2026 Academic Year

TOHOKU UNIVERSITY
GRADUATE SCHOOL OF LIFE SCIENCES

Master's Degree Program (2-year course)
First, Second Term Entrance Examination
Student Application Guidelines

GENERAL SELECTION
SPECIAL SELECTION FOR WORKING STUDENTS
SPECIAL SELECTION FOR RETURNEE STUDENTS
SPECIAL SELECTION FOR INTERNATIONAL STUDENTS

	First Term	Second Term
Application Period	Monday, June 23, 2025 – Thursday, July 3, 2025, until 17:00	Monday, October 6, 2025 –Thursday, October 16, 2025, until 17:00.
Connection Test	Saturday, July 19, 2025	Saturday, October 25, 2025
Entrance Examination	Monday, July 28, 2025 – Wednesday, July 30, 2025	Monday (National Holiday), November 3, 2025 – Tuesday, November 4, 2025
Result Announcement	Thursday, August 7, 2025, around 10:00	Thursday, November 13, 2025, around 10:00
Enrollment Date	April 1, 2026	

Tohoku University Graduate School of Life Sciences
1-1-2 Katahira, Aoba-ku, Sendai 980-8577 JAPAN
TEL +81-22-217-5706
FAX +81-22-217-5704
https://www.lifesci.tohoku.ac.jp/

Information for Prospective Students

Tohoku University Graduate School Admission Policy

Philosophy & Mission

With over 100 years of history and distinguished traditions, Tohoku University has developed excellence in education and research under its principles of "Research First," "Open Doors," and "Practice-Oriented Research and Education" since its establishment in 1907. The university will maintain these traditions while looking toward even more dramatic progress in the future. As a world-leading center of education and research, it will contribute greatly to the human race by grappling with the difficult and complex issues facing the 21st century.

Tohoku University will focus its efforts of its faculties, graduate schools, and research institutes on fostering ethical international leaders who will carry humanity into the future, while expanding its globally renowned creative research for the benefit of society at large.

Characteristics

1) Three Foundational Ideals

"Research First," "Open Doors," and "Practice-Oriented Research and Education" — soon after its founding, Tohoku University established this set of unique ideals, the substance of which it is continually developing in response to our changing times.

2) Rich Educational Environment

Tohoku University has numerous research organizations and facilities, primarily comprising 10 undergraduate schools, 15 graduate schools, 3 professional graduate schools, and 6 research institutes. Research institute staff also participate in educational activities (there are approx. 3,000 instructors; enrollment limits are approx. 2,400 for undergraduates, 2,700 for graduate students).

3) Research University

Tohoku University is a school that continuously produces numerous internationally recognized research results and concertedly pushes forward with leading-edge research and education.

4) Active Regional/Industrial-Academic Ties

The university is actively working to expand its diverse regional and industrial ties.

5) Globalizing Education and Research

Among Japan's national universities, Tohoku University is one of the top schools in terms of agreements with overseas universities. It is actively expanding exchange in education and research. The university strives to foster globally active individuals through strong support for studying abroad by Japanese students, as well as recruitment of numerous international students.

Ideal Tohoku University Applicants

Tohoku University seeks students who sympathize with the university's principles and who are motivated by:

1) the desire to make outstanding contributions as world-class researchers by addressing the issues facing humanity in the 21st century, and
2) the desire to make outstanding contributions to the development of society as highly specialized professionals who possess abundant knowledge and leadership.

To realize these ambitions, students should also have strength of will, academic curiosity, a broad perspective, and an excellent foundation of specialized knowledge and abilities.

Tohoku University Admissions Process (Graduate School)

Depending on the number and type of candidates sought, Tohoku University graduate schools provide multiple categories of, and opportunities for undergoing, entrance exams to meet the needs of candidates from diverse backgrounds. Schools may evaluate the candidate's qualifications, abilities, and specialization using interviews, application documents such as research plans, proficiency exams, and external tests.

Graduate School of Life Sciences Admission Policy

The Tohoku University Graduate School of Life Sciences aims to foster leading researchers and engineers who can explore new areas of the life sciences using advanced knowledge and technologies. At the same time, we also focus on educating people who can leverage knowledge and technology based on the foundations of the life sciences and have a strong background in bioethics and environmental ethics. Therefore, we are looking for students who have a strong motivation to study the life sciences and the necessary academic background to complete the program.

In addition to the general selection examinations, we provide special selection examinations for working students, Japanese citizens returning from overseas (those who have lived in another country for a long time and received their education outside of Japan), and international students. Applicants are selected based on their motivation to carry out research according to our educational goals and their specialized knowledge and qualifications.

Master's Degree Program (2-year course)

In the general selection entrance examinations for the first term, specialized knowledge and the sufficiency of basic academic skills in each field of the life sciences are evaluated by interview.

In the self-recommendation and second-term general selection examination, professional knowledge and qualifications are evaluated by interview. In particular, individuals who have studied fields other than the life sciences will also be assessed based on their willingness to apply their knowledge to life sciences research.

For the special selection examinations for working students, Japanese citizens returning from overseas, and international students, an interview is conducted according to the characteristics of each type of applicant to evaluate professional knowledge and qualifications.

Regardless of which examinations are taken, proficiency in English, the common language of the academic world, is evaluated based on scores that have been attained on external certification tests.

Applicants are expected to learn more about the specialized knowledge and research methods of the field they intend to pursue before enrolling.

Doctoral Degree Program (3-year course)

The general selection entrance examinations, special selection examinations for working students, and special selection examinations for international students take the form of an interview. In this interview, all applicants are required to present their past research and plans for their research after admission. Applicants are evaluated as to whether they have the specialized knowledge and qualifications necessary to carry out their research.

In addition, proficiency in English, the common language of the academic world, is evaluated based on scores that have been attained on external certification tests.

Before enrolling, applicants are expected to thoroughly investigate the research trends in the field they intend to pursue.

Contents

1. Departments and the Number of Students to be Accepted

Department	Course	Field of Study (Laboratory Name)	Number of Students	
			I term	II term
Department of Integrative Life Sciences	Brain and Nervous System	Neuroethology, Molecular Ethology, Brain Development, Systems Neuroscience	About 100 students	Few students for each field
	Cellular Network	Membrane Trafficking Mechanisms, Developmental Dynamics, Organelle Pathophysiology, Super-Network Brain Physiology		
	Developmental Regulation Network	Cancer Biology		
	(Cooperative faculties)	Developmental Neuroscience (*), Molecular Oncology, Immunobiology, Neuronal Cell Biology		
Department of Ecological Developmental Adaptability Life Sciences	Biological Dynamics	Organ Morphogenesis, Plant Cell Dynamics, Plant Sensory and Developmental Biology		
	Ecological Dynamics	Functional Ecology, Ecological Integration, Symbiosis Genomics, Macroecology, Watershed Ecology, Plant Reproductive Strategy (*)		
	Biodiversity Dynamics	Plant Diversity and Evolution, Conservation Biology (*), Marine Biodiversity		
	Eco-Socio Dynamics	Ecosystem Functions		
	(Cooperative faculties)	Systems Bioinformatics, Human Evolution		
Department of Molecular and Chemical Life Sciences	Chemical Biology	Analytical Bioorganic Chemistry, Biostructural Chemistry (*), Bioactive Molecules, Molecular and Cellular Biology, Applied Biological Molecular Science		
	Molecular and Network Genomics	Microbial Genetics and Evolution, Plant Reproductive System, Molecular Genetics and Physiology, Evolutionary Genomics, Plant Molecular and Physiological Adaptation (*)		
	Multilevel Biomolecular Structure and Dynamics	Molecular Analysis of Biological Functions, Biofunctional Chemistry and Nanobiotechnology, Structural Mechanism Research and Development, Dynamic structural biology		
	Genome Informatics	Omics and Informatics		
	(Cooperative faculties)	Chemical biology of Natural Product, Redox Biology, Bioorganic Medicinal Chemistry, RNA Physiology		
		Total	106 students	

Notes: Underlined fields indicate fields of study for which collaborating faculty members are responsible.

