Koyo Tsujikawa   | YLC Designated Assistant Prof.   | Nagoya Univ. | IAR/Medicine   | IN, ID, IA     | Masahisa Katsuno Prof.<br>Nagoya Univ. Clinical Neuroscience  |  |  |
|                  | Sayuri Higashi   | G-YLC Designated Assistant Prof. | Gifu Univ.   | IAR/Drug Discovery and Medical Information Sciences    | IN, ID         | Masato Ikeda Prof.<br>Gifu Univ. Faculty of Engineering   |  |  |
|                  |                  |                                  |              |  |                |   |  |  |

Abbreviations: IN, International Joint Research; ID, Interdisciplinary Joint Research; IA, Industry-Academia Collaboration; ES, Entrepreneurship

## 2) T-GEEx Associate

In response to requests from partner academic institutions, T-GEEx Associates who wish to have a mentoring were also able to assign one academic mentor from FY2023. In FY2023, four T-GEEx Associates from three partner academic institutions requested the appointment of an academic mentor, and we assigned them based on their requests as shown in Table 3-7-2.

Table 3-7-2 Academic Mentors for T-GEEx Associates

| Year of Adoption | Name                          | Title                                     | Academic Mentor  |
|------------------|-------------------------------|---|--|
|                  | Institution                   | Department                                | (Name, Title, University, Department)                      |
| FY2022           | Seine A Shintani              | Lecturer                                  | Hironobu Fujiyoshi Prof.                                   |
|                  | Chubu Univ.                   | Dept. of Biomedical Sciences              | Chubu Univ. Dept. of Robotic Science and Technology        |
|                  | Hideki Tamura                 | Assistant Prof.                           | Masahiro Hirai Prof.                                       |
|                  | Toyohashi Univ. of Technology | Dept. of Computer Science and Engineering | Nagoya Univ. Dept. of Cognitive and Psychological Sciences |
| FY2023           | Shunske Ichikawa              | Associate Prof.                           | Masaki Kita Prof.  |
|                  | Mie Univ.                     | Faculty of Education                      | Nagoya Univ. Dept. of Applied Biosciences                  |
|                  | Shun Okuhara                  | Associate Prof.                           | Kazuhisa Miwa Prof.  |
|                  | Mie Univ.                     | Faculty of Engineering                    | Nagoya Univ. Dept. of Cognitive and Psychological Sciences |

## 3) Survey of Academic Mentors

In April 2024, we conducted a survey of 27 academic mentors of T-GEEx Fellows regarding the achievements of the T-GEEx Fellows and their abilities grown, and received responses from 20 of them.

### <Achievements of T-GEEx Fellows>

The survey in this year did not involve a quantitative evaluation of the level of T-GEEx Fellows' activity. But in response to the free text question, "How do you assess the mentee's performance compared to other researchers of the same generation in your field within your country? (Mentors in Japan only)", approximately 60% responded with "excellent" (extremely high level, outstanding, etc.), approximately 30% with "very good" (superior, high, etc.), and the remaining 10% with the impression that their activity is "good." Similarly, in response to the free text question, "How do you assess your mentee's performance internationally compared to other researchers of the same generation in your field of study?", approximately 25% answered "excellent," approximately 40% answered "very good," and approximately 25% answered "good," with approximately 5% expressing the impression that they are "mediocre." From these responses, it can be inferred that while the majority of T-GEEx Fellows are performing extremely well domestically, only a limited number of them are also performing extremely well internationally, and that many of them have room to further excel internationally.

<Abilities that have developed significantly over the past year>

The abilities that showed significant growth over the course of FY2023 (advanced knowledge “groundbreakers” competencies, up to a maximum of three), are shown in Figure 3-7. “Ability to collaborate,” was significantly higher than the others and also showed significant growth compared to the previous year. One possible reason for this is that face-to-face events, which had been limited due to the effects of the COVID-19 pandemic until FY2022, were able to be held more frequently in FY2023, increasing opportunities and motivation for collaboration. In addition, the tendency for “advanced expertise, and “ability to promote research.” to be relatively high has not changed significantly since FY2022.

