

**2023/2024 Academic Years**  
**Graduate School of Integrated Sciences for Life**  
**Hiroshima University**

# **Application Guidelines**

## **General Selection**

**Master's Course**

**(October 2023/April 2024 Admissions)**

**May 2023**

**Hiroshima University**

# **Admissions Policy <Master's Course>**

The Graduate School of Integrated Sciences for Life, based on its Diploma Policy and Curriculum Policy, expects to admit master's students as described below.

Students who:

1. Have strong eagerness to learn, who wish to acquire deep expertise and understanding in a wide range of fields from the basics to applications that include medical treatment in the areas of study related to biology and life sciences, and who have basic academic knowledge for that purpose;
2. Wish to acquire interdisciplinary problem-searching and problem-solving abilities, which can integrate and link different fields, along with broad general education, without being constrained by conventional frameworks of research fields, and to create "science that can guide sustainable development"; and
3. Are aware of both academic fields and the real world, and who wish to acquire international and interdisciplinary communication skills as well as practical capabilities in society.

In order to admit such individuals, this Graduate School selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using interviews, academic tests, and external examinations.

## **1. Type of Students We Seek**

### **[Program of Biotechnology]**

Based on its Diploma Policy and Curriculum Policy, this program expects to admit students as described below.

Students who:

1. Have acquired an education at the level of completing an undergraduate of university course and basic knowledge in biological sciences and bioengineering as their special field of study;
2. Have a high level of interest in the bioengineering field, as well as the ambition and strong will to carry out research to its end;
3. Have a logical thinking ability and communication skills to verbally express their logical thinking;
4. Have acquired a command of English at the level of completing an undergraduate of university course or higher; and
5. Have acquired common sense and ethical standards as a working member of society.

In order to admit such individuals, this program selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using interviews, academic tests, and external examinations.

### **[Program of Food and AgriLife Science]**

Based on its Diploma Policy and Curriculum Policy, this program expects to admit students as described below.

Students who:

1. Have a high level of interest in theories and methods of understanding and utilizing foods and biological functions from the perspective of molecules and cells;
2. Have a high interest in finding and solving problems from a scientific perspective regarding creatures' diverse functions and the advanced use of food resources;
3. Have acquired a command of English at the level of completing an undergraduate of university course or higher;
4. Have acquired abilities at the level of completing an undergraduate of university course or higher regarding the knowledge, attitude, and skills related to their desired foods and life science fields; and
5. Have acquired common sense and ethical standards as a working member of society.

In order to admit such individuals, this program selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using interviews, academic tests, and external examinations.

## **[Program of Bioresource Science]**

Based on its Diploma Policy and Curriculum Policy, this program expects to admit students as described below.

Students who:

1. Have a high level of interest in systematically understanding life phenomena related to the production and use of biological resources based on the studies from the molecular level to ecosystems basis;
2. Have a high interest in understanding and dissolving various problems in the production of biological resources from regional to global scopes regarding roles and trends of biological resources in food production, their application to human life, and their relationships with the natural environment;
3. Have acquired a command of English at the level of completing an undergraduate of university course or higher;
4. Have acquired abilities at the level of completing an undergraduate of university course or higher regarding knowledge, attitude, and skills related to their desired biological resources and science fields; and
5. Have acquired common sense and ethical standards as a working member of society.

In order to admit such individuals, this program selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using interviews, academic tests, and external examinations.

## **[Program of Life and Environmental Sciences]**

Based on its Diploma Policy and Curriculum Policy, this program expects to admit students as described below.

Students who:

1. Have a broad interest in the life science fields from the molecular level to whole environments and ecosystems, and who wish to acquire basic research abilities for a specific field and to learn the theories and methods of understanding and utilizing these abilities from a comprehensive perspective supported by related expertise and skills;
2. Wish to understand various problems existing in life science and environmental science, and to solve them in cooperation with organizations outside the university and the international community;
3. Wish to play an active role as a generalist who covers areas outside life science and environmental science without being constrained by their own expertise;
4. Have acquired a command of English at the level of completing an undergraduate of university course or higher;
5. Have acquired abilities at the level of completing an undergraduate of university course or higher regarding knowledge, attitude, and skills related to their desired specialized fields; and
6. Have acquired common sense and ethical standards as a working member of society.

In order to admit such individuals, this program selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using interviews, academic tests, and external examinations.

## **[Program of Basic Biology]**

Based on its Diploma Policy and Curriculum Policy, this program expects to admit students as described below.

Students who:

1. Have acquired basic knowledge and skills in biology at molecular, cellular, individual, ecological, and evolutionary levels that should have been acquired in the related faculties;
2. Have acquired a command of English at the level of completing an undergraduate of university course or higher; and
3. Have acquired common sense and ethical standards as a working member of society.

In order to admit such individuals, this program selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using interviews, academic tests, and external examinations.

## **[Program of Mathematical and Life Sciences]**

Based on its Diploma Policy and Curriculum Policy, this program expects to admit students as described below.

Students who:

1. Are equipped with basic academic abilities in the fields of mathematics, physics, chemistry, and biology;
2. Have an ambition to open up a new research field for the mathematical science, molecular science, and life science fields as well as integrated fields;
3. Have acquired a command of English at the level of completing an undergraduate of university course or higher; and
4. Have acquired common sense and ethical standards as a working member of society.

In order to admit such individuals, this program selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using interviews, academic tests, and external examinations.

## **[Program of Biomedical Science]**

Based on its Diploma Policy and Curriculum Policy, this program expects to admit students as described below.

Students who:

1. Have an interest in medical and scientific knowledge that can support people's health and longevity, and who aspire to contributing to the development of life science, medical science, and related industrial fields;
2. Can view health and pathologic conditions multilaterally from a basic biological perspective;
3. Have acquired a command of English at the level of completing an undergraduate of university course or higher; and
4. Have acquired common sense and ethical standards as a working member of society.

In order to admit such individuals, this program selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using interviews, academic tests, and external examinations.

## **2. Basic Policy regarding Admissions Screening**

The Graduate School of Integrated Sciences for Life, consisting of the program of Biotechnology, the program of Food and AgriLife Science, the program of Bioresource Science, the program of Life and Environmental Sciences, the program of Basic Biology, the program of Mathematical and Life Sciences, and the program of Biomedical Science, aims to develop postgraduates equipped with the abilities required to pursue a wide range of career paths after completion of their studies. In light of the educational goals and objectives specified in the diploma and curriculum policies of individual departments, we will implement admissions screening based on our diploma policy and curriculum policy, and evaluate individual applicants from a comprehensive and multidimensional perspective. We will also clearly specify the qualities required of students for admission and the evaluation methods.

# CONTENTS

Admissions Policy.....	1
1. Number of Students to Be Recruited and Venue for Examinations, etc.....	5
2. Applicant Eligibility .....	6
3. Application Procedures .....	6
4. Examination Date and Time .....	10
5. Details of Examinations .....	10
6. Screening Criteria .....	12
7. Announcement of Successful Applicants.....	13
8. Enrollment Fee and Tuition .....	13
9. Hiroshima University Excellent Student Scholarships .....	13
10. Personal Information .....	13
11. Examination Information Disclosure.....	14
12. Frontier Development Program for Genome Editing.....	14
13. Additional Notices.....	15
14. Other Points of Attention .....	15
<b>[List of Academic Supervisors]</b>	
Program of Biotechnology.....	16
Program of Food and AgriLife Science.....	21
Program of Bioresource Science.....	24
Program of Life and Environmental Sciences.....	26
Program of Basic Biology.....	28
Program of Mathematical and Life Sciences .....	30
Program of Biomedical Science .....	33

The Graduate School of Integrated Sciences for Life, Hiroshima University, is recruiting students for the Master's Course in the Department of Integrated Science for Life to be enrolled in October 2023 / April 2024.

### 1. Number of Students to Be Recruited and Venue for Examinations, etc.

	Program	Number of students to be recruited	Examination Date	Examination Venue	Inquiries • Submission addresses	
Department of Integrated Sciences for Life	Biotechnology	October 2023 Admission A few	August 22, 2023 (Tue)	School of Integrated Arts and Sciences, Hiroshima University	Support Branch Office for the fields of Science, Hiroshima University 1-3-1, Kagamiyama, Higashi-Hiroshima, 739-8530 TEL: (082) 424-7008, 7009	
	Food and AgriLife Science				Support Office for the fields of Biosphere Science (Graduate Student Affairs), Hiroshima University 1-4-4, Kagamiyama, Higashi-Hiroshima, 739-8528 TEL: (082) 424-7908	
	Bioresource Science				Support Office for the fields of Integrated Arts and Sciences (Graduate Student Affairs), Hiroshima University 1-7-1, Kagamiyama, Higashi-Hiroshima, 739-8521 TEL: (082) 424-6316	
	Life and Environmental Sciences	April 2024 Admission 85				Support Office for the fields of Science (Graduate Student Affairs), Hiroshima University 1-3-1, Kagamiyama, Higashi-Hiroshima, 739-8526 TEL: (082) 424-7309, 4468
	Basic Biology					
	Mathematical and Life Sciences					
	Biomedical Science					

## 2. Applicant Eligibility

Applicants must satisfy one of the following qualifications or be expected to receive any one of the following qualifications by September 30, 2023(for October 2023 admission) or by March 31, 2024 (for April 2024 admission). Applicants shall be residing in Japan and must make an affirmation of admission when applicants will pass the entrance examination.

- (1) have graduated from a Japanese university;
- (2) have completed a 16-year course of formal education outside Japan;
- (3) have taken a correspondence course from an overseas educational institution in Japan and completed a 16-year course of formal education;
- (4) have completed an undergraduate course of an overseas-based educational institute located in Japan that has been approved by the Minister of Education, Culture, Sports, Science and Technology (MEXT), whose graduates are regarded as having completed 16-year course of formal education.
- (5) have been conferred, a degree equivalent to a bachelor's degree through attending an overseas university or other overseas school (limited to those whose education and research activities have been evaluated by persons who have been certified by the relevant country's government or a related institution, or have been separately designated by the Ministry of Education, Culture, Sports, Science and Technology as being equivalent to such) and graduated from a course that requires 3 or more years to complete (Includes graduating from a course implemented by the relevant overseas school while living in Japan through distance learning, as well as graduating from a course implemented by an educational facility established with the relevant overseas country's school education system and has received the designation mentioned above).

Be sure to contact each support office in charge of the program before the application period, if you think you have academic achievements equivalent to or higher than those having completed an undergraduate course at a university.

## 3. Application Procedures

### (1) Application methods

Applicants are required to apply using “online application system”, and send the necessary documents by post. (Partially online application hereinafter referred to as “online application”)

#### <Online application>

- 1) Enter your personal information.
- 2) Pay the application fee, 30,000 yen.
- 3) All application documents must be either sent by mail or delivered in person to the aforementioned address.

**Note:** Online application, entering necessary information on the website and paying the application fee, is the initial registration process, and doesn't mean the completion of the application procedure. **The application procedure wouldn't be completed without either sending or delivering in person all the necessary application documents by the due date.** Be sure to send or bring in person all the necessary application documents to the support office (the aforementioned address). Application documents must arrive within the specified period at the support office. Fully paper-based application without registering online application cannot be accepted in this graduate school.

### (2) Application period

Applicants must complete all of the above procedures (from 1 to 3 in (1)) within the application period.

**From July 19, 2023 to July 25, 2023 (No later than 17:00 (JST))**

### (3) Online application

◆Inquiries regarding entrance examination system

Online Application Helpdesk (\*Japanese speaking only)

Inquires accepted from 10:00 am to 6:00 pm (\*Except Saturday, Sunday and national holidays until July 31)

Tel: 03-5952-3902

UCARO Support Office (\*Japanese speaking only)

Inquires accepted from 10:00 am to 6:00 pm (\*Except from December 30 to January 3)

TEL: 03-5952-2114

- If you have any questions regarding the entrance examination, please contact the support office stated on page 5 in these guidelines. Inquiries are accepted from 9:00 to 17:00. (Excluding Saturday, Sunday, and national holidays)

**<How to apply > Complete the following eight steps within the application period stated below:**

#### **Step 1: Access the online application system**

Access the online application system from the Hiroshima University Admissions Information web page:

<https://www.hiroshima-u.ac.jp/en/nyugaku>

#### **Step 2: Select 'Membership Registration' on the UCARO log in screen.**

Hiroshima University uses the UCARO website for the process from the application to enrollment procedures.

UCARO is an Internet application and enrollment procedure support system.

Account registration for UCARO is required for all applicants (free of charge) and it enables applicants to use the above online application system and complete the enrollment procedures.

#### **Step 3: (If you have, otherwise, skip 3) Enter the Account**

Enter the alphanumeric code (consisting of 8 or more characters) which you received from the Graduate School.

Applicants who wish to exempt the entrance examination fee should contact the support office (page 5) before applying. Those applicants who are judged to be applicable will receive the Account.

