

FY2026 F-REI Summer Internship “Soil and Plant Multi-Dynamics Research Unit” Program Overview

Objectives of the research experience	Through the practical experiment and data analysis activities offered in this program, students will: <ol style="list-style-type: none"> 1. Gain a clearer understanding of their interest in interdisciplinary research 2. Build a well-defined vision for their future research career
Eligibility	Undergraduate and graduate students, up to 6 maximum
Desired qualifications and attributes	Field of specialization (required): Agricultural chemistry, biology, or related fields.
Research location	<ul style="list-style-type: none"> - Soil and Plant Multi-dynamics Research Unit Laboratory, Fukushima University, Fukushima City - F-REI Headquarters, Namie Town (+ study tour to reflect on recovery from the Great East Japan Earthquake and nuclear disaster)
Research activity	Fabrication and application of microdevices for analyzing complex interactions between plants, soil, and microorganisms
Schedule	<p>Aug 17 (Mon) 15:00: Pre-program orientation session (online)</p> <p>Aug 18 (Tue): Travel and arrival to Fukushima City (for participants coming from outside Fukushima City area)</p> <p>Aug 19 (Wed) – Day 1: Safety training; microdevice design (Fukushima University lab)</p> <p>Aug 20 (Thu) – Day 2: Microdevice mold fabrication using a 3D printer (Fukushima University lab)</p> <p>Aug 21 (Fri) – Day 3: Microdevice fabrication (PDMS molding, glass bonding) (Fukushima University lab)</p> <p>Aug 22 (Sat) – Day 4: Self-study and mid-program reflection (day off)</p> <p>Aug 23 (Sun) – Day 5: Self-study and mid-program reflection (day off)</p> <p>Aug 24 (Mon) – Day 6: Plant cultupcedures (seeding, transfer) (Fukushima University lab)</p> <p>Aug 25 (Tue) – Day 7: Microscopy (CLSM, digital microscope) (Fukushima University lab)</p> <p>Aug 26 (Wed) – Day 8: Study tour (Namie Town → Ukedo Elementary School → Fukushima Memorial Park → Great East Japan Earthquake and Nuclear Disaster Memorial Museum)</p> <p>Aug 27 (Thu) – Day 9: Final presentations and feedback (F-REI HQ) → Visit to construction site of F-REI facility → Dismissal</p>
Supervising researchers	Dr. Marcel Pascal Beier, Dr. Nobchulee Nuanaon, Dr. Naoto NIHEI (Unit Leader)
Recruitment	Open call and selection Application period: April 20 (Mon) to June 5 (Fri), 2026

F-REI Summer school internship Application Guidelines

【Soil and Plant Multi-Dynamics Research Unit】

1. Program Name

Fukushima Institute for Research, Education and Innovation (F-REI)

Summer Internship 2026 at the Soil and Plant Multi-Dynamics Research Unit (Short-Term Research Experience)

Note: This program will be conducted in accordance with the “Fukushima Institute for Research, Education and Innovation Internship Trainee Acceptance Bylaws (Bylaws No. 8 of 2024).”

2. Purpose

This program aims to provide undergraduate and graduate students with hands-on, short-term research experience at the Fukushima Institute for Research, Education and Innovation (F-REI). This program is an annual initiative organized by F-REI's Soil and Plant Multi-Dynamics Research Unit. By experiencing practical experiments and data analysis offered in this program, students can assess their interest in multidisciplinary research. This program may also help students form a more concrete vision of a future career in scientific research. For your reference, please visit the links below:

*F-REI Researcher Brochure

[F-REI Research File](#)

*F-REI Soil and Plant Multi-dynamics Research Unit Website

<https://nihei-lab.net/>

3. Internship Period

Morning of Wednesday, August 19, 2026 – Late afternoon of Thursday, August 27, 2026

Note: In addition to the above implementation dates, a pre-program online training will be held on Monday, August 17, at 3 p.m. Moreover, Saturday, August 22 and Sunday, August 23 are holidays designated for mid-point self-reflection. August 26 will be designated as a study tour day to reflect on the recovery from the Great East Japan Earthquake and the Fukushima Daiichi nuclear disaster.

4. Venues

1. F-REI Soil and Plant Multi-Dynamics Research Unit Laboratory within Fukushima University (Days 1–7)

(Address: Fukushima University Environmental Radioactivity Research Institute Analysis Building 2nd floor, 1 Kanayagawa, Fukushima City, Fukushima Prefecture, Japan 960-1296)

2. F-REI Headquarters (Day 9 only) (Address: 6-1 Yazawa-machi, Gongendo, Namie Town, Futaba County, Fukushima Prefecture, Japan 979-1521)

5. Eligible candidates

- Students currently enrolled in an undergraduate or graduate program in the Faculty of Science (or equivalent faculties) at a university inside Japan.
- Number of participants: Up to 6 (to enable intensive, small-group guidance)

6. Required Qualifications and Expertise

- **Field of Specialization (Required):** Agricultural chemistry, agricultural science, plant science, soil science, biochemistry, biology, or other related fields
- **Basic Skills (Desirable):** None in particular.
- **Motivation:** Interest in plant and soil analyses.