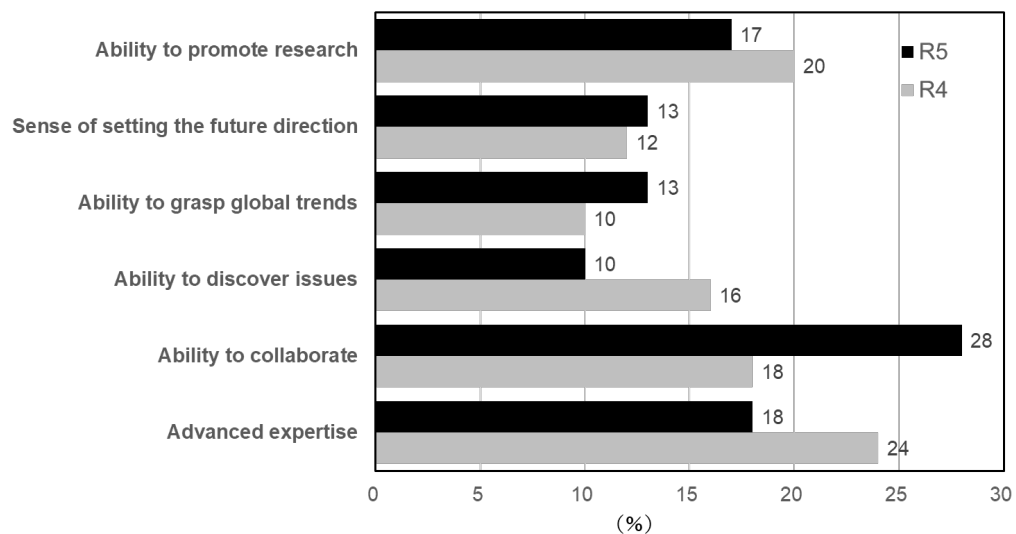


Figure 3-7 Greatly developed abilities (advanced knowledge “groundbreakers” competencies)

### 3-8 Start-up Research Fund

As part of the support for building an independent research environment in Phase 1, we provided research funds of up to 500,000 yen per Fellow for research aimed at solving the global issues that this project aims to tackle. The research fund can be used according to individual needs. Specifically, a total of 2.5 million yen was paid to the five T-GEEx Fellows adopted in FY2023.

### 3-9 Tailor-made Research Fund

T-GEEx Fellows select their desired track from among five training tracks (international joint research, interdisciplinary joint research, industry-academia collaboration, entrepreneurship, and extension) and conduct research to solve global issues under this program. As one of the supports for the cultivation of collaborative development capabilities from Phase 2, the research funds are provided for the research. In FY2023, the Working Committee (Selection and Evaluation Committee) reviewed applications for tailor-made research funds submitted by T-GEEx Fellows and determined the amount to be allocated, up to 3 million yen per T-GEEx Fellow per year. Specifically, a total of 35.15 million yen was granted to 14 T-GEEx Fellows adopted by FY2022.

### 3-10 Seeds Joint Research Fund

The program encourages joint research and joint projects between T-GEEx Fellows and T-GEEx Associates and supports their research expenses. The applications from teams led by T-GEEx Fellows are reviewed in the Working Committee (Selection and Evaluation Committee), and the selected teams and their amounts of grants are decided. From FY2023, the opportunities of application was increased to twice (July and October) to improve convenience. Through the review process, the following five projects (two in the first round and three in the second round) were selected and a total of 2.5 million yen was awarded.