#### **Step 4: Input your application data into the Internet application system**

Follow the instruction on the screen and enter your name, address, etc.

#### **Step 5: Confirm the necessary documents and uploaded your photo**

Confirm the necessary documents when they are shown and upload a digital photo of yourself.

※The uploaded photo, which will be used for identification at the examination, will be also used for your student ID card after enrollment and will be maintained in the university's educational system until graduation.

Therefore, please upload an appropriate photo for use after enrollment as well.

Once uploaded, your photo will not be allowed to be replaced.

A fee of JPY 1,000 will be charged for changing the content of your student ID card (photo and your name) after enrollment.



## **Step 6: Payment of entrance examination fee (JPY 30,000)**

Choose the method of payment from the following list. For applications from outside Japan, only credit card payments can be accepted.

1. Credit Cards: VISA, MasterCard, JCB, AMERICAN EXPRESS, Diners Club
2. Convenience Stores: 7-Eleven, LAWSON, MINISTOP, FamilyMart, Daily Yamazaki, Seicomart
3. Banking facilities' ATM 【Pay-easy】
4. Online Banking

(Note)

**\*In addition to the entrance examination fee, applicants must cover the remittance fees.**

\*Applicants need to pay the Processing Fee (The amount of Processing Fee will be notified at the time of online application).

### **Important notices regarding the entrance examination fee**

The examination fee, once paid, will not be refunded for any reason.

However, in cases (1) and (2) below, the examination fee is refundable after deducting the bank transfer fee. Therefore in such cases, please clearly write the “reason for demand of refund”, “name”, “postal code”, “address” ,”transfer destination information “and “contact telephone number” in the prescribed format given from the university and send it to the address mentioned page 5 by postal mail by Thursday, February 22, 2024. (In any case, the Online Application Processing Fee is ineligible for a refund.)

- (1) If the application documents have not been submitted, or if they have not been accepted
- (2) If duplicate payments of the entrance examination fee have been made in error

## **Step 7: Initial registration process complete (Your application is NOT completed yet.)**

You will be issued with a Registration Number (not your Examinee's Number). Please make a note of it or to print out a copy of the computer screen showing the number. The Registration Number is needed for confirming the application details later, and for sending the application documents by post.

## **Step 8: Submission of application documents**

Submission Address: Each support office (see page 5)

All application documents must be either sent by registered mail or delivered in person to the support office. If you submit the application documents directly to the support office, application documents are accepted from 8:30 to 17:00 on a weekday. Please note that the office is closed on Saturday, Sunday, and national holiday.

If you send the application documents by mail, you must send them by registered mail and ensure that the documents reach the office by Tuesday, July 25, 2023. Should the application documents fail to reach the office by that date, however, those postmarked on or before Friday, July 21, 2023 can be accepted.

On the envelope, please write “Application for the Program of ○○○○○, the Graduate School of Integrated Sciences for Life, Hiroshima University” in red ink.

**(4) Documents to be submitted (Specified forms can be downloaded from the Home Page.)**

<b>A</b>	Academic Transcripts	Should be prepared and signed by the president/dean of the university from which you have graduated and sealed securely.
<b>B</b>	Certificate of (Expected) Graduation	<p>Should be prepared and signed by the president/dean of the university from which you have graduated.</p> <p>*If you are a graduate or a current student of a university in China, please obtain the following document by requesting it at “中国高等教育学历证书查询 (CHSI)” (<a href="http://www.chsi.com.cn/xlcx/bgys.jsp">http://www.chsi.com.cn/xlcx/bgys.jsp</a>), and submit it to us together with “毕业证书(Certificate of Graduation)” and “学士 (硕士) 学位证书 (Bachelor/Master's Diploma)”.</p> <ul style="list-style-type: none"><li>• Graduates: Online Verification Report of Higher Education Qualification Certificate (教育部学历证书电子注册备案表)</li><li>• Expected Graduates: Online Verification Report of Student Record (教育部学籍在线验证报告)</li></ul> <p>Please note that applicants must pay the issuing fee for the Online Verification Report (2 元/ certificate) by themselves. Also be sure that there are 15 or more days left until the expiration date of the online verification at the time of its submission.</p>
<b>C</b>	Score Certificate of English Proficiency Tests (The certificate will be returned to you after confirmation by the office.)	<p>Submit a score certificate (original) of English language proficiency tests administrated by outside organizations. (*The score certificate must be ORIGINAL (not copy).)</p> <p>If you have score certificates of more than one test, you may submit them all. In that case, the highest score will be adopted.</p> <p>The types of tests should be any of the following:</p> <ul style="list-style-type: none"><li>- TOEIC®Test</li><li>- TOEIC®-IP (including College TOEIC®)</li><li>- TOEFL®-PBT</li><li>- TOEFL®-ITP</li><li>- TOEFL®-iBT</li><li>- IELTS™</li><li>- The EIKEN Test in Practical English Proficiency (EIKEN)</li><li>- Cambridge English</li><li>- GTEC (Limited to CBT type)</li><li>- TEAP (4 skills)</li><li>- TEAP CBT (4 skills)</li></ul> <p>※TOEIC®-IP (Online test) is not applicable.</p>
<b>D</b>	Curriculum vitae	(Use the official form) All the schools/educational institutions you have enrolled in shall be written.
<b>E</b>	Research Plan	(Use the official form) Submit the research plan in master’s course written in about 400 English words.
<b>F</b>	Return Envelope	A self-addressed standard-size envelope with appropriate postage (stamps)

**(5) Address for submission of application documents:**

Please see page 5 of these application guidelines.

#### (6) Pre-arrangements for special needs applicants

Those who require special consideration for taking examinations and/or pursuing an academic program due to a disability or other legitimate reason must first contact the Support Office (see page 5) and then submit a statement of information as described below (in free format) to provide advance notice so that necessary arrangements may be made.

(a) Period of statement submission: From July 5, 2023 to July 7, 2023

(b) Information to include in the statement

[1] Applicant's name, address, and contact telephone number

[2] Name of the last school attended, the name of program in which you wish to enroll, and the name of the expected academic supervisor

[3] Type and degree of disability (If you are being treated, please submit a medical certificate.)

[4] Requested consideration regarding examinations

[5] Requested consideration after enrollment

[6] Arrangements made at school(s) previously attended

[7] Description of daily life

### 4. Examination Date and Time

Examination Date	Examination	Time
August 22 (Tue), 2023	Specialized subject I	9:00 – 10:30
	Specialized subject II	11:00 – 12:30
	Interview (oral) (about 10minutes/person)	14:00-

### 5. Details of Examinations

#### (1) Written Examination

Program	Subject of Written Examination (score) *<Note>
<ul style="list-style-type: none"><li>• Biotechnology</li><li>• Food and AgriLife Science</li><li>• Bioresource Science</li><li>• Life and Environmental Sciences</li><li>• Basic Biology</li><li>• Mathematical and Life Sciences</li><li>• Biomedical Science</li></ul>	<p>Specialized subject I (150 points)</p> <p>Specialized subject II (150 points)</p>

<Note> Please see below for details regarding specialized subjects.

#### ● Program of Biotechnology

Specialized subject I: Select two subjects from the following four subjects:

Biochemical Engineering, Microbiology, Fundamentals of Biotechnology I, and Fundamentals of Biotechnology II.

\* Fundamentals of Biotechnology I and Fundamentals of Biotechnology II:  
Questions on general knowledge of the application of biotechnology will be presented in essay format.

\*\* Students are required to take two subjects from the four subjects:

Biochemical Engineering, Microbiology, Fundamentals of Biotechnology I and Fundamentals of Biotechnology II.

\* \* In Special Subjects I, those who have graduated (or are expected to graduate) from the Program of Biotechnology in Cluster 3, the Faculty of Engineering, Hiroshima University, are required to take Biochemical Engineering and Microbiology. Students other than the above should select any two subjects from the following four subjects:  
Biochemical Engineering, Microbiology, Fundamentals of Biotechnology I, and Fundamentals of Biotechnology II.

Specialized subject II: Two subjects. Molecular Biology and Biochemistry

### ●Program of Food and AgriLife Science

Specialized subject I: An essay-based exam to qualify a person for the admission policy of the Food and AgriLife Science program.

Please refer to the page 1 for admission policy.

Specialized subject II: Specialized subject of the applicant's expected academic supervisor

Please refer to the home page of Graduate School of Integrated Sciences for Life (<https://www.hiroshima-u.ac.jp/en/ilife/research/food-and-agrilife-science>) for the specialized subjects of the academic staffs.

### ●Program of Bioresource Science

Specialized subject I: An essay-based exam to qualify a person for the admission policy of the Bioresource Science program.

Please refer to the page 2 for admission policy.

Specialized subject II: Specialized subject of the applicant's expected academic supervisor

Please refer to the home page of Graduate School of Integrated Sciences for Life (<https://www.hiroshima-u.ac.jp/en/ilife/research/bioresource-science>) for the specialized subjects of the academic staffs.

### ●Program of Life and Environmental Sciences

Specialized subject I · II: Please select and answer one subject concerning the following research fields.

The same research field is selectable for specialized subject I and II.

Physical chemistry, Organic chemistry, Analytical chemistry, Biochemistry, Cell Biology, Evolutionary Biology, Plant physiology, Ecology, Microbiology, Neuroscience, Environmental sciences

### ●Program of Basic Biology

Specialized subject I: Please select and answer some subjects out of basic questions concerning biology. (Reference book: Campbell Biology <11th Edition>)

Specialized subject II: An essay-based exam (Questions about basic knowledge and research of biology)

### ●Program of Mathematical and Life Sciences

Specialized subject I: Please select and answer one concerning your desired field out of the following subjects; Mathematics, Physics, Chemistry, Biology

Specialized subject II: Please select and answer one concerning your desired field out of the following subjects; Mathematics, Physics, Chemistry, Biology

### ●Program of Biomedical Science

Specialized subject I: Some basic questions from the fields of biochemistry, molecular biology, and cell biology are set on the exam. Candidates need to select and answer two questions.

Reference: Essential Cell Biology 5th ed. (WW Norton & Co)

Specialized subject II: Questions are set from the research fields of the faculty members. Please refer to the website of the Graduate School of Integrated Sciences for Life for their research fields.

(<https://www.hiroshima-u.ac.jp/en/ilife/research/biomedical-science>)

## (2) Oral Examination

Details of the examination will be informed to the applicants on the exam day.

## 6. Screening Criteria

Screening will be based on the results of examinations (written examination and interview) and foreign language proficiency. Applicants' grade transcripts and research plan will be reflected in the interview.

(1) 150 points will be allocated to the test in a specialized subject I. 150 points will be allocated to the test in a specialized subject II.

(2) 150 points will be allocated to foreign language proficiency.

Evaluation of applicants' foreign language proficiency will be based on the conversion to a maximum of 150 points according to the following conversion formula using score certificate of English language proficiency administrated by outside organizations submitted at the time of application.

Conversion formula

$$\text{TOEIC® Test} / \text{TOEIC®-IP} = 150 \times (\text{Score of TOEIC®} / 990)^{0.75}$$

$$\text{TOEFL®-PBT} / \text{TOEFL®-ITP} = 150 \times \{(\text{Score of TOEFL®} - 310) / 367\}^{0.75}$$

Score certificates for English language proficiency test other than the above, please check the conversion table below.

Conversion table of score for English language proficiency tests other than TOEIC® Test, TOEIC®-IP, TOEFL®-PBT, and TOEFL®-ITP

English Proficiency Tests	Cambridge English	The EIKEN Test in Practical English Proficiency (EIKEN)	GTEC (Limited to CBT type)	IELTS™	TEAP (4 skills)	TEAP CBT (4 skills)	TOEFL iBT®
Foreign Language Proficiency (Max. of 150 points)							
150	200 - 230			8.5 - 9.0			
145	180 - 199	Grade 1	1350 - 1400	7.0 - 8.0	375 - 400	800	95 - 120
126	160 - 179	Grade Pre-1	1190 - 1349	5.5 - 6.5	309 - 374	600 - 795	72 - 94
97	140 - 159	Grade 2	960 - 1189	4.0 - 5.0	225 - 308	420 - 595	42 - 71
49	120 - 139	Grade Pre-2	690 - 959		135 - 224	235 - 415	
31	100 - 119	Grade 3	270 - 689				

(3) In the interview, Applicants' understanding of his/her own graduation thesis, motivation for studying at the Graduate School, and purpose of research will be discussed and evaluated.

## 7. Announcement of Successful Applicants

**12:00 (expected), Friday, September 1, 2023**

- (1) Successful applicants' ID numbers will be released on the bulletin board belonging to each support office (page 5) and the website of the Graduate School of Integrated Sciences for Life, Hiroshima University.
- (2) The Graduate School will send letters of acceptance to successful applicants. If you do not receive the letter by Wednesday, September 6, even if your ID number is on the list of successful applicants, please inquire at each support office (page 5).
- (3) Please note that the announcement of the website will be unofficial. Official announcement will be made via the bulletin board and the letters of acceptance. The office will not accept inquiries by phone regarding the results of the examinations.