7. Program Details

F-REI's "Soil and Plant Multi-Dynamics Research Unit" aims to improve agricultural soil conditions through the application of organic fertilizer. For this purpose, this research unit is conducting integrated analysis of soils, plants, and bacteria through bioinformatics and metabolomics. For the F-REI Summer Internship 2026, this research unit has designed a program focused on the fabrication of microdevices for the analysis of complex interactions between plants, soil, and microbes. In this program, participants will (1) design and make microdevice outlines and molds by using 3D printing technology; (2) prepare and assemble polydimethylsiloxane (PDMS)-based microdevices, which will be used for growing plants; and finally, (3) observe the plants grown inside the microdevices through confocal laser scanning microscopy (CLSM).

Note: Instructions will be provided in Japanese and English, as needed.

8. Schedule

- **17. Aug 15:00 p.m.: Pre-program (Online Training):** Orientation (lab introduction, staff introduction, theme explanation, important notes, participant self-introductions, etc.)
- **19. Aug Day 1 (Laboratory at Fukushima University):** Safety training, microdevice design (TinkerCAD or Fusion360)
- **20. Aug Day 2 (Laboratory at Fukushima University):** Microdevice mold fabrication (3D printing)
- **21. Aug Day 3 (Laboratory at Fukushima University):** Microdevice production (PDMS casting, glass bonding)
- **22. Aug Day 4 (Home or Hotel):** Mid-point self-reflection and holiday
- **23. Aug Day 5 (Home or Hotel):** Mid-point self-reflection and holiday
- **24. Aug Day 6 (Laboratory at Fukushima University):** Plant cultivation (planting, transfer)
- **25. Aug Day 7 (Laboratory at Fukushima University):** Microscopical observation (CLSM, digital microscope)
- **26. Aug Day 8:** Tour to Reflect on Recovery from the Great East Japan Earthquake and Nuclear Disaster [the itinerary includes stops at The Great East Japan Earthquake and Nuclear Disaster Memorial Museum (Futaba Town), The Fukushima March 11 Memorial Park (Futaba Town), and the Remains of the Earthquake Namie Town Ukedo Elementary School (Namie Town)]

Note: A detailed itinerary will be provided to the selected participants at a later date.

- **27. Aug Day 9 (F-REI Headquarters):** Results presentation session with feedback

9. Fees and Expenses

- **Registration fee:** None
- **Salary and food expenses support:** None
- **Accommodation:** Accommodation during the program will be arranged and covered by F-REI for participants who are unable to commute daily to Fukushima University, in accordance with its regulations. Participants who can commute from their homes are not eligible for accommodation support.
- **Transportation expenses:** Domestic airfare and ground transportation expenses will be reimbursed separately in accordance with F-REI's guidelines.

F-REI Summer school internship Application Guidelines

【Soil and Plant Multi-Dynamics Research Unit】

- **Others:** F-REI will arrange and cover the costs for transportation, facility tours, and hotel accommodation on Day 8 (August 26), as well as transportation from the hotel to the F-REI Headquarters in the morning and JR Namie Station (or JR Fukushima station) after final presentation session on Day 9 (August 27).

10. Application Deadline

June 5th, 2026

Note: Participation in all sessions, including the pre-program online training, is mandatory.

11. Required Documents

- Application Form (MS Forms format)

Please refer to item 12 below.

12. Submission of Application Materials (MS Forms)

- Submission of Application Materials: Please complete the Microsoft Forms via the link below.

[Apply Here - F-REI Summer Internship](#)

- **Email for Inquiries:** F-REI_jiniku@f-rei.go.jp

Contact person: Education Administrator (EA) Suzuki and EA Arime

Human Capital Development Division

Department of Research and Development Promotion

13. Selection Results

Successful applicants will receive notification by email around mid-June (around 12th June)

14. Selection Criteria

Applicants will be selected for participation based on the following criteria:

- Enthusiasm for research and interest in a research career
- Alignment with the field of study

15. Supervision

- **Primary Research Supervisors:**
Dr. Marcel Pascal Beier and Dr. Nobchulee Nuanaon
- **Overall Research Supervisor:**
Dr. Naoto NIHEI (Unit Leader)
- **Consultations:** Available throughout the program period

16. Evaluation

Based on a comprehensive assessment of research attitude and skills acquired during participation, a certificate of completion will be issued to participants who meet the standards set by the research supervisors.

17. Ethics

Selected participants will be required to submit the following document:

- Consent Form (confirmation of agreement to research ethics regulations, deliverables regulations, photo usage, etc.)

18. Insurance

Selected participants will be required to submit one of the following documents.

- Certificate of enrollment in Student Education and Research Accident Insurance and Gakken-sai Liability Insurance OR proof of enrollment in insurance with equivalent coverage
- proof of enrollment in insurance with equivalent coverage

19. Others

- Applicants' personal information will be used only for selection and communication purposes.
- In accordance with the consent form, photographs taken during this summer school may be published on our organization's website, reports, etc.