#### <Selected Project 1>

[Project Leader] Kazuki Heishima (T-GEEx Fellow, Gifu University)

[Collaborating Researcher] Yuki Hattori (T-GEEx Fellow, Nagoya University),

Seine Shintani (T-GEEx, Associate, Chubu University)

[Research title] Live imaging analysis for the mitochondrial metabolism-associated mechanism of metastasis

#### <Selected Project 2>

[Project Leader] Yasuhiro Kimura (T-GEEx Fellow, Nagoya University)

[Collaborating Researcher] Naoki Azuma (T-GEEx Fellow, Nagoya University)

[Research title] Development of nanoscale hybrid additive manufacturing for mechaless-metalens



#### <Selected Project 3>

[Project Leader] Aiko Hoshino (T-GEEx Fellow, Nagoya University)

[Collaborating researcher] Shunsuke Ichikawa (T-GEEx Associate, Mie University)

[Research title] Developing pilot prevention model for severe mental stress in teachers based on stress check in Japan

#### <Selected Project 4>

[Project Leader] Aiko Hoshino (T-GEEx Fellow, Nagoya University)

[Collaborating Researcher] Hideki Tamura (T-GEEx Associate, Toyohashi University of Technology)

[Research title] Illusory-induced brightness perception in schizophrenia and its application to social function assessment

#### <Selected Project 5>

[Project Leader] Hironao Miyatake (T-GEEx Fellow, Nagoya University)

[Collaborating Researcher] Masato Shirasaki (T-GEEx Associate, National Institutes of Natural Sciences)  
Seine Shintani (T-GEEx, Associate, Chubu University)

[Research title] Preparatory Research for the Development of Dark and Baryon Emulator (DaBE)

### 3-11 Other Support

For T-GEEx Fellows who request space support and are able to secure space, a research space fee is provided up to a maximum of 50 m<sup>2</sup>. In FY2023, support was provided to six Fellows.

### 3-12 Questionnaire survey on training programs

An anonymous satisfaction survey regarding the various skill booster modules and support provided in FY2023 was conducted on a 5-point scale (1: Very dissatisfied, 2: Dissatisfied, 3: Average, 4: Satisfied, 5: Very satisfied) among T-GEEx Fellows, T-GEEx Associates, and T-GEEx Company Associates. As shown in Table 3-12, the majority of the programs were rated as 4 or above, confirming that they were in a good condition.

Table 3-12 Survey results regarding various training programs implemented in FY2023

| Fiscal Year | Titles of seminars or events   | Average score |
|-------------|--|---------------|
| FY2023      | 'JST Strategic Basic Research Programs (CREST, PRESTO, ACT-X) Seminar on Strategy'   | 4.0           |
|             | PI development seminar<br>'Design Terakoya for Researchers'  | 4.1           |
|             | PI development seminar<br>'Grant-in-Aid Strategy Seminar for Early Career Researchers 2023'  | 4.1           |
|             | PI development seminar<br>'Creating a Research Portfolio - Beginner's Guide to Creating a Website'                                 | 4.3           |
|             | PI development seminar<br>' - How to use SciVal for Researchers - Analyze your own research results'                               | 3.0           |
|             | PI development seminar<br>'Consideration of leadership style as a PI'  | 4.0           |
|             | PI development seminar<br>'How to write a "press release" that catches the media's attention'                                      | 4.7           |
|             | PI development seminar<br>'Methods of Smooth Communication (Part 1) - Considering Anger Management'                                | 5.0           |
|             | PI development seminar 'Methods of Smooth Communication (Part 2)<br>- Active Listening and Assertive Communication'                | 4.0           |
|             | PI development seminar<br>'The basics of patenting for career advancement and why you should patent your research results'         | 5.0           |
|             | Leadership Program for Researchers2023<br>'Thinking about your career'   | 4.3           |
|             | Leadership Program for Researchers2023<br>'Deepen self-understanding, leading to understanding of others and mutual understanding' | 4.3           |
|             | Leadership Program for Researchers2023<br>'Action Plan for Career Development - Step 1'  | 4.3           |
|             | Leadership Program for Researchers2023<br>'Time Management for Researchers'  | 3.3           |
|             | Leadership Program for Researchers2023<br>'Action Plan for Career Development - Step 2'  | 4.3           |
|             | Role Model Seminar<br>'Experiences in obtaining external funding'  | 4.9           |
|             | Retreat Camp Project 1 : Promoting Beneficial Interdisciplinary Collaborative Research   | 4.8           |
|             | Retreat Camp Project 2 : Gifts: the research survival guide  | 4.6           |
|             | T-GEx Research Results Exhibition 2023   | 4.3           |
|             | The International Workshop 2023 : Overlapping crises and pathways to solutions   | 3.8           |
|             | Task Force : Retreat Camp  | 4.0           |
|             | Task Force : Research Results Exhibition 2023  | 4.3           |
|             | Task Force : International Workshop 2023   | 4.3           |
|             | Mentoring by Academic mentors and Corporate advisors   | 3.9           |
|             | Support by URAs  | 4.6           |
|             | Start-up Research Fund   | 4.7           |
|             | Tailor-made Research Fund  | 4.7           |
|             | Seeds Joint Research Fund  | 4.6           |
|             | Use of common facilities and library at Nagoya University  | 4.1           |