## 8. Enrollment Fee and Tuition Fee

### Payment

Enrollment Fee: ¥282,000

Tuition Fee: ¥535,800 per year (¥267,900 per semester)

- (1) The enrollment fee, once paid, will not be refunded for any reason.
- (2) The enrollment fee and tuition shown above were correct as of April 2023. If they are changed, students must pay the revised amount.
- (3) Details of enrollment procedures, which will be conducted in mid-September, 2023 for October 2023 admission, and will be conducted in mid-March, 2024 for April 2024 admission, will be notified later to successful applicants.

## 9. Hiroshima University Excellent Student Scholarships

To inspire students to study hard and to foster excellent human resources, Hiroshima University institutes its own scholarship system that supports students who show excellent performances at their research achievement and so on.

## 10. Personal Information

Applicants' personal information (name, date of birth, sex, etc.) provided for screening will be used solely for the purpose of screening, announcement of results, and enrollment procedures. After enrollment, the University will manage the information to use it for student support activities (filing applications for scholarships and for waiving/discounting tuitions, etc.), and survey and research activities (for instance, surveys and analyses of applicants in order to improve screening systems). The University shall neither appropriate the information for any other purpose nor provide it to individuals/groups other than faculty or staff members of the University.

## 11. Examination Information Disclosure

The disclosure of examination results (considered as personal information) may be requested in the following manner:

- (1) Obtain an examination information disclosure application form:  
Write to the address below, indicating on the envelope 入試情報開示申請書請求 or "Examination Information Disclosure Application Form Request," enclosing a self-addressed return envelope (long No. 3 type, 120 mm×235 mm) bearing the examinee's name, address and postal code and an 94 yen stamp.
- (2) Complete the examination information disclosure application form, and send by post the documents listed below between April 1 and May 31, 2024(postmarked) to the address mentioned page 5.
  - ① Completed examination information disclosure application form
  - ② Original Examination Card for the admission examination of the Graduate School of Integrated Sciences for Life, Hiroshima University (a copy will not be accepted; the original Card will be returned at the time of information disclosure)
  - ③ Self-addressed return envelope (long No. 3 type, 120 mm × 235 mm) bearing the examinee's name, address and postal code and a 414 yen stamp.Disclosure Applicants may be requested to correct any submitted documents found to be inappropriate.
- (3) The Graduate School of Integrated Sciences for Life will send a notice of examination information disclosure to the Disclosure Applicant by simplified registered mail within 30 days from the receipt of the application form.

## 12. Frontier Development Program for Genome Editing

Hiroshima University launched the Frontier Development Program for Genome Editing, an integrated Master's-PhD course, with the aim of training PhD students to introduce innovations to society. This program consists of the Life Science Course (5-year curriculum) and the Medical Course (4-year curriculum) in order to provide students with opportunities to acquire basic and applied knowledge and to learn techniques of genome editing. This program enables students to master genome editing technology and connect it directly to industry.

### ◆Admission

Hiroshima University seeks students who wish to enroll in the Life Science Course (5-year curriculum) of the "Frontier Development Program for Genome Editing" in October 2023 and April 2024.

[Admission Requirements]

Those who took/will take the entrance examinations for October 2023 or April 2024 enrollment of the Master's Course of the Graduate School of Integrated Sciences for Life.

1. Prospective students of the program must have passed the above-mentioned examinations by the date of the interview as a first step.
2. All applicants must choose a prospective advisor from the list of faculty members and consult him/her about the relevance of the program to the activities they wish to conduct.

Please refer to the website for the admission information.

(URL : <https://genome.hiroshima-u.ac.jp/en/recruitment/index.html> )

### ◆Life Science Course (5-year curriculum)

In the first and second years, students will learn basic and advanced genome editing techniques. From the third year, they will conduct research utilizing the knowledge they have acquired. Through basic courses on social implementation of technologies and internships, they will be trained to become experts able to work at the cutting edge of genome editing technology.

\*Students of this program are required to satisfy the requirements of both their major in the graduate school and this program simultaneously.

#### ◆Economic assistances

We currently provide students of the program with financial supports mentioned in (1), (2), and (3) below.

- (1) 50,000 yen per month will be provided for six months for up to three students who are recognized as displaying excellent academic performance and having outstanding achievements in academic activities after enrolling. This begins from the following semester after enrolment in the program. (Details of the application procedure will be announced after admission.)
- (2) Free tuition will be provided for third and later years of the Life Science Course and all years of the Medical Course. (Some students may be ineligible due to their academic performance.)
- (3) Ikenoue Student Dormitory is available with priority for two years after enrolment in the program. (Boarding fee, common expenses, and utility fee will be charged.)

\*The above details in (1), (2), and (3) are as of April 1, 2023 and are subject to change.

\*The financial support is provided only within the standard course term.

\* The above support (2) will come to an end on March 31, 2025. The financial support after April 1, 2025 has not yet been confirmed.

#### ◆Contact

Collaboration Office, Education Office, Hiroshima University

1-1-1 Kagamiyama, Higashi-hiroshima City, Hiroshima, Japan 739-8524 (Room 809, Building B of the Graduate School of Education)

TEL : 082-424- 4689, 6819

Email : [leading-program@office.hiroshima-u.ac.jp](mailto:leading-program@office.hiroshima-u.ac.jp)

URL: <https://genome.hiroshima-u.ac.jp/en/recruitment/index.html>



### 13. Additional Notices

- (1) **Prior to application, please consult about the research programs with a faculty member under whom applicant wishes to study.** (<https://www.hiroshima-u.ac.jp/en/ilife/research>)
- (2) Hiroshima University has established the university's Rules on Security Export Control in accordance with the Foreign Exchange and Foreign Trade Act, and conducts strict examinations for acceptance of international students, etc. Therefore, please be advised that International applicants may be unable to receive their desired education or conduct their desired research due to the restriction by the above regulations.
- (3) The certificates to be submitted must be the originals or certified photocopies. Uncertified photocopies would not be recognized as official certificates.
- (4) No changes are permitted in the content of documents after their submission.  
The examination fee will not be returned for any reason.
- (5) Any forgery or falsification of the documents and/or academic fraud would result in cancellation of acceptance even after passing examination or admission.
- (6) If an applicant could not graduate from the university before the admission date, he/she would lose the eligibility to enter our graduate school in this session.
- (7) Application Guidelines and other related documents can be downloaded from the website of the Graduate School of Integrated Sciences for Life, Hiroshima University.
- (8) If the program of an academic supervisor under whom you wish to study is changed due to program reorganization, the program you belong to may change.
- (9) For further information, please contact the following each support office in charge of the program(s) (page 5).

### 14. Other Points of Attention

Smoking is prohibited entirely in All Hiroshima University campuses from January, 2020.



## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生物工学プログラム Program of Biotechnology (1/5)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	秋 庸裕 Tsunehiro AKI	機能性油脂を生産する微生物のゲノム育種とその健康食品、医薬品、化学品、バイオエネルギー供給への応用展開をめざした研究 Genomic breeding of oleaginous microorganisms for provision of new health foods, pharmaceuticals, chemicals and sustainable bioenergy.	脂質工学, 微生物バイオ, バイオリファインリー Lipid engineering, Microbial biotechnology, Biorefinery
教授 Professor	岡村 好子 Yoshiko OKAMURA	海洋バクテリアの未知・未利用の遺伝子資源を解析する新しい技術開発を行い、遺伝子資源を有用物質生産に利用するマリンバイオテクノロジー 海洋バクテリアの金属集積能力を、レアメタル・レアアース資源回収し、金属ナノ粒子に変換するバイオミネラリゼーション Marine Biotechnology: Development of new technologies using marine bacterial metagenome to produce useful materials. Biomining: Recovery of heavy and minor metals and rare earth elements, and nanoparticle formation.	マリンバイオテクノロジー, バイオミネラリゼーション, バイオマス燃料生産 Marine biotechnology, Biomining, Biofuel production
教授 Professor	加藤 純一 Junichi KATO	環境バイオテクノロジー: 環境負荷軽減, 環境浄化, 環境モニタリングへのバイオテクノロジーの適用。ケミカルバイオテクノロジー: 生物機能を活用した環境適合型生産プロセスの基盤技術開発 Environmental Biotechnology: Development of new biotechnology for bio-remediation, bioprevention, and biomonitoring. Chemical Biotechnology: Development of bioprocess for production of fine and commodity chemicals using solvent tolerant bacteria.	環境バイオテクノロジー, 分子微生物生態工学, 生体触媒 Environmental biotechnology, Molecular microbial ecological engineering, Biocatalyst
教授 Professor	河本 正次 Seiji KAWAMOTO	アレルギーの発症・治癒の分子免疫学と新規治療法開発, アレルギー等炎症性難病を予防する機能性食品の開発, 免疫寛容誘導機構の解明と次世代免疫抑制剤・新規抗炎症薬開発への創薬展開 We are interested in the molecular mechanisms underlying the pathogenesis of allergic disorders. We are also searching for anti-inflammatory foodstuffs, which are useful to prevent atopic and proinflammatory disorders. Another ongoing project is to elucidate mechanisms involved in the establishment of immune tolerance, and its application to the development of novel immunosuppressants and anti-inflammatory drugs.	アレルギー・免疫, 動物細胞工学, 機能性食品 Allergy/Immunology, Animal cell technology, Functional foods
教授 Professor	黒田 章夫 Akio KURODA	分子進化学を用いて新たなタンパク質・ペプチドを創成し、バイオセンサーや治療に応用する研究。例えば、アスベスト結合タンパク質を創成してアスベスト検査に応用する。また膜結合ペプチドを創成し、ガンなどの病気に関わるエクソソームやマイクロバシクルなどの膜小胞の分離に応用する。 Creation of new proteins/peptides by evolutionary molecular engineering. For example, we created an asbestos-binding protein in order to analyze asbestos. We also created a membrane-binding peptide in order to isolate extracellular membrane vesicle (exosome, microvesicle) that have great potential as diagnostic tools and biomarkers for many kinds of diseases such as cancers.	タンパク質工学, 進化学, バイオセンシング Protein engineering, Evolution engineering, Biosensing
教授 Professor	中島田 豊 Yutaka NAKASHIMADA	微生物のエネルギー代謝経路を培養学的または分子生物学的に改変し、特にバイオマスなどの再生可能エネルギー由来の原料をもとにして、水素、メタン、アルコール類などの有用物質を効率的に生産する技術研究 The subject of research in a field of energy metabolic engineering for production of bio-fuels such as methane, hydrogen and alcohols, and bio-materials from renewable feedstocks such as biomass based on fermentation technology and genetic engineering of microorganisms.	発酵工学, 生物化学工学, 代謝工学 Fermentation technology, Biochemical engineering, Metabolic engineering

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生物工学プログラム Program of Biotechnology (2/5)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	水沼 正樹 Masaki MIZUNUMA	単細胞真核生物・酵母を用いて、Ca <sup>2+</sup> シグナル伝達経路の全貌を明らかにする。特に、Ca <sup>2+</sup> が関与する細胞周期、寿命、および細胞死の分子機構を解明する。また、多細胞生物・線虫を用いて老化・寿命機構に関する研究も行う。 We focus on mechanisms of Ca <sup>2+</sup> -dependent signaling using the unicellular eukaryote, <i>Saccharomyces cerevisiae</i> , as a model system. In particular, we are currently investigating aspects of calcium-dependent signal transduction in yeast, including cell-cycle, life span, and apoptosis. We also study on aging and life span in <i>Caenorhabditis elegans</i> .	酵母, 線虫, 寿命 Yeast, <i>C. elegans</i> , Lifespan
客員教授 Visiting Professor	赤尾 健 Takeshi AKAO	清酒酵母をはじめとした醸造用酵母の応用ゲノミクス。酵母のゲノム情報を利用して菌株の精密識別技術の開発、清酒酵母の有用機能の遺伝的要因の解明、効率的育種技術の開発などを目指している。 Applied genomics of sake yeast and the related industrial strains: Utilization of the genome information for exploration of unique DNA markers in each lineage, genetical study on characteristic features of valuable sake yeast strains and development of efficient breeding method.	清酒酵母, 応用ゲノミクス, 醸造特性の遺伝学 Sake yeast, Applied genomics, Genetics of brewing characteristics
客員教授 Visiting Professor	磯谷 敦子 Atsuko ISOGAI	清酒や焼酎の香り成分に関する研究を行っている。官能特性に寄与する成分を明らかにし、その生成機構の解明および制御技術の確立を目指している。 Studies on the aroma compounds in sake and shochu, aiming at identification of components responsible for their characteristics, elucidation of their formation mechanism, and development of control techniques.	清酒, 焼酎, 香り成分 Sake, Shochu, Aroma compounds
客員教授 Visiting Professor	岩下 和裕 Kazuhiro IWASHITA	麹菌を中心とした醸造微生物について、清酒などの製品や麹菌の特性に関わる分子メカニズムをゲノミクス、メタボロミクスを中心とした総合オミックスにより解析します。また、その成果を利用して、麹菌による機能性物質の生産・制御、新たな醸造法の開発など、環境や人の健康に優しい醸造学を目指している。 The genomics and metabolomics study of industrial microorganisms (especially Japanese national fungi of <i>Aspergillus oryzae</i> ) to illustrate the primitive molecular mechanisms. The outcome of our researches should be applied to the design for new industrial strains and new process to produce beneficial metabolite and fermentation products.	醸造微生物, 総合オミックス解析, イノベーション Fermentation microorganism, Multiomics analysis, Innovation
客員教授 Visiting Professor	森田 友岳 Tomotake MORITA	発酵によるバイオベース素材の生産と応用に関して、微生物のスクリーニングや機能解析、遺伝子組換えによる育種改良を行っている。 To develop new bio-based materials, we are promoting the screening, characterization, and genetic modification of industrial microbes.	バイオベース素材, 産業微生物, 応用微生物学 Bio-based materials, Industrial microbes, Applied microbiology
准教授 Associate Professor	青井 義輝 Yoshiteru AOI	環境中に多く存在している難培養性微生物を対象に、①革新的な分離培養技術の開発、②未培養重要微生物の機能解明と利用、③未知増殖制御メカニズムの解明を目的とする。それらを通じて、微生物の生態および未知なる機能を明らかにし、微生物を制御する術を手に入れること、さらに医薬品を中心とした未利用資源の開拓に向けた新たな道筋を構築することを目指している。 Our research goals are (i) bringing innovation to microbial cultivation, by development of radically new cultivation technology; (ii) isolation of environmentally important or potentially useful but yet-to-be cultured microorganisms; (iii) puzzling out the reason as to why most of the environmental microorganisms are recalcitrant for cultivation.	未知微生物, 難培養性微生物, 休眠・覚醒 Unknown microbes, Unculturable microbes, Dormancy and resuscitation