(*)Developmental Neuroscience field from the Department of Integrative Life Sciences; Plant Reproductive Strategy and Conservation Biology fields from the Department of Ecological Developmental Adaptability Life Sciences as well as Biostructural Chemistry and Plant Molecular and Physiological Adaptation fields from the Department of Molecular and Chemical Life Sciences, are not accepting applications.

* The number of applicants includes applicants for the self-recommendation entrance examination.

* Regarding the number of applicants for the second term: some fields may not accept applications depending on the results of the first term examination. Details will be announced on the Graduate School website by the end of September.

* The Graduate School encourages prospective students to apply to their second and third choice laboratories. When choosing a field of study, please consider not only your first choice, but also your second and third choices to broaden your perspective. Also, since the number of students accepted may be limited due to the number of positions available, please be sure to contact (e.g., set up a meeting with) faculty members in the laboratories of your choice, including those in your second and third choices, and have them explain the nature of their research to you before you apply.

2. Eligibility and Application Requirements

Applicants for the 2-year master's degree program must fall into one of the following (1) to (11) categories. Those who fall into the categories below are eligible to apply for the Special Selection Examination.

- For the Special Selection for Working Students, applicants must be working as engineers, teachers, researchers, etc. (at government offices, schools, companies, etc.) at the time of application, and keep their status after admission; also, applicants must fall into one of the following (1) to (11) categories.
- For Special Selection for Returnee Students, those who have graduated from a foreign university (including those who are expected to graduate by March 2026) and have returned to Japan within two years (including those who are expected to return to Japan by March 2026) are eligible. The applicant must have Japanese nationality and fall into one of the following (1) to (11) categories.
- For the Special Selection for International Students, applicants must be non-Japanese nationals and fall into one of the following (1) to (11) categories.
  * Only international students with a "Student" visa are eligible to apply through this selection. Applicants with other types of visas (permanent resident, spouse or child of a Japanese national, spouse or child of a permanent resident, long-term resident, etc.) should apply through the general selection examination.

(1) Those who have graduated or are expected to graduate from a university in Japan by March 2026.

(2) Those who have been awarded or are expected to be awarded a bachelor's degree by the National Institution for Academic Degrees and Quality Enhancement of Higher Education by March 2026.

(3) Those who have completed or are expected to complete 16 years of school education in a foreign country by March 2026.

(4) Those who have completed or are expected to complete 16 years of school education in a foreign country by taking distance learning courses offered by a foreign school in Japan by March 2026.

(5) Those who have completed or are expected to complete a curriculum of a foreign university in Japan (those who have already completed a 16-year program of school education in the relevant country) at an educational facility that is ranked within the relevant country's educational system and has been designated separately by the Minister of Education, Culture, Sports, Science and Technology (hereafter, "Minister of Education") by March 2026.

(6) Those who have been awarded or are expected to be awarded a degree equivalent to a bachelor's degree by completion of a three-year or longer course at a foreign university or another foreign school(limited to institutions that are evaluated by an organization certified by the relevant foreign government or related organization for the overall status of its education and research activities, etc., or that are separately designated by the Minister of Education as equivalent to this) by March 2026. This includes completion of a course in Japan by taking distance learning courses offered by a school in a foreign country and completion of a course at an educational facility designated in the school education system of the foreign country as specified in the previous category.

(7) Those who have completed a professional training college course (limited to at least 4-year courses that meet other criteria specified by the Minister of Education) separately designated by the Minister of Education on or after the date specified by the Minister of Education, or those who are expected to complete the course by March 2026.

(8) Those who have been certified by the Minister of Education.

(9) Those who have been enrolled in a university for 3 years or more by the end of March 2026; those who have completed 15 years of school education in a foreign country; those who have completed 15 years of school education in a foreign country by taking distance learning courses offered by a foreign school in Japan; or those who have completed a foreign university course in Japan and have been recognized by the Graduate School as a person who has acquired the required credits with excellent grades. Limited to the educational institutions recognized in the school education system of the relevant foreign country, which is separately designated by the Minister of Education and whose graduates are considered to have completed 15 years of school education in the relevant foreign country.

(10) Those who have been enrolled in the graduate school of another university through the early university entrance in accordance with the School Education Act, Article 102, Item 2, and have been recognized by the Graduate School as having the academic ability sufficient to pursue education at the Graduate School.

(11) Those who have been individually screened for admission by the Graduate School and have been recognized as having the equivalent or higher academic ability than a university graduate, and who will reach the age of 22 by the end of March 2026.

Notes:

1. **Applicants should contact the faculty member from whom they intend to receive academic advising in advance to obtain their approval of the application.**
2. Applicants who fall under (6) of the application requirements are required to contact the Academic Affairs Section by May 30, 2025 (Fri) for the first term and September 12, 2025 (Fri) for the second term entrance examination.
3. Applicants who fall under (9), (10), or (11) of the application requirements are required to undergo the preliminary screening described below and apply according to the results.
4. Applicants who “have been enrolled in a university for 3 years or more" in (9) of the application requirements do not include prospective university graduates or former graduates.

Notes on the application requirements (9) regarding those, who have been enrolled in a university for three years or more.

(1) To be eligible to apply under this category, the applicants must be within the top 5% of their academic performance in their home department or faculty, have completed all specialized courses or equivalent required for graduate study, and have passed the following pre-application screening to be held by the Graduate School.

Submit the following documents to the Academic Affairs Section of the Graduate School of Life Sciences by registered mail or in-person.

a. Application form for pre-application screening (Please request an application form from the Academic Affairs Section of the Graduate School of Life Sciences.)

b. Official academic transcript up to the third year and certificate of enrollment or certificate of completion from the current university or foreign educational institution of higher education

c. Courses taken in the third year of university or courses taken at a higher education institution in a foreign country (e.g., a copy of the course list, free format)

d. Envelope for notification of screening results (standard size, with applicant's name and address written on it, and a stamp of 460 yen)

(2) Those who successfully pass the screening and wish to enroll in the Graduate School must promptly notify their home university of their intention to withdraw from the university at the end of March 2026 and submit a certificate of withdrawal, issued by their home university, at the time of enrollment procedures.

Notes on the application requirements (10) regarding those who have been enrolled in the graduate school of another university in accordance with the School Education Act, Article 102, Item 2.

(1) To be eligible to apply under this category, the applicants must have been admitted to the graduate school of another university through the early university entrance and have passed the following pre-application screening to be held by the Graduate School.

Submit the following documents to the Academic Affairs Section of the Graduate School of Life Sciences by registered mail or in-person.

a. Application form for pre-application screening (Please request an application form from the Academic Affairs Section of the Graduate School of Life Sciences.)

b. Official academic transcript from the university (undergraduate course)

c. Courses taken at the graduate school (e.g., a copy of the course list, free format) and certificate of enrollment

d. Envelope for notification of screening results (standard size, with applicant's name and address written on it, and a stamp of 460 yen)

(2) Those who successfully pass the screening and wish to enroll in the Graduate School must promptly notify their home university of their intention to withdraw from the university at the end of March 2026 and submit a certificate of withdrawal, issued by their home university, at the time of enrollment procedures.