#### 4. Monitoring

##### 4-1 List of Attributes of T-GEEx Fellows Adopted

Five T-GEEx Fellows were adopted in FY2023, bringing the total number of Fellows adopted since the start of the program to 19. Their attributes are shown in Table 4-1. Their average age is relatively young at 33.7 years old, and most of Fellows are non-tenured Assistant Professors (i.e., specially Designated Assistant Professors). Additionally, the female ratio is relatively high at approximately 30%, and 10% of Fellows are of foreign nationality.

Table 4-1 Attributes of T-GEEx Fellows adopted by FY2023

|                            |                        | FY2021      | FY2022      | FY2023      | Total       |
|----------------------------|------------------------|-------------|-------------|-------------|-------------|
| <b>Number of Fellows</b>   |                        | <b>8</b>    | <b>6</b>    | <b>5</b>    | <b>19</b>   |
| <b>Gender</b>              | <b>Female</b>          | <b>2</b>    | <b>1</b>    | <b>3</b>    | <b>6</b>    |
|                            | <b>Male</b>            | <b>6</b>    | <b>4</b>    | <b>2</b>    | <b>12</b>   |
|                            | <b>Not applicable</b>  | <b>0</b>    | <b>1</b>    | <b>0</b>    | <b>1</b>    |
| <b>Nationality</b>         | <b>Japan</b>           | <b>7</b>    | <b>6</b>    | <b>4</b>    | <b>17</b>   |
|                            | <b>Foreign</b>         | <b>1</b>    | <b>0</b>    | <b>1</b>    | <b>2</b>    |
| <b>University</b>          | <b>Naogya</b>          | <b>8</b>    | <b>5</b>    | <b>4</b>    | <b>17</b>   |
|                            | <b>Gifu</b>            | <b>0</b>    | <b>1</b>    | <b>1</b>    | <b>2</b>    |
| <b>Position</b>            | <b>Associate Prof.</b> | <b>1</b>    | <b>0</b>    | <b>0</b>    | <b>1</b>    |
|                            | <b>Lecturer</b>        | <b>0</b>    | <b>0</b>    | <b>1</b>    | <b>1</b>    |
|                            | <b>Assistant Prof.</b> | <b>7</b>    | <b>6</b>    | <b>4</b>    | <b>17</b>   |
| <b>Tenure</b>              | <b>Tenured</b>         | <b>2</b>    | <b>1</b>    | <b>2</b>    | <b>5</b>    |
|                            | <b>non-tenured</b>     | <b>6</b>    | <b>5</b>    | <b>3</b>    | <b>14</b>   |
| <b>Average age (years)</b> |                        | <b>33.1</b> | <b>33.5</b> | <b>35.0</b> | <b>33.7</b> |

##### 4-2 T-GEEx Fellows' Track Selection and Goal Achievement Status

The training tracks selected by T-GEEx Fellows adopted by FY2023 are as shown in Table 4-2-1. "International joint research" and "Interdisciplinary joint research" were selected in about 70% of cases, indicating that many young researchers are interested in basic research. Additionally, about 20% of T-GEEx Fellows chose "Industry-academia collaboration" with the aim of implementing research results in society, and this year we were able to adopt one researcher who chose "Entrepreneurship," which had been an issue for us.