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生物工学プログラム Program of Biotechnology (3/5)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	荒川 賢治 Kenji ARAKAWA	多様な生理活性物質を生産する放線菌について、代謝産物合成機構の解明や二次代謝制御カスケードの網羅的解析を行う。また生理活性天然物の単離・構造決定や生合成酵素の反応機構解析、さらに医薬薬開発を目指した応用研究も行う。 We aim to characterize the mechanism for the biosynthesis of bioactive compounds and their regulatory system in Streptomyces species. Isolation of new metabolites and characterization of biosynthetic enzymes are also studied in our laboratory.	生理活性物質, 生合成, 二次代謝 Bioactive compounds, Biosynthesis, Secondary metabolism
准教授 Associate Professor	池田 丈 Takeshi IKEDA	細菌によるシリコン蓄積機構の分子生物学的解析。生体分子と無機材料の界面制御による新規機能の創出とバイオ融合デバイス・マテリアル開発への応用。 Our research focuses on the interaction between biomolecules and inorganic materials. We are developing biointegrated devices/materials using solid-binding proteins/peptides as an interface.	バイオミネラリゼーション, 固体結合ペプチド・タンパク質, バイオ融合デバイス・マテリアル Biom mineralization, Solid-binding proteins/peptides, Biointegrated devices/materials
准教授 Associate Professor	上野 勝 Masaru UENO	真核生物のテロメア維持機構・DNA修復機構の解明と、その抗老化・抗癌関連医薬品への応用研究 Study on molecular mechanisms of telomere maintenance and DNA repair and their applications for development of anti-cancer and anti-ageing agents.	テロメア, がん, 老化 Telomere, Cancer, Aging
准教授 Associate Professor	加藤 節 Setsu KATO	様々な環境における微生物の生存戦略, そして細胞死の過程を1細胞レベルで明らかにすることで生命システムのさらなる理解と細胞機能の増強を目指す。 We analyze how microbial cells adapt and survive under various conditions using the single cell quantitative method. We are also interested in the process of cell death to identify the weakness of cellular homeostasis. These analyses will help us to find the principles of life and to create useful host cells for bioprocess.	細胞の恒常性, 生と死, 1細胞解析 Cellular homeostasis, Life and death, Single cell analysis
准教授 Associate Professor	北村 憲司 Kenji KITAMURA	栄養による微生物(酵母)の生理機能調節の研究。細胞外栄養輸送体の発現・活性制御や基質特異性, ジペプチドの新規生理作用(増殖阻害など)探索とその作用機構の解明等を通じて, 細胞の環境応答を理解するとともに, 高機能化した酵母細胞の開発に応用する。 Studies on modulation of cellular physiology in yeast by nutrients via regulation of peptide transporters. Searching for their non-peptide substrates, and exploration of novel bioactivities of dipeptides. Development of high-functioning yeast strains.	酵母, 輸送体, アミノ酸/ジペプチド Yeast, Transporter, Amino acid/dipeptide
准教授 Associate Professor	久米 一規 Kazunori KUME	真核細胞のモデルとして酵母を用い, 生命の基本単位である細胞のなりたちを理解するとともに, 細胞が増殖するうえで根幹となる細胞内システムの解明を目指す。具体的には, 細胞固有の形を決める細胞極性の制御機構, 細胞を構成するオルガネラのサイズおよび形態の制御機構について, その全貌を明らかにし, 分子レベルでの解明を目指す。 We would like to understand mechanisms of global cellular systems which are fundamental to cellular growth, development and reproduction of eukaryotic cells. Especially we are interested in cell polarity and organelle size and shape. For this research, we use the genetically amenable model organism, yeasts.	細胞構造, オルガネラ, 細胞極性 Cell structure, Organelle, Cell polarity

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生物工学プログラム Program of Biotechnology (4/5)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	田島 誉久 Takahisa TAJIMA	環境微生物(有機溶媒耐性微生物や低温菌)を活用した効率的な物質生産のための生体触媒開発。バイオインフォマティクスによるゲノム情報や代謝物の解析と代謝工学への利用 Development of biocatalysts for efficient bio-conversion processes by using solvent tolerance microorganisms and psychrophile. Bioinformatic analyses of genome information and metabolites, and their utilization for metabolic engineering.	物質生産, 低温菌, 代謝工学 Bioproduction, Psychrophile, Metabolic engineering
准教授 Associate Professor	中堅 三弥子 Miyako NAKANO	タンパク質翻訳後修飾の1つである糖鎖付加は, 細菌やウイルスなどの病原体の感染, 癌化, 薬物耐性獲得などに関わっている。これらの生物学的な機序を質量分析装置などを用いた糖鎖構造解析法により解明する。 Glycosylation, which is one of the posttranslational modifications of proteins, is involved in infection by pathogens such as bacteria and viruses, cancer and acquisition of drug-resistance. We investigate these biological mechanisms with detailed analysis of glycan structures by mass spectrometry.	糖鎖, 質量分析, バイオマーカー Glycan, Mass spectromery, Biomarker
准教授 Associate Professor	廣田 隆一 Ryuichi HIROTA	生物の必須元素であるリンの生物循環, 代謝に関する研究。主に微生物を用いてリンの代謝メカニズム, リン酸ポリマーの生命機能を分子レベルで解明し, リン高蓄積微生物を使った環境浄化, リン資源枯渇問題の解決, バイオセーフティ技術やバイオプロセス構築へ応用する。 Basic studies on the phosphorus metabolism in microorganisms, and its applications to biotechnology such as phosphorus removal using phosphate-accumulating organisms, phosphorus recycling from activated sludge, biosafety strategy, and the construction of bioprocesses.	リン代謝, バクテリア, バイオテクノロジー Phosphorus metabolism, Bacteria, Biotechnology
准教授 Associate Professor	藤江 誠 Makoto FUJIE	高等植物と微生物の相互作用について分子生物学的な研究を行っている。また,ゲノム編集技術を利用して光合成微生物のバイオマス生産能力を向上させる研究も行っている。 We focus on the interaction between microorganisms and higher plants. We also study biomass production using photosynthetic microorganism by molecular biological methods, such as genome editing.	植物-微生物相互作用, バイオマス生産, ゲノム編集 Plant-microbe interaction, Biomass production, Genome editing
准教授 Associate Professor	舟橋 久景 Hisakage FUNABASHI	生体分子や生細胞を機能性材料として捉え, それらのさらなる機能の開発や新しい利用法を開拓する。機能性タンパク質, 核酸などを利用したバイオセンシング分子開発や, 生細胞応答測定法, 生細胞機能制御法の開発を行っている。 Our research focuses on using biomolecules and living cells as functional materials. We are developing novel functional molecules such as biosensing molecules with proteins and nucleic acids. We are also exploring new methods to create, evaluate, and manipulate functional living cells.	生体機能材料, バイオデバイス, バイオセンシング Biofunctional materials, Biodevices, Biosensing
客員准教授 Visiting Associate Professor	藤井 達也 Tatsuya FUJII	カビや酵母等の真核微生物を中心に, これらが示す多様な表現型(有用物質高生産性, 各種ストレス耐性など)のメカニズムを分子レベルで解明し, 再生可能資源の有効利用に役立てることを目指している。 To use filamentous fungi and yeasts effectively, we aim to reveal the mechanisms of their various phenotypes such as high-productivity of useful materials and high stress tolerance.	糸状菌, 酵母, 再生可能資源 filamentous fungus, yeast, renewable resources

大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

生物工学プログラム Program of Biotechnology (5/5)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
助教 Assistant	緋田 安希子 Akiko HIDA	環境細菌の運動性に関わる物質認識機構とその生物間相互作用(感染・共生)における役割を解明し、バイオテクノロジーへ応用する。 Studies on mechanism of chemical recognition involved in motility of environmental bacteria and its roles in biological interactions such as infection and symbiosis, and its applications to biotechnology.	環境細菌, 運動性, 生物間相互作用 Environmental bacteria, Motility, Biological interactions
助教 Assistant	古水 千尋 Chihiro FURUMIZU	植物は様々な環境刺激に対して体の成長や生理機能を柔軟に変化させて応答する。その仕組みを分子レベルで理解し、応用展開を図って、私たちの社会や環境に役立てる研究を目指している。 Plants respond to shifting environmental conditions by changing their growth, development, and physiology. Our goal is to decipher its molecular underpinnings and to harness the power of plants for the good of society and environment.	植物, 幹細胞, 細胞間情報伝達, 分子進化 Plants, Stem cells, Intercellular signaling, Molecular evolution
助教 Assistant	湯川 格史 Masashi YUKAWA	染色体分配に必須な紡錘体微小管形成の分子機構解析。真核モデル生物である酵母を用いて分子生物学・遺伝学・生化学的アプローチにより、研究・教育活動を推進する。また、得られた知見をヒト疾患治療のための医療技術・創薬開発に応用する。 Our main research interests are the molecular mechanisms to establish and maintain a bipolar spindle structure, which is essential for proper chromosome segregation. The research projects involve the use of molecular biology, genetics, and biochemistry to characterize the function of proteins involved in the organization of the bipolar spindle in yeast.	細胞周期, 染色体分配, 細胞骨格 Cell cycle, Chromosome segregation, Cytoskeleton