Notes on the application requirements (11) regarding those who have not graduated from a university.

To be eligible to apply under this category, the applicants must be graduates of junior colleges, colleges of technology, special training colleges, or other educational institutions without a bachelor's degree, and have passed the following pre-application screening to be held by the Graduate School.

Submit the following documents to the Academic Affairs Section of the Graduate School of Life Sciences by registered mail or in-person.

a. Application form for pre-application screening (Please request an application form from the Academic Affairs Section of the Graduate School of Life Sciences.)

b. Official academic transcript (from the head of the institution applicant graduated from)

c. Other materials that may be used as a reference for the review (e.g., academic thesis or other equivalent materials)

d. Envelope for notification of screening results (standard size, with applicant's name and address written on it, and a stamp of 460 yen)

- The deadline for submission of the above-mentioned documents is May 30, 2025 (Fri) for the first term and September 12, 2025 (Fri) for the second term entrance examination. * Must be received by the Academic Affairs Section of the Graduate School by the deadline.
- The screening results will be sent by registered mail by June 13, 2025 (Fri) for the first term and September 26, 2025 (Fri) for the second term entrance examination. Please note that the delivery date may be changed due to postal conditions.

3. Application Period

(1) Applicants are required to carefully read this application guide and upload the application documents to the TAO application registration website (hereinafter referred to as "TAO").

Upload period to TAO
First Term: From Monday, June 23 2025 to Thursday, July 3 2025 at 17:00 (JST)
Second Term: From Monday, October 6 2025 to Thursday, October 16 2025 at 17:00 (JST)

(2) For documents that must be submitted in paper form such as the official TOEFL score, please ensure they are submitted by the following deadline

First Term: Friday, Thursday, July 3 (Must Arrive by This Date).

Second Term: Thursday, October 16, 2025 (Must Arrive by This Date).

(*) In case of submission directly at the office of the Academic Affairs Section, documents can be accepted from 9:00 to 11:50 and from 13:00 to 17:00 on weekdays.

1-1-2 Katahira, Aoba-ku, Sendai 980-8577
Academic Affairs Section, Graduate School of Life Sciences, Tohoku University
TEL: 022-217-5706 Email: lif-kyom@grp.tohoku.ac.jp

4. Application Documents and Procedures

(1) Application Procedure

Please follow the steps below to submit your application via the TAO. Please note that some documents, such as the official TOEFL scores, require specific submission procedures.

1) Confirmation of Application Procedures and Advance Preparation (Preparing Application Materials, Obtaining Application Approval from Prospective Academic Advisor)

First, please read this application guide carefully, confirm that you are eligible to apply, and prepare the necessary application materials.

- Please note that some application materials, such as official TOEFL scores, may take around two months to be delivered, so be sure to prepare them well in advance
- Please obtain approval for your application from your academic advisor in the field you wish to study. (For details, please refer to "(2) Application Documents" Notes 1 and 2, as well as No. 6.)

2) Examination Fee Transfer (to be made within the application period)

Transfer the examination fee of 30,000 yen and obtain documents (such as bank statements) to verify the transfer. (For payment details, see (2) Application Documents No. 7).

If you are applying from overseas, we will provide information on how to pay the entrance examination fee from abroad. Please contact the Academic Affairs Office of the Graduate School of Life Sciences via email.

3) Application registration through TAO

a) To use TAO, please create an applicant account on the TAO website below.
TAO website: https://admissions-office.net/en/portal

b) Next, please proceed with the application for the entrance examination on the "Graduate School of Life Sciences Entrance Examination Information website," and complete your registration by entering the required information and uploading the designated documents through the **"TAO Application URL"**.
Graduate School of Life Sciences Entrance Examination Information Website:
https://www.lifesci.tohoku.ac.jp/admission/schedule

・The "TAO Application URL" on the Admission Information website is different for each type of entrance examination. Please make sure that it is the entrance examination you are applying for before registering your application.

・Please be careful not to make any mistakes in selecting the university, graduate school, or entrance exam you are applying for.

・Please convert certificates and other documents to PDF or another designated format and upload them.

・A temporary save option is available, so please use this function, for example, to make a final confirmation before submitting your application.

・After completing your application registration, please confirm that the status on TAO is marked as "Submitted".

4) Submission of original English test scores

For English scores, in addition to uploading them to TAO, some scores require the submission of original documents. Please make arrangements in advance to ensure that the relevant English scores can be submitted within the application period.

For details on the required scores and how to submit them, please refer to No. 11 of "(2) Application Documents. "

5) Complete the Graduate School of Life Sciences Application Confirmation Form.

The form will be available on the Graduate School of Life Sciences website on the Admissions Information page (see below) depending on the application period. Please fill in the required information regarding your web environment during the examination and submit your responses. Please note that some of the questions on the form overlap with those on the TAO form.

Graduate School of Life Sciences Entrance Examination Information Page:
https://www.lifesci.tohoku.ac.jp/admission/schedule

(2) Application Documents

Notes:

1) Please contact your prospective supervisor in your field of interest in advance to inform them of your intention to apply by self-recommendation. Make sure to have a thorough discussion with the professor to fully confirm and mutually understand the research activities and topics that can be conducted in their laboratory. Obtain their approval before applying (Refer to No. 6).

2) There is a deadline for application, so please contact your academic advisor well in advance.

No.	Documents	Notes
1	Application form	Please fill in the information in each section of the "Application for Admission" on the TAO.
2	Photo data	Upload the applicant's own photo at TAO. - The photo must be taken within 3 months before the application. - The data format must be PNG, JPEG, or JPG.
3	Statement of reasons for your application	Please prepare a personal statement with your reasons for applying, future goals, and self-promotion, and upload it in pdf format to the TAO. Precautions for Preparation - Please write horizontally on a one-page, A4-size document. - Please write the applicant's name and field of interest on the first line. - The standard font size is 11-12 pt. and the standard number of words in the main text is 1,000 (500 words in English). Example Name: John Smith Desired Field of Study: XXX I am XXXX (write about a reason for applying, etc.) XXXX (Font size should be 11-12 pt, approximately 1,000 Japanese characters (or 500 words in English))

<table>
<tr><td>4</td><td>Transcript of academic records</td><td>Upload the academic transcripts in PDF format prepared by the head of your current university (department) to the TAO application registration site. (For non-university transcripts, please upload the transcripts prepared by the head of your institution.)
The original hard copy of the latest version of this certificate (in paper form) must be submitted during the enrollment process (in March 2026).</td></tr>
<tr><td>5</td><td>Certificate of (expected) graduation
(From the most recent educational institution)</td><td>Upload the appropriate certificate in PDF format from the TAO application registration site.
(1) Certificate of expected graduation for applicants who are expected to graduate from a university undergraduate program.
(2) Certificate of Degree Award (Application Acceptance)" or "Certificate of Planned Degree Application" from the principal of a college of technology is required for applicants expected to receive a bachelor's degree from the National Institution for Academic Degrees and Quality Enhancement of Higher Education.
The original hard copy of the latest version of this certificate (in paper form) must be submitted during the enrollment process (in March 2026).</td></tr>
<tr><td>6</td><td>Email confirmation of application approval from prospective supervisor (see note)</td><td>Upload <u>an email</u> in A4 PDF format to the TAO confirming that you have received approval for your application from your prospective supervisor(s).
- The email must include the following information:
Sender's email address and date of sending,
Recipient's email address and date of receipt,
Applicant's name,
Name of entrance exam (First or Second Term),
Field of study, and name of prospective supervisor

- Please refer to the example of the email below.