Table 4-2-1 Selection of training track by T-GEEx Fellows

| Selection of training tracks (%)<br>*Multiple selections available |                              |                                  |                                 |                  |                |
|--|------------------------------|----------------------------------|---------------------------------|------------------|----------------|
|  | International joint research | Interdisciplinary joint research | Industry-academia collaboration | Entrepreneurship | Extended track |
| 1st year   | 68                           | 63                               | 21                              | 5                | 42             |
| 2nd year   | 73                           | 73                               | 18                              | 0                | 55             |
| 3rd year   | 75                           | 63                               | 25                              | 0                | 75             |

As shown in Table4-2-2, the rate of T-GEEx Fellows who achieved the major goals linked to their selected training track (achievement rate) increased with the increase in the training period, reaching 88% by the third year, indicating that they are successfully producing results. We want to help everyone achieve their goals during the five-year training period.

Table 4-2-2 Achievement status of major goals tied to the training track

| Percentage of major goals tied to the training track achieved (%) |                     |   |                              |                                 |   |                                 |                                     |
|---|---------------------|---|------------------------------|---------------------------------|---|---------------------------------|-------------------------------------|
|   | Integrated          | International or Interdisciplinary joint research |                              | Industry-academia collaboration |   | Entrepreneurship                |                                     |
|   | Achievement rate(%) | At least two Q1 journal articles                  | External competitive funding | Funding from company            | Joint patent application with a company | Entrepreneurship contest awards | Funding related to entrepreneurship |
| Up to the 1st year  | 42                  | 12  | 41                           | 0                               | 0                                       | 0                               | 0                                   |
| Up to the 2nd year  | 64                  | 20  | 60                           | 50                              | 0                                       | -                               | -                                   |
| Up to the 3rd year  | 88                  | 57  | 71                           | 50                              | 50                                      | -                               | -                                   |

#### 4-3 Research Results Produced by T-GEEx Fellows

The status of research achievements produced by T-GEEx Fellows since their adoption (average value per person) is shown in Table 4-3. Outcomes include journal articles, books, invited talks, awards, press releases and media coverage. The number of peer-reviewed original papers by 1st or corresponding author and the number of international co-authors of papers have been found to be increasing as the training period increases. Additionally, an increasing trend has been observed in the number of invited lectures at both international and domestic conferences. These factors suggest that international collaborative research is steadily increasing and that research results that attract international attention are being produced.

On the other hand, there are relatively large annual changes in books, awards, press releases, and media coverage, making it difficult to predict changes over time. However, because the research fields of T-GEEx Fellows are broad and diverse, it will be necessary to continue to closely monitor changes in the numbers, with increase the number of Fellows and the training period.

Table 4-3 Research results produced by T-GEEx Fellows

|                         | Peer reviewed original papers |          |                             | Books | Invited lectures |          | Awards | Press Releases | Media coverage |     |
|-------------------------|-------------------------------|----------|-----------------------------|-------|------------------|----------|--------|----------------|----------------|-----|
|                         | n author                      | coauthor | international collaboration |       | international    | domestic |        |                | Newspaper      | TV  |
| At the time of adoption | 10.2                          | 13.4     | 8.2                         | 0.7   | 1.4              | 2.3      | 3.6    | 0.7            | 1.6            | 0.2 |
| 1st year                | 1.2                           | 5.3      | 2.3                         | 0.2   | 0.2              | 1.0      | 0.8    | 0.5            | 0.3            | 0.1 |
| 2nd year                | 1.5                           | 2.9      | 2.9                         | 0.5   | 1.0              | 1.0      | 0.3    | 0.6            | 0.8            | 0.5 |
| 3rd year                | 2.3                           | 5.1      | 3.9                         | 0.3   | 2.1              | 1.5      | 0.5    | 0.5            | 0.4            | 0.0 |

## 5. Management Structure

### 5-1 Implementing Institutions

#### 1) Implementation Structure

The representative institution for this project is Nagoya University and the joint implementing institution is Gifu University, with no changes in FY2023.