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 食品生命科学プログラム Program of Food and AgriLife Science (1/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	上野 聡 Satoru UENO	食品脂質の物性評価および動的性質の解明 Characterization of Physical properties and Clarification of kinetics for edible lipids.	脂質, 結晶化, 多形転移 Lipid, Crystallization, Polymorphic transformation
教授 Professor	川井 清司 Kiyoshi KAWAI	食品の加工, 保存, 食感に関する工学的研究 Food processing, preservation, and texture analysis.	食品加工, 保存, 食感 Food processing, Preservation, Texture analysis
教授 Professor	三本木 至宏 Yoshihiro SAMBONGI	微生物のエネルギー代謝蛋白質の構造と機能に関する研究 Studies on structure and function of microbial energy metabolism proteins.	エネルギー代謝, 極限環境微生物, 蛋白質構造機能 Energy metabolism, Extremophiles, Protein structure
教授 Professor	島田 昌之 Masayuki SHIMADA	生殖機構の分子内分泌学的解析による生殖工学技術の開発に関する研究 The study for understanding molecular and endocrine mechanisms of reproductive functions and developing novel reproductive technologies.	生殖生物学, 分子内分泌学, 繁殖技術 Reproductive biology, Molecular endocrinology, Reproductive technology
教授 Professor	島本 整 Tadashi SHIMAMOTO	食中毒細菌の病原性関連遺伝子と薬剤耐性遺伝子の解析およびノロウイルス失活法の開発 Analysis of pathogenicity-related genes and drug resistance genes of foodborne pathogenic bacteria and development of norovirus inactivation method.	食中毒細菌, 薬剤耐性菌, ノロウイルス Foodborne pathogenic bacteria, Drug-resistant bacteria, Norovirus
教授 Professor	鈴木 卓弥 Takuya SUZUKI	食品成分による生体調節作用に関する研究 Physiological functions of nutrients and food factors.	機能性食品, 栄養, 健康 Functional foods, Nutrition, Human health
教授 Professor	中江 進 Susumu NAKAE	アレルギー・自己免疫疾患の発症機構の解明 Studies of pathogenesis of allergic and autoimmune disorders.	慢性炎症, サイトカイン, 疾患モデルマウス chronic inflammation, cytokines, mouse models for human diseases
教授 Professor	長沼 毅 Takeshi NAGANUMA	環境生物資源の応用に関する研究 Study on applications of environmental biological resources.	極限環境, 極限環境生物, 生物多様性 Extreme environments, Extremophiles, Biodiversity
教授 Professor	西堀 正英 Masahide NISHIBORI	動物ゲノム情報を利用した哺乳類および鳥類の分子進化, 分子系統および分子地理学的研究とその農学への応用研究 Studies on Mammalian and Avian Molecular Evolution, Phylogenetics and Geography using Their Information of Animal Genome, and Their Application to Agricultural Sciences.	動物遺伝, 分子進化, 分子系統学的研究 Animal genetics, Molecular evolution, Molecular phylogenetic study
教授 Professor	西村 慎一 Shinichi NISHIMURA	微生物が産生する共生・抗生物質のケミカルバイオロジー Chemical biology using bioactive natural products	天然物化学, 生理活性化合物, ケミカルバイオロジー natural products chemistry, bioactive metabolites, chemical biology
教授 Professor	羽倉 義雄 Yoshio HAGURA	食品の力学物性・電気物性の解析とそれらの物性を利用した新規加工・計測技術の開発に関する研究 Analysis of mechanical and electrical properties of the food, and development of food processing and measurement techniques using those properties.	力学物性, 電気物性, 食品加工 Mechanical properties, Electrical properties, Food processing
教授 Professor	細野 賢治 Kenji HOSONO	持続的な食料資源の確保とフード・サプライチェーンの構造に関する社会経済農学の視点からの研究 Socio-economic Agricultural Study about Sustainable Food Resource and Supply Chain.	食料生産管理, 食料市場, 持続的発展 Food production management, Food market, Sustainable development

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 食品生命科学プログラム Program of Food and AgriLife Science (2/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	堀内 浩幸 Hiroyuki HORIUCHI	鳥類の幹細胞研究とゲノム編集技術を用いた農学分野での基礎から応用研究への展開 Basic and applied study using avian stem cells and genome editing technology in the agriculture field.	鳥類, 幹細胞, ゲノム編集 Avian, Stem cells, Genome editing
教授 Professor	矢中 規之 Noriyuki YANAKA	生活習慣病発症の分子メカニズムの解明と有効な食品因子の探索 Molecular mechanisms of lifestyle-related diseases and nutritional science.	生活習慣病, 食品因子, 分子栄養学 Lifestyle-related diseases, Food factor, Molecular nutrition
客員教授 Visiting Professor	奥田 将生 Masaki OKUDA	酒類原料の特性及び利用に関する研究開発 Research for production and utilization of high quality rice for sake making.	酒類, 酒米, 原料米の酒造適性 Alcoholic beverage, Sake rice, Properties of rice used for sake
准教授 Associate Professor	大村 尚 Hisashi OMURA	情報化学物質を媒介とした生物間相互作用に関する研究 Studies on chemical interactions between plants and insects.	化学生態学, セミオケミカル, フェロモン Chemical ecology, Semiochemical, Pheromone
准教授 Associate Professor	沖中 泰 Yasushi OKINAKA	水産生物とその病原体との相互作用に関する研究 Studies on the interactions between aquatic organisms and their pathogens.	病原体, 魚類, 感染メカニズム Pathogen, Fish, Infection mechanism
准教授 Associate Professor	カムランシー タナッチャポーン Thanutchaporn KUMRUNGSEE	骨格筋, および脳の疾病予防効果を有する食品因子に関する研究 Food factors with muscle and brain disease prevention.	食品因子, 骨格筋, 脳 Food factors, Muscle, Brain
准教授 Associate Professor	国吉 久人 Hisato KUNIYOSHI	水圏動物の変態・生殖に関する生化学的研究 Biochemical studies on metamorphosis and reproduction in aquatic animals.	タンパク質, 生物活性物質, 機器分析 Proteins, Bioactive substances, Instrumental analyses
准教授 Associate Professor	小泉 晴比古 Haruhiko KOIZUMI	医薬品を含めた食品成分の結晶化における物理的挙動の解明 Clarification of the physical behavior of crystallization in food components, including pharmaceuticals.	電場印加, 結晶成長, 生体高分子 Electric field, Crystal growth, Biopolymer
准教授 Associate Professor	田中 若奈 Wakana TANAKA	植物の形態形成を制御する分子メカニズムの解明と育種への応用 Elucidation of molecular mechanisms that regulate plant development and their application for crop improvement.	植物発生遺伝学, メリステム, イネ Plant developmental genetics, Meristem, Rice
准教授 Associate Professor	長命 洋佑 Yosuke CHOMEI	食料生産および地域社会の持続的発展に資する諸資源活用に関する研究 Studies on resources using for sustainable development of food production and communities.	農業経営, 消費者, 地域社会 Farm management, Consumer, Community
准教授 Associate Professor	中山 達哉 Tatsuya NAKAYAMA	食中毒細菌の病原性および薬剤耐性菌の拡散・防疫に関する研究 Studies on the pathogenicity of foodborne bacteria and the spread and prevention of antibiotic-resistant bacteria.	食中毒細菌, 病原性, 薬剤耐性菌 Foodborne bacteria, Pathogenicity, Antibiotic-resistant bacteria
准教授 Associate Professor	船戸 耕一 Kouichi FUNATO	リピッドの動態と機能に関する分子遺伝学的研究 Molecular genetic studies of lipid dynamics and functions.	脂質, 酵母, 分子遺伝学 Lipid, Yeast, Molecular genetics
客員准教授 Visiting Associate	正木 和夫 Kazuo MASAKI	醸造微生物の育種, 酵素機能の解明と利用 Development of microorganisms for the brewing, and enzymatic research for its applications.	酵素, 醸造, 微生物 Enzyme, Brewing, Microorganism
講師 Lecturer	平山 真 Makoto HIRAYAMA	海洋生物由来生理活性物質の機能解析とその有効利用 Studies on function and application of bioactive compounds from marine organisms.	レクチン, 糖鎖, 抗ウイルス剤 Lectin, Glycan, Anti-virus agent
講師 Lecturer	藤川 愉吉 Yukichi FUJIKAWA	植物におけるストレス応答性酵素の発現と機能に関する生化学的研究 Biochemical studies on gene expression and function of stress-responsive enzymes in higher plants.	酵素, 遺伝子発現, 生化学 Enzyme, Gene expression, Biochemistry

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 食品生命科学プログラム Program of Food and AgriLife Science (3/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
助教 Assistant	生谷 尚士 Masashi IKUTANI	慢性炎症疾患におけるアレルギー関連免疫細胞の役割の 解明 Roles of allergy-related immune cells in chronic inflammatory diseases.	アレルギー性炎症, サイトカイン, ヒ ト疾患動物モデル Allergic inflammation, Cytokine, Animal models for human diseases
助教 Assistant	富永 淳 Jun TOMINAGA	植物の光合成・物質生産機構の解明と作物生産への応用 Studies on mechanisms of photosynthesis and biomass production in land plants, development of techniques for sensing plant response to environment, and its application for crop production.	植物生理学, 作物学, 光合成 Plant Physiology, Crop Science, Photosynthesis
助教 Assistant	松崎 芽衣 Mei MATSUZAKI	鳥類の受精過程を制御するメカニズムの解明, ゲノム編集 鳥類作出技術の開発と応用 Studies on regulation mechanisms of fertilization process in birds, Development of techniques for producing genome- edited birds and their application.	鳥類の生殖, ゲノム編集 Avian reproduction, Genome editing
助教 Assistant	山本 祥也 Yoshinari YAMAMOTO	食品や微生物の免疫調節作用の探索と応用に関する研究 Studies on immune functions of foods and microorganisms, and its application for development of functional foods.	食品免疫学, イムノジェニクス, 健康 Food immunology, immunogenics, health



## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生物資源科学プログラム Program of Bioresource Science (1/2)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	磯部 直樹 Naoki ISOBE	反芻動物乳腺の免疫・内分泌機能 Immunology and endocrinology in mammary gland of ruminants.	乳房炎, 抗菌ペプチド, 自然免疫 Mastitis, Antimicrobial peptide, Innate immunity
教授 Professor	上田 晃弘 Akihiro UEDA	植物の環境ストレス耐性の向上と植物生育促進微生物の利用技術の開発 Improvement of environmental stress tolerance in higher plants and development of utilization technologies of plant growth promoting microbes.	植物栄養学, 環境ストレス, 植物生育促進微生物 Plant nutrition, Environmental stress, Plant growth promoting microbes
教授 Professor	海野 徹也 Tetsuya UMINO	水圏生物の増養殖と保全生態に関する研究 Stock enhancement and conservation resources of aquatic animal.	養殖, 放流, 水圏生物 Aquaculture, Stock enhancement, Aquatic animal
教授 Professor	大塚 攻 Susumu OHTSUKA	海洋無脊椎動物の多様性, 系統分類, 進化, 保全生態に関する研究 Biodiversity, phylogeny, evolutionary biology and conservation ecology of marine invertebrates.	海洋無脊椎動物, 生物多様性, 保全 Marine invertebrate, Biodiversity, Conservation
教授 Professor	小櫃 剛人 Taketo OBITSU	反芻家畜の飼料利用と栄養代謝に関する研究 Nutrition and feed utilization in ruminants.	消化, タンパク質代謝, エネルギー代謝 Digestion, Protein metabolism, Energy metabolism
教授 Professor	小池 一彦 Kazuhiko KOIKE	基礎生産者(微細藻・植物プランクトン)からの沿岸環境(瀬戸内海, サンゴ礁, マングローブ域)の評価 Coastal biological processes of Seto-Inland Sea, coral reefs and mangrove swamps based on primary producers (various microalgae).	微細藻類, 植物プランクトン, 光合成 Microalgae, Phytoplankton, Photosynthesis
教授 Professor	坂井 陽一 Yoichi SAKAI	魚類の社会や繁殖に関する行動生態学的研究 Behavioral ecology of fish reproduction.	社会構造, 繁殖戦略, 野外調査 Social structure, Mating tactics, Field survey
教授 Professor	島田 昌之 Masayuki SHIMADA	生殖機構の分子内分泌学的解析による生殖工学技術の開発に関する研究 The study for understanding molecular and endocrine mechanisms of reproductive functions and developing novel reproductive technologies.	生殖生物学, 分子内分泌学, 繁殖技術 Reproductive biology, Molecular endocrinology, Reproductive technology
教授 Professor	杉野 利久 Toshihisa SUGINO	健全性を担保した乳牛飼養管理の追究 Effects of Feeding management on dairy cattle health and performance.	乳牛, 飼養学, 代謝 Dairy cattle, Nutrition and feeding, Metabolism
教授 Professor	富永 るみ Rumi TOMINAGA	植物の細胞分化と形態形成に関する研究 Studies on cell differentiation and development in plants.	表皮細胞, 根毛, 転写因子 Epidermal cell, Root hair, Transcription factor
教授 Professor	米澤 隆弘 Takahiro YONEZAWA	家畜及び野生動物のゲノム進化的研究 Evolutionary genomics on the domestic and wild animals	系統, 集団動態, 選択 phylogeny, demography, selection
教授 Professor	和崎 淳 Jun WASAKI	根の周りにおける植物-微生物間相互作用と養分動態 Plant-microbial interactions in the vicinity of root and nutrient dynamics.	根圏, 植物生理学, 養分動態 Rhizosphere, Plant physiology, Nutrient dynamics
准教授 Associate Professor	浅岡 聡 Satoshi ASAOKA	分析化学をツールとした水環境の評価・修復に関する研究 Assessment and restoration of aquatic environments using the tools of analytical chemistry.	環境分析化学, 環境修復, 水環境 Environmental analytical chemistry, Environmental remediation, Aquatic environment
准教授 Associate Professor	加藤 亜記 Aki KATO	海藻類の増養殖・保全に関する系統分類および生理生態学的研究 Aquaculture and conservation of algal resources.	石灰藻サンゴモ類, 食用海藻類, 気候変動 Coralline algae, Edible seaweeds, Climate change