--Sample email sent by a candidate to a potential supervisor—
for the first term of the entrance examination

Subject: Regarding application for the first term of the entrance examinations for the Graduate School of Life Sciences at Tohoku University

Professor <professor’s name>

My name is <applicant's name> from the Faculty of ○○, ○○ University.
(Reason for application, etc.)
I would like to apply to your laboratory for the first term entrance examination as follows.

Field of study: ○○
Expected supervisor: ○○Professor (or Associate Professor)

Applicant's email signature (name, affiliation, contact information, etc.)</td></tr>
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--Sample of a reply email from a prospective supervisor to an applicant -- (Note)

Dear Mr. <applicant's name>

I, <professor’s name>, hereby give my approval to take the first term entrance examination.

Prospective Academic Advisor: ○○
Field of study: ○○

Email signature of prospective academic advisor (name, affiliation, contact information, etc.)

Note: The reply email from your prospective advisor is a response to your application and does not guarantee admission to the Graduate School of Life Sciences of Tohoku University.
Please contact the faculty members (Associate Professor or higher) you wish to be your advisor one by one, do not send emails to several faculty members at the same time.
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<td>7</td>
<td>Examination Fee and Confirmation of Examination Fee Payment</td>
<td>
(1) Transfer the application fee of 30,000 yen to the bank account below via bank counter, ATM, or Internet banking during the application period.
(Applicants are responsible for any handling charges incurred at the time of transfer.)
Please be careful not to make any mistakes in the information below.

Payment details:
<table>
<tr><td>銀行名 / Bank Name</td><td>みつびし　　ぎんこう
三菱 UFJ 銀行 / MUFG Bank, Ltd.
(金融機関/ Bank Code: 0005)</td></tr>
<tr><td>支店名 / Branch Name</td><td>わかたけ支店/Wakatake Shiten
(支店コード/ Branch Code: 809)</td></tr>
<tr><td>預金種別/ Account Type</td><td>普通 / Ordinary Savings</td></tr>
<tr><td>口座番号/ Account Number</td><td>2259411</td></tr>
<tr><td>カナ名義/ Account-holder Name in Kana</td><td>ダイ)トウホクダイガク/
DAI) TOUHOKUDAIGAKU</td></tr>
<tr><td>口座名義/ Account-holder Name</td><td>国立大学法人東北大学/ National University Corporation Tohoku University</td></tr>
</table>
Notes
- When making a bank transfer, please enter the name of the
</td>
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</table>

		person who will be taking the examination. Other information (telephone number, etc.) may be entered by the person actually making the transfer (e.g., a relative). - When transferring money from an account in the name of a person other than the applicant, be sure to change the name of the payee to the **name of the person taking the examination** before transferring the money. - If you are applying for an exemption from the application fee for disaster victims, please do not transfer the application fee. Please refer to the following website for details: https://www.tnc.tohoku.ac.jp/exempt.php - Japanese Government Scholarship (MEXT) students are not required to pay this fee. (2) After the transfer, please obtain proof of the transfer, such as a copy of your bank transfer request document, ATM statement, or a copy of your net banking transfer completion screen (please make sure that the transfer procedure has been completed) and upload it to the TAO. (The file format should be PNG, JPEG or JPG.)
8	Certificate of residence (Jūminhyō)	Only for foreigners residing in Japan (whose stay exceeds 90 days), - Upload the certificate in PDF format from the TAO. - The certificate must be issued within 3 months prior to the date of application. - Should include the status of residence and the number of the residence card, but do not need to include the personal number "My Number". *The original hard copy of the certificate (in paper form) issued in March 2026 must be submitted during the enrollment procedures (in March 2026).
9	Certificate of research period	Applicants applying for the “Special Selection for Working Students” should upload this document to TAO in PDF format. The certificate must be certified by the head of the company where the applicant is working and must indicate the period of research (the period during which the applicant was engaged in research at the research institution, etc.) as specified in the application requirements. (Free format.)
10	Permission to take an examination	Applicants who are working and wish to enroll without a leave of absence from work should submit this document in the PDF format to the TAO. (Free format)
11	TOEFL®TEST(*) TOEIC®TEST(**) IELTS or Duolingo English Test score (Note 1)	All applicants are required to submit a score from one of the following tests: TOEFL®, TOEIC®, IELTS or Duolingo English Test score. Tests taken within the two years prior to the first day of the entrance examination are considered valid. Please note that it takes time for scores from each test to be delivered. Please take the tests well in advance of your application to ensure that your scores are received in time. Multiple score submissions are allowed. (e.g. one TOEIC® L&R score, one TOEFL iBT® score)

	(Note 1) Grades for Foreign Language (English) will be based on the grades on this score sheet. *TOEFL is a registered trademark of Educational Testing Service (ETS). This material has not been reviewed or approved by ETS. ** The "TOEFL iBT® Test" is referred to as the "TOEFL iBT®" in these guidelines.	**(1) Eligible Scores** ➢ **TOEIC® L&R** Group TOEIC® IP test score will not be accepted. This applies to the "Digital Official Score Certificate". ➢ **TOEFL iBT®** (including Home Edition) Group TOEIC ITP® test score will not be accepted. Official Score Report must be submitted. The score report will automatically include two types of scores: the test result for each test date (Test Date score) and the MyBest™ score. The Graduate School will use the Test Date score. ➢ **IELTS** (Academic Module only) Test Report Form must be submitted. ➢ **Duolingo English Test Score** This applies to test results issued online. **(2) Uploading English Scores to TAO** - For TOEIC® Please upload the **PDF** of the "Digital Official Score Certificate" to TAO. - For TOEFL iBT® and Duolingo English Tests Please upload the "official score report or your personal copy of the score (or a screenshot of the Internet confirmation screen for test takers, etc.) " as a PDF or image file to TAO. **(3) Submission of Original English Scores** Please prepare and arrange for delivery of the official score by the application deadline, as follows. ➢ **TOEIC® L&R** The "Digital Official Score Certificate" will be available on the TOEIC application site in PDF format. You only need to upload this PDF to TAO; submission of the original document is not required. ➢ **TOEFL iBT®** Please complete the Official Score Report mailing procedures at ETS. The DI code for ETS is **B430** (Graduate School of Life Sciences, Tohoku University). Please note that it takes approximately two months from the time the ETS is sent to the time it is delivered, so be sure to take the necessary steps well in advance. ➢ **IETS** Please send the original Test Report Form (official transcript) by mail.

		➢ **Duolingo English Test** After taking the test, you will be asked to select the school to which you wish to apply. Please select the Graduate School of Life Sciences to complete the issuance process. Please take the test well in advance, as it may take some time for the score to be evaluated, and in some cases, the test may not be approved. **If you have difficulty submitting the designated score by the application deadline** (1) If you have difficulty submitting the official score by the application deadline, please upload the examinee's score (personal verification) or similar documents when submitting the application through TAO (2) If the original eligible official score (in paper form) is not submitted by the below deadline, the applicant will not be allowed to take the examination. The examination fee will not be refunded. First Term: Must arrive no later than at 17:00 on July 23 (Wed) Second Term: Must arrive no later than at 17:00 on October 30 (Thu) (3) The original official score (in paper form) to be submitted must be the same test score (same type of test, same test administration date, same score and rating) as the examinee's score (personal verification) uploaded to the TAO at the time of application. Submission of scores from a different test (e.g., higher test scores) will not be accepted.
12	Filling out the "Application Confirmation Form" for the Graduate School of Life Sciences	Applicants are required to complete the Application Confirmation Form. The form will be available on the Graduate School of Life Sciences Admission Information Website during the application submission period. Admissions information website https://www.lifesci.tohoku.ac.jp/admission/

(3) Notes

1) Please note that applications will not be accepted if there are any omissions or other deficiencies in the information to be entered or registered. Application documents will not be returned.