#### 2) Management Personnel

In FY2023, there were 16 changes in management personnel, including one Working Committee member.

### 5-2 Partner Organizations

#### 1) Cooperative Structure

There were no changes in partner academic institutions and partner companies during FY2023.

#### 2) Project Promotion Committee

In FY2023, there was a change of two Project Promotion Committee members in partner academic institutions, Chubu University and Nanzan University.

### 5-3 Committees, etc.

#### 1) Consortium General Meeting

●Date and time: March 4, 2024, 16:00-18:00 (Information exchange session 18:10-19:30)

●Participants: Chief Executive, Director, Co-Director, Program Manager (PM),  
Working Committee members, Project Promotion Committee members from Partner Organizations (Academic Institutions, Companies, International Cooperation),  
External evaluation committee members (domestic), secretariat (faculty, URA, administrative staff)

●Venue: Nagoya University, Environmental Studies Hall, Lecture Hall

●Meeting style: Hybrid

After the PM gave an overall explanation of the project's performance in FY2023, three topics were reported by three task force leaders; (1) Retreat Camp: Dr. Sayuri Higashi of Gifu University, 2) Research Outcomes Exhibition: Dr. Naoto Machida of Nagoya University, 3) International Workshop: Dr. Fanny Bellegarde of Nagoya University. The PM also explained the program plan for FY2024 based on improvements from FY2023 activities and FY2024 new members of T-GEx Fellows, T-GEx Associates, and T-GEx Company Associates. Overall, there was a lively Q&A session and exchange of opinions between the presenters and participants.

## 2) Project Promotion Committee Meeting

- Date and time: November 28, 2023, 12:20-13:30

- Participants: Chief Executive, Director, Co-Director, Program Manager (PM),  
Working Committee members, Project Promotion Committee members from Partner Organizations (Academic Institutions, Companies, International Cooperation),  
External evaluation committee members (domestic), secretariat (faculty, URA, administrative staff)

- Meeting style: Face-to-face

The PM shared information on the content of the preliminary hearing on T-GEEx Associates conducted with each partner institution. In addition, there was a lively exchange of views on the environment surrounding the T-GEEx Associates, the status of their participation, and ways to participate in the consortium more proactively.

## 3) Steering Committee

- Date and time: February 21, 2024, 10:30-12:00

- Participants: Director, Co-Director, Program Manager (PM), Working Committee members, secretariat (faculty, URA, administrative staff)

- Meeting format: Online

The PM gave an explanation of the performance of FY2023 program and the T-GEEx Fellows, T-GEEx Associates, and T-GEEx Company Associates adopted for FY2024, and an exchange of opinions took place. Subsequently, the key points of the program plan for FY2024 and the program for the FY2023 Consortium General Meeting were discussed and approved.

#### 4) Working Committee

- Frequency: 15 times a year (irregular, including email deliberations)
- Participants: Program Manager (PM), Working Committee Members, secretariat (faculty, URA, administrative staff)
- Meeting format: Online

The Working Committee discussed important matters related to program operations. The Program Development and Audit Committee, established within the Working Committee, discussed the development of skill booster modules of various seminars and events aimed at improving transferable skills, as well as the effect of Academic Mentors and Corporate Advisors. In addition, the Selection and Evaluation Assessment Committee recruited, selected, and evaluated the training status of T-GEx Fellows, T-GEx Associates, and T-GEx Company Associates, and also reviewed applications for competitive Tailor-made research fund and Seed joint research fund.

#### 5) Nagoya University-Gifu University Joint Meeting

- Frequency: Once a month (regular)
- Participants: Program Manager (PM), Working Committee Members, secretariat (faculty, URA, administrative staff)
- Meeting format: Online

In order to ensure timely and smooth information sharing and exchange of opinions between Nagoya University, the representative institution, and Gifu University, the co-implementing institution, the Joint Meeting was established in FY2022. The meeting included improvements to the cooperation structure, including the expansion of partner institutions, the enhancement of various training programs, confirmation of budget usage, and sharing of various plans, and involved a frank exchange of opinions.

