2027 Academic Years

Graduate School of Integrated Sciences for Life

Hiroshima University

Application Guidelines
General Selection

Doctoral Course

（April 2027 Admissions）

November 2026

Hiroshima University

Admissions Policy <Doctoral Course>

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

Students who:

1. Have strong volition to do research, and who wish to create new science that integrates and links different fields without being constrained by conventional frameworks of research fields in the areas of study related to biology and life science;
2. Wish to develop deep expertise and a broad and interdisciplinary perspective along with a broad general education, to acquire international communication skills, and to play an active role both in the domestic and international arenas as a member or leader of an interdisciplinary and field integration-type problem-solving team; and
3. Wish to belong to several research environments both in Japan and overseas, and to create "science that can guide sustainable development" after acquiring their original problem-searching and problem-solving abilities supported by related expertise and interdisciplinary perspective as well as practical capabilities in society by gaining experiences in the real world.

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, etc.

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 deep knowledge in their specialized fields, and who have an ambition to also acquire knowledge in fields other than their specialized fields, and to develop interdisciplinary research;
2. Are motivated to take up a challenge for a new scientific and technological field to which different fields, such as material science, are integrated based on frontier life sciences;
3. Have a logical thinking ability and communication skills to describe their cutting-edge research in easy-to-understand words so that it is understood by society;
4. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding their command of English; and
5. Have acquired common sense as a working member of society, and ethical standards as a researcher or a highly specialized engineer.

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, etc.

[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 advanced theories and methods, as well as research and application deployment abilities to understand and utilize biological functions from the perspective of molecules and cells;
2. Have a high interest in finding and solving problems from a scientific, social, and international perspective regarding creatures' diverse functions and the advanced use of food resources;
3. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding their command of English;
4. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding knowledge, attitude, and skills in the specialized fields of their choice; and
5. Have acquired common sense as a working member of society, and ethical standards as a researcher or a highly specialized engineer.

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, etc.

[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 systematically understood life phenomena related to the production and use of biological resources from the molecular level to ecosystems;
2. Have acquired broad expertise and research skills regarding the sustainable production and utilization of biological resources in both land and water zones, and who are equipped with abilities to understand and solve various problems in related fields from regional to international scope;
3. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding their command of English;
4. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding knowledge, attitude, and skills in the specialized fields of their choice; and
5. Have acquired common sense as a working member of society, and ethical standards as a researcher or a highly specialized engineer.

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, etc.

[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, expertise and skills for a specific field, and learn the theories and methods of understanding and utilizing these abilities from a comprehensive perspective;
2. Wish to understand various problems existing in life science and environmental science, and to solve them professionally, immediately, and internationally;
3. Wish to play an active role independently as a generalist who also covers areas outside life science and environmental science without being constrained by their own expertise;
4. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding their command of English;
5. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding knowledge, attitude, and skills in the specialized fields of their choice; and
6. Have acquired common sense as a working member of society, and ethical standards as a researcher or a highly specialized engineer.

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, etc.

[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 specialized knowledge, skills, and research abilities in biology at molecular, cellular, individual, ecological, and evolutionary levels that should have been acquired in the related Master's Programs;
2. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding their command of English; and
3. Have acquired common sense as a working member of society, and ethical standards as a researcher or a highly specialized engineer.

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, etc.

[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 and application abilities in the fields of mathematics, physics, chemistry, and biology;
2. Have an ambition to open up a new research field in mathematical science, molecular science, and life science fields as well as integrated fields;
3. Have acquired abilities at the level of completing a graduate school's Master's Program or higher regarding their command of English; and
4. Have acquired common sense as a working member of society, and ethical standards as a researcher or a highly specialized engineer.

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, etc.

[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 abilities at the level of completing a graduate school's Master's Program or higher regarding their command of English; and
4. Have acquired common sense as a working member of society, and ethical standards as a researcher or a highly specialized engineer.

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, etc.

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The Graduate School of Integrated Sciences for Life, Hiroshima University, is recruiting students for the Doctoral Course in the Department of Integrated Science for Life to be enrolled in April 2027.

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

<table>
<tr><th></th><th>Program</th><th>Number of students to be recruited</th><th>Examination Date</th><th>Examination Venue</th><th>Inquiries・Submission addresses</th></tr>
<tr><td rowspan="8">Department of Integrated Sciences for Life</td><td>Biotechnology</td><td rowspan="8">64</td><td rowspan="8">One day between January 12 and February 2, 2027

* Please refer to the "Note" below.</td><td rowspan="8">*Please refer to the "Note" below.</td><td>Support Branch Office for the fields of Science, Hiroshima University
1-3-1, Kagamiyama, Higashi-Hiroshima, 739-8530
TEL: (082) 424-7008, 7009</td></tr>
<tr><td>Food and AgriLife Science</td><td rowspan="2">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</td></tr>
<tr><td>Bioresource Science</td></tr>
<tr><td>Life and Environmental Sciences</td><td>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</td></tr>
<tr><td>Basic Biology</td><td rowspan="3">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</td></tr>
<tr><td>Mathematical and Life Sciences</td></tr>
<tr><td>Biomedical Science</td></tr>
</table>

Note : Examination date, time, and venue will be notified individually later.