2) If false information is provided in the application documents or if the original documents cannot be verified at the time of admission, the acceptance of the application may be canceled, or the admission permit may be withdrawn even after the applicant has already been enrolled.

3) In the event of serious misbehavior prior to enrollment, the school reserves the right to cancel acceptance or revoke admission even after the student has been permitted to enter the graduate school.

4) The examination fee is non-refundable for any reason.

5) Once an application has been received, no withdrawals or changes to the information on the application form will be accepted.

5. Examination and Selection

First Term

Selection is based on a review of application materials, an online interview, and English proficiency through external test scores.

1) Date, type, and place of the examination

Date	Time	Examination type	Place	Other
July 28 (Mon) – July 30 (Wed)	From 9:00 (Applicants will be notified about the time of their exam after the application)	Online Interview (Presentation using presentation software, and Q&A session that includes evaluation of basic academic skills and academic performance)	A private room with internet access must be arranged by the applicant	Before the start of the examination, you will be asked to use a camera to show the room and your surroundings. Please be sure to have nothing (e.g., dictionaries and notes) except the designated items close to you. No one is allowed to enter your room during the exam.

Applicants are required to make a 7-minute oral presentation (in Japanese or English) about their academic (work) activities up to the time of application and about their research plans after entering the Graduate School, using a computer or other device connected to the online video conference system via a URL designated by the Graduate School of Life Sciences. The presentation will be followed by a question-and-answer session. In the question-and-answer session, in addition to several questions on basic academic skills, specialized knowledge will be evaluated through a discussion of the content of the presentation. Details will be announced separately after the application.

In order to be sure that the examination will be conducted without problems on the actual day of the examination, a preliminary connection test will be held on July 19 (Sat). Details will be provided separately after application.

2) Basic academic skills examination

In the first term entrance examination applicants are required to pass an online examination on basic academic skills. Please select one subject from the following list and enter it in the designated box on the application form with the permission of your academic advisor in the field of your first choice. Applicants will be asked several questions on fundamental knowledge at the undergraduate level from the subject they have selected.

Subject	Topics for Questions
Organic chemistry	Structures, reactions, and synthesis of organic compounds
Biochemistry (Including biophysical chemistry)	Structures and properties of biomolecules, proteins and enzymes, metabolism and bioenergy production and enzyme reaction kinetics
Molecular and cell biology	Regulation of gene replication and expression, genetic engineering, cell division, cell cycle, cell structures, membrane transport and traffic, signaling
Animal developmental biology	Germ cells and fertilization, body axis formation, developmental fate determination, morphogenesis, cell differentiation and tissue maintenance mechanisms, comparative and evolutionary developmental biology
Plant development and physiology	Development, growth and differentiation, propagation of plant, plant hormones, environmental responses
Brain and neuroscience	Neurotransmission and neurointegration, sensory acceptance and motor expression, development and plasticity of nervous system, higher brain function and cognitive science
Evolutionary biology	Genetic variation within/between population, change of gene frequency within population, natural selection and genetic drift, adaptiogenesis by natural selection, molecular phylogeny, speciation and crossbreeding
Ecology	Ecosystem, crowd, population dynamics, interaction between organisms, substance production, substance circulation, resource utilization, environmental change, material production and cycling
Microbiology	Structures, classification, inheritance, genome, metabolism, ecology, and application of microorganisms

3) Regarding Foreign Language (English) Grades

The external English test score submitted with the application will be converted to a foreign language proficiency score using the general method. If multiple scores are submitted, the highest score after conversion will be used.

Second Term

Selection is based on a review of application materials, an online interview, and English proficiency through external test scores.

1) Date, type, and place of the examination

Date	Time	Examination type	Place	Other
November 3 (Mon, national holiday) – November 4 (Tue)	From 9:00 (Applicants will be notified about the time of their exam after the application)	Online Interview (Presentation using presentation software, and Q&A session that includes evaluation of academic performance)	A private room with internet access must be arranged by the applicant	Before the start of the examination, you will be asked to use a camera to show the room and your surroundings. Please be sure to have nothing (e.g., dictionaries and notes) except the designated items close to you. No one is allowed to enter your room during the exam.

Applicants are required to give a 10-minute presentation (in Japanese or English) about their academic (work) activities up to the time of application and about their research plans after entering the Graduate School, using a computer or other device connected to the online video conference system via a URL designated by the Graduate School of Life Sciences. The presentation will be followed by a 10-minute question-and-answer session. Further details will be provided separately after the application process.

In order to be sure that the examination will be conducted without problems on the actual day of the examination, a preliminary connection test will be held on October 25 (Sat). Details will be provided separately after application.

2) Regarding Foreign Language (English) Grades

The external English test score submitted with the application will be converted to a foreign language proficiency score using the general method. If multiple scores are submitted, the highest score after conversion will be used.

6. Announcement of Results

The examination numbers of successful applicants will be announced on the Graduate School of Life Sciences website, and successful applicants will receive a "Letter of Acceptance" via TAO. The Graduate School of Life Sciences will not respond to any inquiries regarding the results.

Scheduled date of announcement

First Term: Thursday, August 7, 2025, around 10:00

Second Term: Thursday, November 13, 2025, around 10:00

Graduate School of Life Sciences website: https://www.lifesci.tohoku.ac.jp/admission/

7. Time of Enrollment

The date of enrollment for the successful applicants will be April 1, 2026.

8. Expenses Required at the Time of Enrollment

Successful applicants are required to pay the following admission fees by the specified deadline.

(1) Entrance fee: 282,000 yen (expected)

(2) Tuition for the first semester 267,900 yen (535,800 yen per year) (expected)

Note 1: The amounts shown above are estimated amounts. In the event of a revision of the entrance and tuition fees, the new amounts will be used from the time of the revision.

Note 2: The details of the payment of the entrance fee and tuition fee will be announced in the documents related to the entrance procedures to be sent in late-February 2026. The information about the application for waiver and deferment is available at the Financial Support Section, Student Support Division, Education and Student Support Department, Tohoku University.

(Kawauchi-Kita Campus, Education, and Student Support Center, 1F, Window 4, Tel: 022-795-7816, Open from 8:30 to 17:15)

For more information, please visit the Tohoku University website.

Tohoku University website (Entrance and tuition fee waivers and other information):

https://www2.he.tohoku.ac.jp/menjo/

9. Long-Term Course Program

Those who wish to obtain a master's degree in life science by systematically completing the educational program over a certain period, exceeding the standard course length of two years in the Master's Degree Program, due to special reasons ((1) full-time employees of companies or those who run their businesses, (2) those who need to take care of childbirth, childcare, or nursing care, etc., (3) other students who have been approved by the Graduate School) may be permitted to enroll as a long-term course student by submitting the required application at the time of enrollment procedures based on the notice of enrollment procedures that will be sent to successful applicants. The duration of study cannot exceed four years, but students may request to shorten the approved period of study midway through their studies.

Education and research guidance will be provided using the regular curriculum and class schedule.

The annual tuition fee for long-term course students is the amount obtained by multiplying the annual tuition fee for general students by the number of years of the standard course of study (2 years) and dividing it by the number of years of study permitted for long-term course students.