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生物資源科学プログラム Program of Bioresource Science (2/2)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	河上 眞一 Shin-ichi KAWAKAMI	家禽を用いた摂食・飲水・攻撃行動等の神経行動学的解析 Research of the brain mechanisms of feeding, drinking, and aggressive behavior in avians.	動物行動, 視床下部, ニワトリ Animal behavior, Hypothalamus, Chicken
准教授 Associate Professor	黒川 勇三 Yuzo KUROKAWA	乳牛の健康的ライフサイクルに関する研究 Research on healthy life cycle of dairy cows.	乳牛, ライフサイクル, 抗酸化能, 乳生産 Dairy cow, Life cycle, Antioxidant capacity, Milk production
准教授 Associate Professor	斉藤 英俊 Hidetoshi SAITOU	河川や浅海域における底生動物の個体群生態に関する研究 Researches on population ecology of macrobenthos in freshwater and shallow seawater zones.	生態学, 底生生物, 外来種 Ecology, Benthos, Alien species
准教授 Associate Professor	富山 毅 Takeshi TOMIYAMA	魚介類の生活史や資源変動に関する研究 Fish life history and stock dynamics.	資源生態, 初期生活史, 沿岸浅海域 Fisheries ecology, Early life history, Estuaries and coastal
准教授 Associate Professor	長岡 俊徳 Toshinori NAGAOKA	植物生産における土壌の機能に関する研究 Studies on soil functions in plant production.	土壌, 養分動態, 有機物 Soil, Nutrient dynamics, Organic matter
准教授 Associate Professor	中村 隼明 Yoshiaki NAKAMURA	生殖細胞の操作技術を基盤としたほ乳類・鳥類の保存 Preservation of mammalian and avian genetic resources on the basis of germ cell manipulation.	生殖細胞, 凍結保存, 遺伝子改変 Germ cells, Cryopreservation, Genetic modification
准教授 Associate Professor	橋本 俊也 Toshiya HASHIMOTO	現場観測や数値モデルなどを用いた, 海洋環境問題の解明 Understanding of the marine environment using the filed observation and numerical simulation model.	海洋環境, データ処理, 生態系モデル Marine environment, Data analysis, Ecosystem model
准教授 Associate Professor	吉田 将之 Masayuki YOSHIDA	こころの生物学的基盤に関する研究 Biological basis of emotion, learning, and mind in animals.	動物心理, 情動, 神経科学 Animal psychology, Emotion, Neuroscience
准教授 Associate Professor	リアオ ローレンス マンザーノ Lawrence M. LIAO	熱帯・亜熱帯域における海藻類の系統分類と生物地理に関する研究 Taxonomy, phylogenetic systematics and biogeography (phytogeography) of marine algae in the tropics and subtropical regions.	藻類学, 陸水学, 博物館学 Algology/Phycology, Limnology, Museum studies
准教授 Associate Professor	若林 香織 Kaori WAKABAYASHI	自然と調和した魚介類増殖技術の開発 Reproduction and growth of marine invertebrates.	種苗生産, 幼生発育, 胚発生 Seed production, Larval development, Embryology
助教 Assistant	梅原 崇 Takashi UMEHARA	代謝, 免疫, 内分泌学的解析による生殖機構の研究を通じた新たな繁殖技術開発に関する研究 The study for developing novel reproductive technology via understanding reproductive mechanism focusing on metabolism, immunology and endocrinology.	生殖生物学, 繁殖技術, 生殖細胞 Reproductive Biology, Reproductive technology, Germ cells
助教 Assistant	菊田 真由実 Mayumi KIKUTA	熱帯地域における作物の生産性向上に向けた栽培学的研究 Agronomic studies for improving crop productivity in the tropics.	作物生産科学, 成長解析, 栽培管理 Crop science, Growth analysis, Cultivation management
助教 Assistant	鈴木 直樹 Naoki SUZUKI	乳牛の乳房内細菌感染制御を通じた食(乳)の安定供給および安全確保 Control of intramammary infection in dairy animals.	乳房炎, 感染制御, 人獣共通感染症 mastitis, infection control, foodborne zoonoses
助教 Assistant	新居 隆浩 Takhiro NII	鳥類の腸内環境に着目した免疫機能および生産機能強化 Enhancement of immune function and productivity to focused on intestinal environment in chickens.	家禽, 腸内環境, 産卵機能 Chicken, Intestinal environment, Egg production
助教 Assistant	バナッキュール サムバン アニーシュ Aneesh PANAKKOOL THAMBAN	海産魚類に寄生する甲殻類の系統分類と生態 Phylogeny and ecology of crustaceans parasitizing marine fish.	寄生性甲殻類, 系統分類, 海産魚 Parasitic crustaceans, phylogeny, marine fish

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生命環境総合科学プログラム Program of Life and Environmental Sciences (1/2)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	石田 敦彦 Atsuhiko ISHIDA	タンパク質リン酸化・脱リン酸化に関わる各種酵素・タンパク質の生化学的研究 Biochemistry on enzymes and proteins which mediate protein phosphorylation and dephosphorylation.	情報伝達, 酵素, 神経 Signal transduction, Enzyme, Neuron
教授 Professor	石原 康宏 Yasuhiro ISHIHARA	グリア細胞の病態生理学的役割の解明 Glial function in health and disease.	神経薬理・毒性学, グリア細胞, モデル動物 Neuropharma-toxicology, Glia, Model animals
教授 Professor	浮穴 和義 Kazuyoshi UKENA	食欲やエネルギー代謝調節に関わる脳内物質の生理作用に関する研究 Study on the physiological functions of neuronal substances regulating appetite and energy homeostasis.	神経内分泌学, 神経ペプチド, 食欲 Neuroendocrinology, Neuropeptide, Appetite
教授 Professor	久我 ゆかり Yukari KUGA	土壌生態系における植物と微生物の共生に関する研究 Plant and microbe symbioses in soil ecosystem.	菌根, 土壌伝染性病害, 細胞-生態機能 Mycorrhiza, Soil-borne disease, Cellular-ecological functions
教授 Professor	佐藤 明子 Akiko SATOH	神経細胞における膜タンパク質の選別輸送システムの研究 The mechanism of the polarized vesicle trafficking in neurons.	ゴルジ体, 視細胞, ショウジョウバエ Golgi units, Photoreceptors, Drosophila melanogaster
教授 Professor	竹田 一彦 Kazuhiko TAKEDA	気水圏における微量物質と微量活性酸素の測定とその環境動態の研究 Environmental dynamics and analysis of trace compounds and reactive oxygen species in the atmosphere and hydrosphere.	環境分析化学, 活性酸素, 汚染物質 Environmental Analytical Chemistry, Reactive Oxygen Species, Trace Pollutants
教授 Professor	中坪 孝之 Takayuki NAKATSUBO	陸域生態系における植物・動物・微生物の役割 Roles of plants, animals and microorganisms in terrestrial ecosystems.	生態系生態学, 植物生態学, 環境保全 Ecosystem ecology, Plant ecology, Environmental coservation
教授 Professor	山田 俊弘 Toshihiro YAMADA	生態学を基礎とした生物を保全する研究 Conservation of organisms based on ecology.	生物多様性保全, 個体群動態, 熱帯林 Biodiversity conservation, Population dynamics, Tropical forests
教授 Professor	和崎 淳 Jun WASAKI	根の周りにおける植物-微生物間相互作用と養分動態 Plant-microbial interactions in the vicinity of root and nutrient dynamics.	根圏, 植物生理学, 養分動態 Rhizosphere, Plant physiology, Nutrient dynamics
教授 Professor	ヴァレヌーヴ 真澄美 Masumi VILLENEUVE	界面の熱力学を基礎とした生体モデル膜と生体関連物質の研究, ドラッグデリバリー関連の基礎研究 Thermodynamic studies on interfacial behavior of bio-related substances using model cell membranes, basic science related to drug delivery.	界面化学, 熱力学, 膜 Interface Chemistry, Thermodynamics, Membranes
准教授 Associate Professor	岩本 洋子 Yoko IWAMOTO	気候に影響を及ぼす大気海洋間の物質循環過程の解明 Biogeochemical cycles between the atmosphere and ocean, and their impact on climate.	エアロゾル, 雲, 生物地球化学 Aerosol, Cloud, Biogeochemistry
准教授 Associate Professor	土谷 彰男 Akio TSUCHIYA	アマゾン熱帯林の消失による気候変化 Climate change caused by deforestation of rainforests in Amazonia.	小気候学, 生物気象学, 年輪気候学 Small climatology, Biometeorology, Dendro-climatology
准教授 Associate Professor	齋藤 光代 Mitsuyo SAITO	陸域～沿岸海域における環境-地質-生態系間の相互作用 Environment-geology-ecosystem interactions in terrestrial to coastal waters.	地下水, 沿岸生態系, 環境地質学 Groundwater, Coastal ecosystems, Environmental geology

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生命環境総合科学プログラム Program of Life and Environmental Sciences (2/2)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	中林 雅 Miyabi NAKABAYASHI	野生動物の行動・生態 Behavior and ecology of wildlife	熱帯雨林, 生態学, 哺乳類学 Tropical rainforest, Ecology, Mammalogy
准教授 Associate Professor	根平 達夫 Tatsuo NEHIRA	生命現象における構造有機化学的研究 Research of structural organic chemistry in life science.	有機分析化学, 天然物化学, 円二色性 Analytical organic chemistry, Natural product chemistry, Circular dichroism
准教授 Associate Professor	彦坂 暁 Akira HIKOSAKA	動物進化のゲノム, 共生, 発生学的研究 Genomic, symbiotic and embryonic studies on metazoan evolution.	動物進化学, 無腸動物, 後生動物 Evolutionary Zoology, Acoelomorpha, Metazoa
講師 Lecturer	戸田 求 Motomu TODA	森林生態系のエネルギー・炭素循環 Energy, water and carbon exchange between atmosphere and forest ecosystems.	フラックス, モデリング, 気候変化 Flux, Modelling, Climate change
助教 Assistant	小林 勇喜 Yuki KOBAYASHI	中枢神経系における包括的な内分泌機構の解明 Elucidation of comprehensive endocrine mechanism in central nervous system.	神経分子生物学, 内分泌学, Gタンパク質共役型受容体 Neuronal molecular biology, Endocrinology, G-protein coupled receptor

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 基礎生物学プログラム Program of Basic Biology (1/2)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	今村 拓也 Takuya IMAMURA	霊長類脳の形態的・機能的発達を支えるエピゲノムプログラムの理解 Understanding epigenomic mechanisms that underlie the development of primate brain.	霊長類, 脳, ノンコーディングRNA primate, brain, non-coding RNA
教授 Professor	荻野 肇 Hajime OGINO	脊椎動物の発生・再生(感覚器と中枢神経系)を支配するゲノム・エピゲノム制御機構の研究 両生類におけるゲノム進化と環境適応についての分子生物学的研究 Genomic and epigenetic regulation of development and regeneration (sensory organs and central nervous system) in vertebrates. Molecular mechanisms of genome evolution and environmental adaptation in amphibians.	発生, 再生, 進化 Development, Regeneration, Evolution
教授 Professor	菊池 裕 Yutaka KIKUCHI	がん微小環境ネットワークの研究 クロマチン立体構造の解析 Studies on tumor microenvironment network. Analysis of Chromatin 3D Structure.	がん微小環境, クロマチン, ロング ノンコーディングRNA Tumor microenvironment, Chromatin, long non-coding RNA
教授 Professor	草場 信 Makoto KUSABA	モデル植物を用いた葉老化制御の分子機構の研究 キク属における分子遺伝学的解研究 キク・コンギク類・ソテツ類, その他の高等植物の遺伝子資源の保存と研究 Molecular mechanism of leaf senescence, Molecular genetics in the genus Chrysanthemum, Genetic resources of chrysanthemum and cycad.	分子遺伝学, 葉老化, キク属 Molecular genetics, Leaf senescence, Chrysanthemum
教授 Professor	千原 崇裕 Takahiro CHIHARA	神経回路の形成, 成熟, そして維持を司る分子基盤の解明。環境(栄養状態, 匂い, ストレスなど)と個体状態(寿命や行動など)の相互作用に関する研究 Molecular mechanism underlying neural network formation, maturation and maintenance. Genetic studies to reveal molecular mechanism for the interaction between environment (nutrition, odor and various stress etc.) and individual condition (longevity and behavior etc.).	神経回路, 嗅覚, 寿命 Neural network, Olfaction, Longevity
教授 Professor	林 利憲 Toshinori HAYASHI	有尾両生類を用いた器官再生, 発生の研究。器官再生における細胞増殖機構の研究 Study of organ regeneration and development using urodele amphibian. Regulatory mechanism of cell proliferation in organ regeneration.	イベリアトゲイモリ, 器官再生, 発生 Iberian ribbed newt, Organ regeneration, Development
教授 Professor	山口 富美夫 Tomio YAMAGUCHI	コケ植物の系統, 分類, 及び生態に関する研究 Phylogeny, taxonomy and ecology of bryophytes.	コケ植物, 分類学, 生態学 Bryophytes, Taxonomy, Ecology
准教授 Associate Professor	井川 武 Takeshi IGAWA	両生類の種分化と環境適応に関わるゲノム進化的研究 Genome evolution underlying speciation and environmental adaptation of amphibians.	両生類, 適応進化, ゲノミクス Amphibians, Adaptive evolution, Genomics
准教授 Associate Professor	植木 龍也 Tatsuya UEKI	海産無脊椎動物における金属イオンの濃縮機構および接着機構の研究 Study on the mechanism of metal ion accumulation and adhesion by marine invertebrate animals.	生理, 金属イオン, 接着 Physiology, Metal ion, Adhesion
准教授 Associate Professor	奥村 美紗子 Misako OKUMURA	光感知メカニズムの解明。表現型可塑性の分子基盤の解明 Molecular mechanism of phototransduction. Molecular mechanism of phenotypic plasticity.	線虫, 光受容体, 表現型可塑性 Nematode, Photoreceptor, Phenotypic plasticity
准教授 Associate Professor	嶋村 正樹 Masaki SHIMAMURA	コケ植物の系統, 分類, 形態及び生態に関する研究 陸上植物の細胞分裂機構の多様性と進化に関する研究 Phylogeny, taxonomy, morphology and ecology of bryophytes. Diversity and evolution of cell division system of land plants.	コケ植物, 植物分類学, 形態学 Bryophytes, Plant taxonomy, Morphology
准教授 Associate Professor	鈴木 厚 Atsushi SUZUKI	両生類をモデルとした脊椎動物の初期発生, 幹細胞の維持と分化, および組織再生の研究 Molecular mechanisms of vertebrate early development, maintenance/differentiation of stem cells, and tissue regeneration.	初期発生, 幹細胞, 再生 Early development, Stem cell, Regeneration