#### 6) Regular Meeting

- Frequency: Once a week (regular)
- Participants: Program Manager (PM), Working Committee Members and secretariat (faculty, URA, administrative staff) of Nagoya University
- Meeting format: Online

In order to quickly identify and address issues in program operations, Regular Meetings have been established at Nagoya University, the representative institution, from FY2022. From formulating training plans for early career researchers to adjusting operational schedules, various issues related to program operations were identified in a timely manner and opinions were exchanged to respond in a planned manner.



#### 5-4 External Evaluation Committee

As shown in Table 5-4, seven external evaluation committee members (five academics (two of whom are from overseas) and two from the business sector), who were appointed in FY2022, continued their positions in FY2023. We announced the "Research Results Exhibition" and the "Consortium General Meeting" to the domestic committee members, and received advice on how to improve operations from the members who attended on-site. In addition, in June 2023, we issued an "Annual Report" summarizing the program activities for FY2021 and 2022, and reported our program status.

Table 5-4 External Evaluation Committee Members

| Name             | Country        | Affiliation                                     | Official title                |
|------------------|----------------|---|-------------------------------|
| Takaho Ando      | Japan          | Chubu Univ.                                     | Visiting Professor            |
| Akira Iwabuchi   | Japan          | Iwate Univ.                                     | Emeritus Professor            |
| Shigeaki Zaima   | Japan          | Meijo Univ.                                     | Professor                     |
| Roger Goodman    | United Kingdom | Univ. of Oxford                                 | Professor                     |
| Yi-Fang Tsay     | Taiwan         | Institute of Molecular Biology, Academia Sinica | Distinguished Research Fellow |
| Mika Agatsuma    | Japan          | IBM Consulting/IBM Japan, Ltd.                  | Director                      |
| Masayoshi Murase | Japan          | NIPPON STEEL CORPORATION                        | Director                      |

## 6. Survey of advanced cases overseas

As mentioned in 3-6, an international workshop was held with the University of Freiburg, one of the overseas universities visited in FY2022. At that time, members of YAS and T-GEEx who are actually managing in the training program exchanged opinions on the theme of "Early career researchers' difficulties to tackle such challenges" and we surveyed what young researchers want for the training program.

YAS offers two types of programs: an employment program for young researchers at the Institute for Advanced Studies at the University of Freiburg, or a program that includes travel expenses and participation in three events per year. This time, YAS members who had experience in either or both were participating, and in response to the question, "What do you need?", they cited long-term employment, research funding, time, optimal mentors, a research support environment, a good network, and communication skills. Furthermore, participants shared their reasons for their requests and the obstacles they face. Some of the opinions expressed were the impact of short-term employment on personal life, the lack of research funding and journals for interdisciplinary research and low recognition of teaching activities. Regarding mentors, it was pointed out that it is difficult to find suitable candidates when working on interdisciplinary research, and that there is a gap in thinking between generations. It is interesting that the most common opinion was improvement of mentors' mentoring skills. It was also pointed out that choosing the right evaluator is also important in nurturing young researchers. In particular, in the case of interdisciplinary research, the evaluator is also required to have interdisciplinary knowledge, so it is easy to imagine how difficult it can be.

Many of the challenges faced by researchers in Japan and Germany were the same, such as balancing research, teaching, and other duties in academia, work-life balance, and exploring career paths outside of academia. However, employment in overseas fellowships tends to be short-term, and the situation in Japan seems to be relatively good. In addition, in Germany, competitive research grants are generally applied for by the PI, and there is little competitive research grant available to young researchers, as in Japan. Therefore, there was a demand for improvements to the system. Overall, it does not appear that Japan is necessarily the only country with a harsh environment for young researchers to take on new challenges.

Finally, as a side note, the expression "early career researcher" seems to be inappropriate for postdoctoral researchers in Germany, and they seem to prefer to use "post-doc." Therefore, in the future, when promoting international collaboration, we should be careful to use appropriate language taking into account the circumstances of each country.