For reference, the annual tuition fee for students enrolled in the 2025 academic year is as follows. In the event of a revision of the tuition, the new tuition will be used from the time of revision.

- Annual tuition for general students with a standard term of study of 2 years: 535,800 yen
- Annual tuition fee for students with 3 years of study permitted: 357,200 yen
- Annual tuition fee for students with 4 years of study permitted: 267,900 yen

10. Handling of Personal Information

(1) Personal information collected by Tohoku University is strictly protected in accordance with the "Act on the Protection of Personal Information (Act No. 57 of 2003)" and other laws and regulations and is handled in accordance with the "Personal Information Protection Regulations of Tohoku University National University Corporation" and other related regulations of Tohoku University for the protection of personal information.

(2) Personal information such as exam results used for admission selection will be used for the following purposes: selection of applicants, admission procedures, pre-admission education, follow-up surveys, student support after admission (scholarships, tuition waiver, health care, etc.), educational purposes such as academic guidance, and tuition related matters, as well as for surveys (improvement of entrance examinations, research, analysis of application trends, etc.) and research. (For admitted students, this includes post-admission analysis of personal information.)

(3) In some cases, work related to admissions and academic affairs may be performed by companies contracted by the University (hereinafter referred to as "trustee"). In the event that all or part of personal information is provided to a trustee company for outsourcing, necessary measures will be taken to ensure that the information is handled appropriately in accordance with the "Personal Information Protection Regulations of Tohoku University National University Corporation" and other relevant regulations of Tohoku University.

(4) By applying to the Graduate School, applicants are considered to have agreed to the above statement.

11. Other

(1) Application documents and examination fee cannot be returned.

(2) Consultations are available for those who require special consideration for entrance examinations and academic study, so please contact the Academic Affairs Section of the Graduate School of Life Sciences by May 30, 2025 (Fri) for the first term, and by September 12, 2024 (Wed) for the second term of examination if needed.

(3) For inquiries regarding student applications, please contact the following

1-1-2 Katahira, Aoba-ku, Sendai 980-8577, Japan
Academic Affairs Section, Graduate School of Life Sciences, Tohoku University
TEL +81-22-217-5706 E-mail lif-kyom@grp.tohoku.ac.jp

(4) Below you will find the Graduate School of Life Sciences website regarding the admissions process. Please check this page from time to time for the latest information. (Q&A and other information is also available.)

https://www.lifesci.tohoku.ac.jp/admission/

May 2025

Graduate School of Life Sciences,

Tohoku University

12. List of Fields of Study for which Students are Accepted (including faculty members and research contents)

1) Department of Integrative Life Sciences

Course	Field of Study and Faculty Members	Research Content
Brain and Nervous System	**Neuroethology** Professor TANIMOTO Hiromu Associate Professor KOGANEZAWA Masayuki Assistant Professor HUANG Tzu Ting	We investigate neural mechanisms underlying a wide array of behavior using genetic manipulation of targeted neurons. Our favorite model animals are fruit flies and jellyfish. Behaviors of our interest include associative learning, feeding, sexual behavior, and alcohol preference. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-18215.html
	Molecular Ethology Professor TAKEUCHI Hideaki Assistant Professor KAJIYAMA Towako	We aim to elucidate the operating principles of neural mechanisms involved in social cognition and behavioral selection in animals. We construct social behavior experimental systems mainly using medaka fish and employ next-generation sequencing, mutant creation, and genetic modification technology to identify genes and neurons involved in behavior. https://sites.google.com/view/molecular-ethology-laboratory/english
	Brain Development Professor ABE Kentaro Assistant Professor AOKI Sho	We study the mechanisms underlying plastic change of the brain according to a variety of postnatal experiences such as social interaction, lifestyles, and diseases. For our research, we apply techniques in molecular biology, behavioral analysis, *in vivo* live imaging on mice, songbirds, and cell cultures as model systems. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45397.html
	Systems Neuroscience Professor TSUTSUI Ken-Ichiro Associate Professor OHARA Shinya	We investigate sensory, reward, memory, and executive functions and their underlying neural mechanisms by combining various state-of-the-art techniques, such as electrophysiology, molecular biology, and computational analytics and modeling. As experimental subjects, we use human and non-human primates as well as rodents. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2592.html

Cellular Network	**Membrane Trafficking Mechanisms** Professor FUKUDA Mitsunori Assistant Professor KASAHARA Atsuko	Our lab mainly focuses on the Rab protein, which acts as a traffic controller, to understand the molecular mechanisms of membrane traffic that underlies various cellular events such as epithelial polarity formation, exosome secretion, neurotransmission, melanosome transport, and autophagy. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2582.html
	Developmental Dynamics Professor SUGIMOTO Asako Assistant Professor HARUTA Nami	Our goal is to elucidate the principles of regulation of cellular dynamics during development and its evolutionary processes. Using several nematode species as model systems, we take an integrated approach that combines molecular genetics, cell biology, biochemistry, and functional genomics. Current research topics include 1) tissue-specific regulation of microtubule dynamics, 2) evolution of the reproductive system, and 3) development of novel chromosome engineering technologies. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2580.html
Cellular Network	**Organelle Pathophysiology** Professor TAGUCHI Tomohiko **Assistant Professor** KUCHITSU Yoshihiko	Intracellular organelles cooperatively regulate cellular homeostasis, proliferation, and differentiation, through a continuous exchange of soluble and membrane-bound molecules via membrane trafficking and/or membrane contact transfer. A failure in organelle cooperation often results in various human diseases. Our laboratory uses methods in biochemistry, cell biology, and molecular biology to identify novel organellar proteins and lipids. With these methods, we aim to unveil novel functions of organelles and the molecular mechanisms that regulate organelle cooperation. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45407.html
	Super-Network Brain Physiology Professor MATSUI Ko Assistant Professor IKOMA Yoko	The local brain environment affects how the neuronal circuit operates. Glial cells in the brain may have a pivotal role in controlling the neuronal information properties. Using in vivo fiber photometry, optogenetics, and acute patch-clamp electrophysiological techniques, we explore the realm of mind-body interface. Interactions between neurons, glia, vascular, and other cellular network of networks constitute the function of our mind. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45398.html

Developmental Regulation Network	**Cancer Biology** Professor CHIBA Natsuko Assistant Professor YOSHINO Yuki FANG Zhenzhou	Accumulation of gene mutations in oncogenes and tumor suppressor genes causes cancer. We elucidate the regulatory mechanism of cell division and DNA damage response by cancer-related molecules. Furthermore, we are trying to develop methods to diagnose and treat cancer by elucidating the carcinogenic mechanism caused by the functional failure of cancer-related molecules. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2586.html
Cooperative faculties	**Molecular Oncology** Professor TANAKA Kozo	Chromosomal instability, a condition in which chromosome missegregation occurs at high rates, underlies age-related diseases such as cancer and neurological disorders. Our goal is to reveal how chromosomal instability occurs and how it is related to the pathophysiology of these diseases in order to contribute to their prevention and treatment. Using culture cells and mice and various technics such as live-cell imaging, biochemical analysis, genetic and epigenetic analysis, we aim to understand these mechanisms from the molecular to the organismal level. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45400.html
	Immunobiology Professor OGASAWARA Koetsu	Many diseases, such as cancer, allergies, infectious diseases, and autoimmune diseases, are related to the immune system. We analyze immune responses using the latest instruments such as flow cytometry and next-generation sequencers, and target molecules are analyzed by creating experimental animals using reverse genetics methods to gain understanding from the molecular to the individual level. In addition, we aim to develop artificial antibodies and hybrid antibodies to uncover new therapeutic agents. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45426.html
	Neuronal Cell Biology Associate Professor NIWA Shinsuke	Neurons have a specialized morphology that enables the reception and transmission of information. Neuronal morphology is supported by microtubules and molecular motor proteins. By integrating interdisciplinary approaches, such as genetic analysis using C. elegans, cell biological studies of mammalian neurons, and biochemical and biophysical analyses of molecular motors, we aim to elucidate the mechanisms underlying neuronal morphogenesis. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory.html?id=45429

2) Ecological Developmental Adaptability Life Sciences

Faculty members marked with ** are scheduled to retire in March 2028.