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 基礎生物学プログラム Program of Basic Biology (2/2)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	田川 訓史 Kunifumi TAGAWA	海洋生物半索動物ギボシムシや無腸動物ムチョウズムシを分子発生生物学的・比較ゲノム科学的に解析することで、新口動物ならびに左右相称動物の起源や進化を解明する研究 Study to elucidate the origin and evolution of Deuterostomia and Bilateria by analysing molecular developmental biology and comparative genomics of marine organisms such as Enteropneust hemichordate and Acoel flatworms.	海洋生物, エヴォデヴオ, 比較ゲノム Marine Organisms, EvoDevo, Comparative genomics
准教授 Associate Professor	坪田 博美 Hiromi TSUBOTA	植物や植生に関する島嶼生物学的・植物地理学的・植物社会学的・分子系統学的研究 Studies of plants and vegetation focusing on the ecology, evolutionary biology, biogeography, phytosociology, and conservation of biotas on islands surrounded by ocean and its related area.	生物多様性, 植物地理, 分子系統学 Biodiversity, Phytogeography, Molecular phylogeny
准教授 Associate Professor	濱生 こずえ Kozue HAMAO	動物細胞の細胞骨格制御と細胞分裂の分子機構に関する研究 Molecular mechanisms of cytoskeletal regulation and cell division in animal cells.	細胞骨格, 細胞分裂, 細胞質分裂 Cytoskeleton, Mitosis, Cytokinesis
准教授 Associate Professor	古野 伸明 Nobuaki FURUNO	両生類の卵形成(卵分化)の分子機構の解析, 卵成熟や初期発生の特殊な細胞周期の機構解析, 再生・変態(特に四肢の形成)についての分子機構の解析 Molecular mechanism of oogenesis and analyses of the unique cell cycle mechanism of oocyte maturation(meiosis) and early development. Study of the molecular mechanism of regeneration and development of the limb formation.	卵形成, 卵成熟, 細胞周期, 変態, 四肢形成 Oogenesis, Oocyte maturation, Cell cycle, Morphogenesis, Limb development
准教授 Associate Professor	三浦 郁夫 Ikuo MIURA	両生類における進化遺伝学的研究(ゲノム進化・形質進化・種多様性)および性と生殖の研究 Studies on Evolutionary Genetics of amphibians (genome and phenotypic evolution and biodiversity), and sex and reproduction.	系統進化, 性, ゲノム認識 Phyletic evolution, Sex, Genome recognition
講師 Lecturer	守口 和基 Kazuki MORIGUCHI	バクテリア-真核生物間相互作用のメカニズムについての研究 遺伝子の水平伝播メカニズムと, 遺伝子の拡散と多様性についての研究 Molecular mechanisms of bacteria-eukaryotes interactions. Molecular mechanisms at horizontal gene transfer, and the spread and diversity of genes caused by it.	バクテリア, 水平伝播, 相互作用, 遺伝子導入 Bacteria, Horizontal gene transfer, Interaction, Gene introduction
助教 Assistant	高橋 治子 Haruko TAKAHASHI	生体外(in vitro)3次元のがん組織モデルおよび画像・オミクスデータを用いた統合的解析による, がん悪性化メカニズムの解明と治療基盤応用 Analysis of the malignant mechanism of cancer and its therapeutic application by integrated analysis using 3D in vitro cancer tissue models, images and omics data.	3次元in vitroモデル, がん微小環境, 抗がん効果 3D in vitro model, Tumor microenvironment, Anti-cancer
助教 Assistant	信澤 岳 Takashi NOBUSAWA	高等植物における発生制御機構の解明を目指した基礎研究, ならびに植物の脂質代謝に着目した研究 Analysis of the mechanisms of plant development and growth regulation. Study on lipid metabolism in plants.	高等植物, 器官発生, 老化, 脂質代謝 Higher plants, Organ development, Senescence, Lipid metabolism
助教 Assistant	深澤 壽太郎 Jutarou FUKAZAWA	植物ホルモンによる成長制御の分子機構, 植物ホルモンの生合成, 信号伝達及びクロストークの分子機構 Molecular mechanisms of plant growth and development via plant hormone, Molecular mechanisms of plant hormone biosynthesis, signaling and crosstalk.	植物ホルモン, 転写制御, 信号伝達 Plant hormone, Transcriptional regulation, Signal transduction

## 大学院統合生命科学研究所主指導教員一覧表 List of Academic Supervisors

### 数理生命科学プログラム Program of Mathematical and Life Sciences (1/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	飯間 信 Makoto IIMA	生物運動などに関係する、さまざまな複雑流れやそのモデルに対する数理的観点からの理論および実験研究 Theoretical and experimental study of complex flows and models such as swimming/flying problems based on mathematical science.	流体力学, 生物の泳ぎ・飛翔, 渦運動 Fluid mechanics, Swimming/Flying, Vortex dynamics
教授 Professor	泉 俊輔 Shunsuke IZUMI	生体高分子分析のためのMALDIマトリックスの開発とSALDI-IMS法を用いた化学忌避物質の探索 Development of MALDI matrix for protein analysis and search for chemical repellents using SALDI-IMS method.	マルディー マトリックス, プロテオーム解析, SALDI-IMS法 MALDI matrix, Proteomics, SALDI-IMS method
教授 Professor	坂本 敦 Atsushi SAKAMOTO	(1) 植物の環境応答とストレス適応の分子機構; (2) 代謝可塑性を基軸とする植物の成長生存戦略; (3) 植物機能の農業・産業利用に向けた基礎及び応用研究 (ストレス耐性・頑健性強化, 藻類バイオ燃料開発など) (1) Molecular mechanisms for stress responses and adaptation in plants; (2) Metabolic plasticity-based strategies for plant growth and survival; (3) Basic and applied research on plant function towards its agricultural and industrial applications (improved performance under stress; algal bioenergy innovation, etc.).	植物分子機能, ストレス応答, 代謝・分子生理 Plant molecular function, Stress response, Metabolism and molecular physiology
教授 Professor	楯 真一 Shin-ichi TATE	主としてNMRを用いた天然変性タンパク質の機能制御機構の解明. 天然変性領域を介した細胞内ドロップレット形成制御機構の解明. 核内クロマチンの立体構造解析 Exploring functional mechanisms of intrinsically disordered proteins mainly with NMR. Studies on protein droplet formation within cells. Three-dimensional structure analysis of chromatin inside the cell nucleus.	NMR, 天然変性タンパク質, 核内クロマチン立体構造 NMR, Intrinsically disordered proteins, The three-dimensional structure of chromatin in a cell nucleus
教授 Professor	中田 聡 Satoshi NAKATA	化学振動反応, リズム・パターン形成, 自己組織化, 非線形現象 (同期・分岐・履歴等), 自己駆動体等, 非平衡下で時空間発展する現象に関する研究 Research on phenomena which exhibit spatio-temporal development under nonequilibrium conditions, e.g., chemical oscillation, rhythm and pattern formation, self-organization, nonlinear phenomena (synchronization, bifurcation, hysteresis), and self-propulsion.	自己組織化, パターン形成, 振動現象 Self-organization, Pattern formation, Oscillation
教授 Professor	藤本 仰一 Koichi Fujimoto	進化する生命体の理論研究 (数理モデルと実データ解析). 主な対象は, 細胞-多細胞-器官-個体-社会の多階層にわたる動植物・微生物の発生・進化・共存の数理. 複雑なシステムを理解し予測する数理科学. Theoretical study (mathematical modeling and data analysis) of evolving multi-level dynamics (gene expression, shape, and behaviors) in plants, animals, and microbes.	理論生物学, 複雑系, 生物物理学, 進化, 多様性, 多階層 Theoretical Biology, Complex systems, Biophysics, Evolution, Diversity, Multi-scales
教授 Professor	本田 直樹 Naoki HONDA	様々な生命現象を対象とした, データ駆動的数理モデリング. 機械学習 (統計的学習理論) によるデータ解析法の開発. 遺伝子発現・細胞骨格・免疫・発生・神経回路・意思決定・情動/葛藤 Data-driven mathematical modeling of various biological phenomena. Development of data analysis methods based on machine learning (statistical learning theory). Gene expression, cytoskeleton, immune systems, embryonic development, neural circuits, decision making, emotion/conflict.	データ駆動生物学, 理論生物学, 数理モデリング, 機械学習 Data-driven biology, Theoretical biology, Mathematical modeling, Machine learning
教授 Professor	山本 卓 Takashi YAMAMOTO	様々な生物に利用可能なゲノム編集技術の開発 疾患モデル作製技術開発 微細藻類でのバイオ燃料開発. 動物発生の分子機構の解析 Development of genome editing technology for various organisms. Generation of disease model cells and animals. Development of biofuel using microalgae. Analysis of molecular mechanisms during animal development.	ゲノム編集, 疾患モデル, 動物発生 Genome editing, Disease model, Animal development
特任教授 Professor (Sp.Appt.)	坊農 秀雅 Hidemasa BONO	ゲノム編集データ解析基盤技術の開発とバイオインフォマティクスによる遺伝子機能解析 Development of database technologies for genome editing and functional genomics by bioinformatic approach.	ゲノム編集, バイオインフォマティクス, 遺伝子機能解析 Genome editing, Bioinformatics, Functional genomics
客員教授 Visiting Professor	渡邊 朋信 Tomonobu M WATANABE	生命現象を定量する光学計測技術の開発とそれらを用いた幹細胞研究および医学・産業応用 Stem cell researches with development of optical measurement technologies to quantify biological phenomena, and medical/industrial applications of them.	光学顕微鏡, 分光学, 生物物理学, 幹細胞 Optical spetcroscopy, quantitative biology, biophysics, stem cell

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 数理生命科学プログラム Program of Mathematical and Life Sciences (2/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	栗津 暁紀 Akinori AWAZU	分子・細胞の理論生物学:ゲノム動態と遺伝子制御, 発生と形態形成の理論・実験研究 Theoretical molecular and cell biology : Theoretical and experimental studies of genome dynamics, gene regulation, development, and morphogenesis.	現象論的数理モデリング, 実験データ駆動型モデリング, モデリング志向型実験 Phenomenal mathematical modeling, Experiment data driven modeling, Experiments for
准教授 Associate Professor	大西 勇 Isamu OHNISHI	私の研究室では, "広い意味の数学"としての数理科学の中でも, 非線形生命数学の研究室として, 生命現象や関連の非線形現象について, 数理科学の立場から, 学び, 研究する。広い意味の数学とは, "物事の動的な数理モデリングを行って, それを元に数理的な議論(主に, システム(系)の数理科学的な構造と機能の関係に注目し, 数理的な考察を入れる)を行うことで, 元の事物への解釈や説明, 時には, パラドキシカルな結論を導くような活動を含んでいる。 In my laboratory, we study and research mathematical science of Life phenomena and, moreover, nonlinear phenomena related to Life activity as a laboratory of Nonlinear mathematical Science related to Life, which is among mathematical science as "mathematics in a broad sense". Mathematics in a broad sense means "to make dynamical mathematical modeling of phenomena, and based on that, mathematical discussions (mainly focusing on the relationship between the mathematical scientific structures and their functions of systems. It includes activities that lead to interpretations and explanations of the original things, sometimes paradoxical conclusions.	非線形生命数学 Nonlinear mathematical Science related to Life
准教授 Associate Professor	片柳 克夫 Katsuo KATAYANAGI	蛋白質立体構造の網羅的解析(パーキンソン病や胃がん関連の蛋白質, DNA修復酵素, 黄色ブドウ球菌由来の毒素蛋白質, 植物由来蛋白質, 抗HIV活性の海藻由来レクチンなど), および人工蛋白質のX線構造解析による分子進化の解明 Three dimensional structure and function of Protein by protein X-ray-crystallography, and, Molecular evolution of protein derived from X-ray structure of artificial proteins.	タンパク質立体構造, X線結晶学, 放射光 3D structure of protein, X-ray crystallography, Synchrotron radiation
准教授 Associate Professor	斉藤 稔 Nen Saito	細胞内ダイナミクスや進化ダイナミクスなど様々な生命現象を対象に, 数理モデル解析や大規模数値計算, 機械学習解析などを行い, 生物物理・数理生物学などの観点から理論的な研究を行う。 From the viewpoints of biophysics and mathematical biology, we aim to understand various biological phenomena by performing mathematical modeling, large-scale numerical computation and machine learning analysis, etc.	数理モデリング, 生物物理学, 理論生物学 mathematical modeling, biophysics, theoretical biology
准教授 Associate Professor	坂本 尚昭 Naoaki SAKAMOTO	ウニの発生をモデルとして, 形態形成遺伝子の転写制御, 発生過程における遺伝子・クロマチン・染色体の動態, インスレーターの作用機構について研究 Research for transcriptional regulation of morphogenetic genes, nuclear dynamics of gene, chromatin and chromosome during development, and mechanism of insulator activity, using the sea urchin development as a model.	ウニの発生, 転写, 核内動態 Sea urchin development, Transcription, Nuclear dynamics
教授 Professor	佐久間 哲史 Tetsushi SAKUMA	哺乳動物培養細胞を用いたゲノム編集の新規技術開発, ゲノム編集を応用した人工転写調節ならびにエピゲノム編集技術の開発と応用 Development of new technology of genome editing using mammalian cultured cells; Development and application of artificial transcriptional control and epigenome editing systems repurposed from genome editing.	ゲノム編集, エピゲノム編集, システムゲノム科学 Genome editing, Epigenome editing, Systems genomics
准教授 Associate Professor	島田 裕士 Hiroshi SHIMADA	光合成機能の解析と, 遺伝子改変・ケミカルバイオロジーによる光合成効率向上技術の開発 葉緑体バイオジェネシスの研究 Analysis of photosynthesis, and improving photosynthetic efficiency for greater yield by gene modification and chemical biology. Analysis of chloroplast biogenesis.	光合成, 葉緑体, ケミカルバイオロジー Photosynthesis, Chloroplast, Chemical biology



## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 数理生命科学プログラム Program of Mathematical and Life Sciences (3/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	杉 拓磨 Takuma SUGI	個と集団の行動を支配する物理則の研究, 神経ネットワーク老化機構の研究 Behavioral systems biology and neural network aging.	行動, 神経ネットワーク老化, 光計測技術開発 Behavior, Imaging, Neural network aging
准教授 Associate Professor	藤原 好恒 Yoshihisa FUJIWARA	光・磁気・重力(微小重力と過重力)の各環境因子が単独或いは協同して麹菌などの生物の動態や反応に及ぼす影響の研究 それら環境因子による化学反応・構造・機能制御への影響, 機能性材料・ナノ材料の高品位化の研究 Effects of environmental factors of light, magnetic field, and gravity (microgravity and hypergravity) on biological phenomena and reactions of micro-organism such as <i>Aspergillus oryzae</i> . Influence of their factors on reactions, micro-structure, and function of chemical functional nano-materials.	光・磁場・重力の効果, 光化学, 麹菌 Effects of light, Magnetic field and gravity, Photochemistry, <i>Aspergillus oryzae</i>
助教 Assistant	藤井 雅史 Masashi FUJII	理論生物学: 生体内の分子の動力学と化学反応の理論, 生体内のシステム生物学と統計データ解析 Theoretical Biology: e.g. molecular dynamics and theory of biochemical reactions, system biology and statistical analysis.	現象論的モデル, 分子動力学モデル, 生物学の数理 Phenomenological modeling, molecular dynamics model, mathematics and physics of biology

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生命医科学プログラム Program of Biomedical Science (1/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 Professor	石田 敦彦 Atsuhiko ISHIDA	タンパク質リン酸化・脱リン酸化に関わる各種酵素・タンパク質の生化学的研究 Biochemistry on enzymes and proteins which mediate protein phosphorylation and dephosphorylation.	情報伝達, 酵素, 神経 Signal transduction, Enzyme, Neuron
教授 Professor	石原 康宏 Yasuhiro ISHIHARA	グリア細胞に着目した神経薬理学・神経毒性学研究: 化学物質(環境化学物質やPM2.5など)曝露による神経系疾患の修飾と不飽和脂肪酸(DHA)の障害抑制効果 Neuropharmacology and neurotoxicology on glial cells: Modulation of neurological disorders by chemical exposure (i.e. environmental chemicals and PM2.5) and neuroprotective action of unsaturated fatty acid such as DHA.	グリア細胞, 有害化学物質, 神経保護 Glial cells, Harmful chemicals, Neuroprotection
教授 Professor	今村 拓也 Takuya IMAMURA	霊長類脳の形態的・機能的発達を支えるエピゲノムプログラムの理解 Understanding epigenomic mechanisms that underlie the development of primate brain.	霊長類, 脳, ノンコーディングRNA primate, brain, non-coding RNA
教授 Professor	浮穴 和義 Kazuyoshi UKENA	食欲やエネルギー代謝調節に関わる脳内物質の生理作用に関する研究 Study on the physiological functions of neuronal substances regulating appetite and energy homeostasis.	食欲, 肥満, 代謝疾患 Appetite, Obesity, Metabolic disease
教授 Professor	荻野 肇 Hajime OGINO	脊椎動物の発生・再生を支配するゲノム・エピゲノム制御機構の研究 両生類におけるゲノム進化と環境適応についての分子生物学的研究 Genomic and epigenetic regulation of development and regeneration in vertebrates. Molecular mechanisms of genome evolution and environmental adaptation in amphibians.	発生, 再生, 進化 Development, Regeneration, Evolution
教授 Professor	菊池 裕 Yutaka KIKUCHI	運動器構築と破綻の分子機構 Construction of musculoskeletal systems and molecular mechanisms of their breakdown.	運動器 Musculoskeletal systems
教授 Professor	佐久間 哲史 Tetsushi SAKUMA	哺乳動物培養細胞を用いたゲノム編集の新規技術開発, ゲノム編集を応用した人工転写調節ならびにエピゲノム編集技術の開発と応用 Development of new technology of genome editing using mammalian cultured cells; Development and application of artificial transcriptional control and epigenome editing systems repurposed from genome editing.	ゲノム編集, エピゲノム編集, システムゲノム科学 Genome editing, Epigenome editing, Systems genomics
教授 Professor	楯 真一 Shinichi TATE	天然変性タンパク質の構造ダイナミクスと機能制御の相関研究 Exploring the structure dynamics and functions associated with intrinsically disordered proteins (IDPs).	NMR, 天然変性タンパク質, タンパク構造ダイナミクス NMR, Intrinsically disordered protein, Protein structure dynamics
教授 Professor	千原 崇裕 Takahiro CHIHARA	神経回路の形成, 成熟, そして維持を司る分子基盤の解明 環境(栄養状態, 匂い, ストレスなど)と個体生理状態(寿命や行動など)の相互作用に関する研究 Molecular mechanism underlying neural network formation, maturation and maintenance. Genetic studies to reveal molecular mechanism for the interaction between environment (nutrition, odor and various stresses etc.) and physiological condition (longevity and behavior etc.).	神経回路, 嗅覚, 寿命 Neural network, Olfaction, Longevity
教授 Professor	林 利憲 Toshinori HAYASHI	有尾両生類を用いた器官再生, 発生の研究 器官再生における細胞増殖機構の研究 Study of organ regeneration and development using urodele amphibian. Regulatory mechanism of cell proliferation in organ regeneration.	イベリアアゲイモリ, 器官再生, 発生 Iberian ribbed newt, Organ regeneration, Development
教授 Professor	山本 卓 Takashi YAMAMOTO	ゲノム編集技術の開発と疾患モデル細胞・動物作製に関する研究 Development of genome editing technology and generation of disease model cells and animals.	ゲノム編集, 疾患モデル Genome editing, Disease model
特任教授 Professor (Sp.Appt.)	坊農 秀雅 Hidemasa BONO	ゲノム編集データ解析基盤技術の開発とバイオインフォマティクスによる遺伝子機能解析 Development of database technologies for genome editing and functional genomics by bioinformatic approach.	ゲノム編集, バイオインフォマティクス, 遺伝子機能解析 Genome editing, Bioinformatics, Functional genomics

## 大学院統合生命科学研究科主指導教員一覧表 List of Academic Supervisors

### 生命医科学プログラム Program of Biomedical Science (2/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
客員教授 Visiting Professor	渡邊 朋信 Tomonobu M WATANABE	生命現象を定量する光学計測技術の開発とそれらを用いた幹細胞研究および医学・産業応用 Stem cell researches with development of optical measurement technologies to quantify biological phenomena, and medical/industrial applications of them.	光学顕微鏡, 分光学, 生物物理学, 幹細胞 Optical spetctroscopy, quantitative biology, biophysics, stem cell
准教授 Associate Professor	井川 武 Takeshi IGAWA	両生類の種分化と環境適応に関わるゲノム進化学的研究 Genome evolution underlying speciation and environmental adaptation of amphibians.	両生類, 適応進化, ゲノミクス Amphibians, Adaptive evolution, Genomics
准教授 Associate Professor	上野 勝 Masaru UENO	真核生物のテロメア維持機構・DNA修復機構の解明と, その抗老化・抗癌関連医薬品への応用研究 Study on molecular mechanisms of telomere maintenance and DNA repair and their applications for development of anti-cancer and anti-ageing agents.	テロメア, がん, 老化 Telomere, Cancer, Aging
准教授 Associate Professor	奥村 美紗子 Misako OKUMURA	光感知メカニズムの解明. 表現型可塑性の分子基盤の解明 Molecular mechanism of phototransduction. Molecular mechanism of phenotypic plasticity.	線虫, 光受容体, 表現型可塑性 Nematode, Photoreceptor, Phenotypic plasticity
准教授 Associate Professor	久米 一規 Kazunori KUME	細胞の機能を保証する細胞構造(オルガネラや細胞極性など)の制御機構に関する研究 Study on the control mechanisms of cell structure (organelles and cell polarity etc.) which ensures cellular functions.	細胞構造, オルガネラ, 細胞極性 Cell structure, Organelle, Cell polarity
准教授 Associate Professor	坂本 尚昭 Naooki SAKAMOTO	ウニの発生をモデルとして, 形態形成遺伝子の転写制御, 発生過程における遺伝子・クロマチン・染色体の動態, インスレーターの作用機構について研究 Research for transcriptional regulation of morphogenetic genes, nuclear dynamics of gene, chromatin and chromosome during development, and mechanism of insulator activity, using the sea urchin development as a model.	ウニの発生, 転写, 核内動態 Sea urchin development, Transcription, Nuclear dynamics
准教授 Associate Professor	杉 拓磨 Takuma SUGI	個と集団の行動を支配する物理則の研究, 神経ネットワーク老化機構の研究 Behavioral systems biology and neural network aging.	行動, 神経ネットワーク老化, 光計測技術開発, Behavior, Imaging, Neural network aging
准教授 Associate Professor	濱生 こずえ Kozue HAMAO	動物細胞の細胞骨格制御と細胞分裂の分子機構に関する研究 Molecular mechanisms of cytoskeletal regulation and cell division in animal cells.	細胞骨格, 細胞分裂, 細胞質分裂 Cytoskeleton, Mitosis, Cytokinesis
准教授 Associate Professor	吉田 将之 Masayuki YOSHIDA	こころの生物学的基盤に関する研究 Biological basis of emotion, learning, and mind in animals.	動物心理, 情動, 神経科学 Animal psychology, Emotion, Neuroscience

## 大学院統合生命科学研究所主指導教員一覧表 List of Academic Supervisors

### 生命医科学プログラム Program of Biomedical Science (3/3)

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
助教 Assistant	高橋 治子 Haruko TAKAHASHI	生体外(in vitro)3次元がん組織モデルおよび画像・オミックスデータを用いた統合的解析による, がん悪性化メカニズムの解明と治療基盤応用 Analysis of the malignant mechanism of cancer and its therapeutic application by integrated analysis using 3D in vitro cancer tissue models, images and omics data.	3次元in vitroモデル, がん微小環境, 抗がん効果 3D in vitro model, Tumor microenvironment, Anti-cancer
助教 Assistant	湯川 格史 Masashi YUKAWA	ゲノムの安定性保持に必須な微小管形成機構に関する研究と有用生理活性物質の開発 Our research focuses on the molecular mechanisms to establish and maintain a bipolar spindle structure, which is essential for proper chromosome segregation. We also aim to implement our findings towards the development of novel drugs and therapeutic technologies by which to build and sustain healthy aging society.	細胞周期, 染色体分配, 細胞骨格 Cell cycle, Chromosome segregation, Cytoskeleton