Course	Field of Study and Faculty Members	Research Content
Biological Dynamics	**Organ Morphogenesis** Professor TAMURA Koji KURANAGA Erina Assistant Professor UESAKA Masahiro	We investigate the mechanisms underlying morphogenesis in vertebrate limb/fin development and regeneration as model systems. Also, we seek to elucidate the evolution of developmental programs that diversify vertebrate morphology through comparative developmental experiments, as well as genomic, transcriptomic, and epigenomic comparisons. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2589.html
	Plant Cell Dynamics Professor UEDA Minako Assistant Professor KIMATA Yusuke MATSUMOTO Hikari	We aim to understand what happens inside plant cells and how these processes lead to plant development. We focus on the cells that play a central role in plant body formation, such as the zygote, and perform high-resolution live imaging to reveal intracellular dynamics and genetic analysis to identify regulatory mechanisms. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45415.html
	Plant Sensory and Developmental Biology Associate Professor FUJII Nobuharu.	Our research is aimed at understanding the relationship between plant growth and environmental cues such as water and gravity. Important findings include that plant roots show hydrotropism in response to moisture gradients, which together with gravitropism plays an important role in regulating root growth orientation to efficiently obtain water. We use physiological and genetical analyses to understand regulatory mechanisms of these processes. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2555.html
Ecological Dynamics	**Functional Ecology** Professor HIKOSAKA Kouki Assistant Professor TOMIMATSU Hajime	We study ecology of plants mainly by analyses of plant functions such as photosynthesis, resource acquisition and use, and stress responses. Recently, our interests are (1) functional differentiations in plant traits, (2) remote sensing of plant functions, (3) adaptation to environmental conditions focusing on natural variations, (4) field ecology for forests and moorlands and (5) modeling of plant functions. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2548.html
	Ecological Integration Professor KONDOH Michio Assistant Professor OTA Hiroshi (C)	Using mathematical and statistical models, we aim to understand the complexity of ecological systems, as well as to develop a field of “practical ecology” that enables prediction, control, and design of ecosystems. (Kondo Lab.) https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2553.html

Ecological Dynamics	**Symbiosis Genomics** Professor SATO Shusei Associate Professor MITSUI Hisayuki	Our research targets are plant-microbe interactions, based on “symbiosis” in the narrow sense, and environmental interactions, based on “symbiosis” in the broad sense. We aim to explore complex interrelated networks of organisms and their surrounding environments by using genomics approaches, such as population and comparative genomics. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45414.html
	Macroecology Associate Professor KASS, Jamie M. Assistant Professor MIRANDA Everton	We conduct research using big data and large-scale analyses to answer pressing questions about biodiversity, which is declining due to human-driven global change. To do this, we employ geospatial analysis and statistical modeling to predict and map species’ ranges and biodiversity over space and time. Research applications include range movement due to climate change, alien species invasion risk, ecosystem service provisions, and conservation prioritization. We also develop programming tools to advance macroecological analyses. https://www.lifesci.tohoku.ac.jp/research/fields/laboratory.html?id=45417
	Watershed Ecology Associate Professor UNO Hiromi Assistant Professor FAULKS, Leanne Kay MAKINO Wataru	Nature consists of various landscape elements including forests, rivers, ponds, wetlands and the ocean. These elements are interconnected through movements of water, animals, and other materials. We study ecosystem processes and how animals live in watershed ecosystems through field observations, surveys, and experiments. By studying how biota live and interact with each other in natural ecosystems, we aim to better understand nature and provide essential foundational information for humans to better coexist with nature. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45420.html
Biodiversity Dynamics	**Plant Diversity and Evolution** Professor MAKI Masayuki** Assistant Professor OHYAMA Motonari ITO Takuro	We conduct analyses from the perspectives of molecular systematics, population genetics, phylogenetic taxonomy, and paleobotany, with the aim of clarifying the mechanisms that create diversity in plants. We also conduct research on the conservation of endangered wild plants using a variety of approaches. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory.html?id=2552
	Marine Biodiversity Professor KUMANO Gaku KONDO Michio (C) Associate Professor MINOKAWA Takuya Assistant Professor IWASAKI Aiko MORITA Shumpei	Focusing on various kinds of marine animal inhabitants around Asamushi, we research animal development such as germline development, tissue/organ morphogenesis and cell differentiation in relation to animal diversity and evolution, as well as morphologies of rarely studied animals at their critical developmental stages. We also research the distributions, community structures and diversities of marine organisms, such as benthos, to determine their biological interactions and relationships with abiotic factors. http://www.biology.tohoku.ac.jp/lab-www/asamushi/english.html

Eco-Socio Dynamics	**Ecosystem Functions** Visiting Professor TAYASU Ichiro Visiting Associate Professor ISHII Reichiro	We study ecosystem functions, evaluation of ecosystem services, and response mechanisms of ecosystems to global environmental change through analysis of the structure and dynamics of biological communities using stable isotope approaches and modeling techniques. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45406.html
Cooperative faculties	**Systems Bioinformatics** Professor KINOSHITA Kengo	As is the case for next generation sequencing, experimental data are increasing year by year. These data contribute to the elucidation of life science only when they are analyzed correctly and made into information. In this laboratory, we conduct research on data-driven bioinformatics that analyzes vast amounts of life science-related data, including genomics, by making full use of data-science methods such as machine learning and statistical analysis. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45401.html
	Human Evolution Professor SANO Katsuhiro	We study human evolution based on analyses of macroscopic and microscopic traces on Paleolithic artifacts left by *Homo erectus*, Neanderthals, Denisovans, and *Homo sapiens*. Our research relies on experimental traceology and field works, including excavations and surveys. Experimental traceology allows us to reconstruct past human behaviors, such as hunting, butchering, hide-working, and processing of organic materials, which eventually will lead to a better understanding of how and when humans developed their cognition and technologies through time. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45427.html

3) Molecular and Chemical Life Science

Faculty members marked with *** are scheduled to retire in September 2026.
Faculty members marked with ** are scheduled to retire in March 2028.
Faculty members marked with * are scheduled to retire in March 2029.

Course	Field of Study and Faculty Members	Research Content
Chemical Biology	**Analytical Bioorganic Chemistry** Professor ARIMOTO Hirokazu Assistant Professor TAKAHASHI Daiki	The Arimoto Group studies small molecules that contribute to human healthcare. We have developed AUTAC degraders that selectively degrade cytoplasmic materials via autophagy, the removal of "dysfunctional mitochondria, protein aggregates, and pathogens" utilizing AUTAC technology may contribute to disease and aging control We are also developing antimicrobial agents targeting vancomycin-resistant strains. We utilize a variety of chemical and biological techniques, including eukaryotic and bacterial cell culture, biochemistry, molecular biology, and organic synthesis. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-7811.html
	Bioactive Molecules Professor ISHIKAWA Minoru Associate Professor SATO Shinichi (C) Assistant Professor TOMOSHIGE Shusuke	We study novel strategies that employ methods of organic chemistry, molecular biology and cellular biology to regulate disease-related proteins. One example is PROTAC (proteolysis-targeting chimera) which induces the degradation of a target proteins by hijacking the ubiquitin-proteasome system. Our research focuses on developing PROTACs for the treatment of neurodegenerative diseases. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45409.html
	Molecular and Cellular Biology Professor OHASHI Kazumasa Associate Professor YASUMOTO Ken-ichi Assistant Professor CHIBA Shuhei	Our research focuses on how cells sense and respond to the external environment. We aim to elucidate the molecular mechanisms that regulate cell morphology, motility, growth, differentiation, and the organization of cell populations in mammalian cells by sensing mechanical stresses such as stiffness and force, exerted by the external environment. We also seek to elucidate the molecular mechanisms of the cellular stress response. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2520.html
	Applied Biological Molecular Science Professor TANAKA Yoshikazu Assistant Professor YOKOYAMA Takeshi	Laboratories in Graduate School of Life Sciences website https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2518.html
Molecular and Network Genomics	**Microbial Genetics and Evolution** Professor NAGATA Yuji Associate Professor OTSUBO Yoshiyuki*** Assistant Professor KISHIDA Kouhei	Some bacteria can degrade anthropogenic pollutants. We aim to comprehensively understand how such bacteria rapidly adapt and/or evolve in response to environmental changes by using microbiological, molecular genetics, molecular biological, protein engineering, cell biological, genomic, and ecological approaches. Additionally, we seek to develop new technologies to effectively utilize unexplored microbial functions. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45412.html

Molecular and Network Genomics	**Plant Reproductive System** Professor WATANABE Masao Assistant Professor HAYASHI Maki	During the evolutionary process, plants have developed various reproductive systems adapted to their environment by regulating the balance between selfing and outcrossing in "hermaphrodites" In our laboratory, we focus on self-incompatibility, one of the plant reproductive systems, and aim to elucidate the molecular mechanisms controlling selfing and outcrossing in plants using genetic and physiological methods. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45421.html
	Molecular Genetics and Physiology Professor HIGASHITANI Atsushi**	We conduct molecular, genetic, and physiological research to elucidate gene functions across various biological responses, including aging, drug effects, and temperature disturbances, using model organisms such as cultured cells, the nematode *Caenorhabditis elegans*, and the plant *Oryza sativa*. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2550.html
	Evolutionary Genomics Professor MAKINO Takashi Associate Professor ICHINOSE Toshiharu(C) Lecturer YOKOYAMA Ryusuke Assistant Professor IWASAKI Watal BESSHO Kanako BESSHO Manabu(C)	Laboratories in Graduate School of Life Sciences website https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45408.html Visit the lab's website. https://www.lifesci.tohoku.ac.jp/evolgenomics/home-en/
Multilevel Biomolecular Structure and Dynamics	**Molecular Analysis of Biological Functions** Professor TAKAHASHI Satoshi Associate Professor OKUMURA Masaki(C) Assistant Professor ITOH Yuji	Proteins and RNAs perform various functions by folding into their specific structures. By using our home-built confocal microscopes, we aim to understand their dynamics, structure, and function. Recently, we are interested in the dynamics and function of proteins and RNA derived from SARS-CoV-2. (Takahashi, Itoh group) We also aim to understand the mechanisms that assist the protein folding process in cells. (Okumura group) Laboratories in Graduate School of Life Sciences website https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2519.html
	Biofunctional Chemistry and Nanobiotechnology Professor MIZUKAMI Shin Associate Professor KOWADA Toshiyuki Assistant Professor NOVIANTI, Ira	We design and synthesize hybrid chemical probes composed of organic small molecules and proteins to develop technologies for visualizing biomolecular functions and physiological activities in living organisms and live cells, as well as for controlling cellular functions using light. Based on these technologies, we aim to elucidate the mechanisms of biological phenomena and diseases and to develop novel therapeutic strategies. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2526.html

	Structural Mechanism Research and Development Professor YONEKURA Koji * Associate Professor HAMAGUCHI Tasuku*	Our laboratory aims to achieve high-resolution and high-accuracy structural analysis of complex targets, ranging from organic compounds and proteins to organelles and cells, using cryo-electron microscopy. This involves developing technologies such as AI applications and the complementary use of X-ray free-electron lasers to elucidate the mechanisms of structure formation, stabilization, and functional expression. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45416.html
	Dynamic Structural Biology Professor NANGO Eriko Assistant Professor TAGUCHI Masahiko FUJIWARA Takaaki	Targeting light-sensitive proteins and unique enzymes, we will elucidate the dynamic structures of proteins in action using the latest measurement techniques, including X-ray free-electron lasers and synchrotron radiation. Furthermore, we aim to create new protein molecule through rational design based on the obtained dynamic structural information. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45425.html Visit the lab's website. https://www2.tagen.tohoku.ac.jp/lab/nango/html/en/index.html
Genome Informatics	**Omics and Imformatics** Visiting Professor IKEDA Kazutaka Visiting Associate Professor YAMAKAWA Hisashi	To elucidate various biological phenomena in plants and animals, we are developing technologies for omics analysis from genomic information to metabolites produced through the processes of transcription and translation. Furthermore, we aim to understand complex biological phenomena at the ecosystem level by analyzing the commensal bacteria and environmental DNA. Laboratories in Graduate School of Life Sciences website https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-2549.html Visit the lab's website: https://www.kazusa.or.jp/en/
Cooperative faculties	**Chemical biology of Natural Product** Professor UEDA Minoru	We conduct research on natural products with biological activity. Our work focuses on receptors and signalling, as well as biosynthesis and metabolism of phytohormone-related compounds that exert potent effects on plants. We aim to achieve the chemical and biological control of biological systems. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45402.html
	Redox Biology Professor MOTOHASHI Hozumi	Redox reactions play central roles in energy metabolism, signal transduction, and proteostasis. Our goal is to understand the pathogenesis of age-related diseases, such as cancers and chronic inflammation, from the viewpoint of redox regulation using biochemical and molecular biological approaches. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45404.html

	Bioorganic Medicinal Chemistry Professor DOI Takayuki *	We study synthetic methods for biologically active natural products and their application to the rapid synthesis of analogues to elucidate structure-activity relationships and identify their target molecules. We aim to clarify the structural features essential for biological activity and to discover new potent compounds. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45403.html
	RNA Physiology Professor WEI Fan-Yan	Our laboratory primarily focuses on the post-transcriptional modification of RNA in mammalian cells. We aim to elucidate the biological functions of RNA modifications in regulating energy metabolism, protein translation, and cell signaling, as well as to understand their roles in physiological regulation in vivo and disease development. We hope to apply RNA modification technology to establish novel disease biomarkers and contribute to drug discovery. https://www.lifesci.tohoku.ac.jp/en/research/fields/laboratory---id-45419.html

Notes: - Information about research in each laboratory of the Graduate School of Life Sciences, Tohoku University: https://www.lifesci.tohoku.ac.jp/en/research/fields/

- The campuses of the Graduate School are in Sendai City, Aomori City (Aomori Prefecture), Kyoto City (Kyoto Prefecture), and Kisarazu City (Chiba Prefecture). The Marine Biodiversity Field is based at the Asamushi Research Center for Marine Biology, part of the Graduate School in Asamushi, Aomori City, Aomori Prefecture. The Ecosystem Functions Field is located at the Research Institute for Humanity and Nature, Kyoto, Japan. The Omics and Informatics Field is situated at the Kazusa DNA Research Institute in Kisarazu, Chiba, Japan.