2. Applicant Eligibility

Applicants must satisfy one of the following qualifications or be expected to receive any one of the following qualifications by March 31, 2027. Applicants shall be residing in Japan and must make an affirmation of admission when applicants will pass the entrance examination.

(1) Have received a master's degree or profession's degree in Japanese institutions;
(2) Have received a master's degree or a degree equivalent to profession's degree outside Japan;
(3) Have completed class subjects in Japan conducted by a foreign school by correspondence education and been conferred a degree equivalent to a master's degree or a professional degree;
(4) Have completed a course in Japan at an educational facility positioned as a facility that has the curriculum of a foreign graduate school under said foreign country's school education system and designated separately by the Minister of Education, Culture, Sports, Science and Technology, and has been conferred a degree equivalent to a master's degree or a professional degree.
(5) Have completed a course at the United Nations University, established based on the December 11, 1972 United Nations General Assembly resolution stipulated in Article 1, Paragraph 2 of the Act on Special Measures (Act No. 72 of 1976) incidental to enforcement of the agreement between the United Nations and Japan regarding the headquarters of the United Nations University (hereafter, United Nations University), and has been conferred a degree equivalent to a master's degree.
(6) Have completed a curriculum at a foreign school, an educational facility designated in Item 4, or the United Nations University, has passed an equivalent to the examination and screening stipulated in Article 16-2 of the Standards for Establishment of Graduate Schools, and is recognized as having academic ability equal to, or greater than, a person possessing a master's degree.

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 a master's course at a university and have been conferred a degree equivalent to a master's degree.

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 January 4, 2027 to January 8, 2027 (No later than 17:00 (JST))

(3) Online application

◆Inquiries regarding entrance examination system and UCARO

Helpdesk (*Japanese speaking only)

Inquires accepted from 10:00 am to 6:00 pm

(Except from December 30 to January 3)

TEL: 03-6634-6494

●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 Password

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 Password.

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

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

* Your personal information registered through the online application system will be used for the following purposes. Therefore, please enter accurate information.
  1. Carry out entrance examinations and screening.
  2. Notify and send the screening results.
  3. Send documents for enrollment procedures to successful applicants.
  4. Send information before and after admission.
  5. Create statistical data on entrance examinations.
  6. Create student registration data and Student ID-Cards.
  7. Receive application fees.
  8. Check the access status to the Service.

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)

Select the payment method for the application fee from among the following options.
For applications from outside Japan, only credit card payments can be accepted.

- Credit Card (Available both within and outside Japan)
- Convenience Store, Banking institution ATM【Pay-easy】,and Internet banking (NOT available from outside Japan)

(Note)

- **In addition to the application 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 application fee

The application fee, once paid, will not be refunded for any reason.
However, in cases (1) and (2) below, the application 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 Step 8 by postal mail by Friday, February 26, 2027.
(1) If the application documents have not been submitted, or if they have not been accepted
(2) If duplicate payments of the entrance application 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. You can also check the number in the registration completion mail. 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 Friday, January 8, 2027. Should the application documents fail to reach the office by that date, however, those postmarked on or before Wednesday, January 6, 2027 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) Examination Number and Examination Card

【Program of Basic Biology, Program of Mathematical and Life Sciences, and Program of Biomedical Science】
After our graduate school has received the application documents and confirmed that the application eligibility has been fulfilled, you will be able to check your examinee's number, the Examination Card, and examination guide on the UCARO website after 12:00 on January 13, 2027 (planned).
Please be sure to print out the Examination Card from the UCARO and bring it on the day of the examination.

【Program of Biotechnology, Program of Food and AgriLife Science, Program of Bioresource Science, and Program of Life and Environmental Sciences】
The relevant department will send the Examination Card, and bring it on the day of the examination.

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

A	Academic Transcripts	Should be prepared and signed by the president/dean of the university from which you have graduated and sealed securely.
B	Certificate of (Expected) Graduation of Master's course	Should be prepared and signed by the president/dean of the university from which you have graduated, or expect to graduate *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)" (http://www.chsi.com.cn/xlcx/bgys.jsp), 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)". ・Graduates: Online Verification Report of Higher Education Qualification Certificate (教育部学历证书电子注册备案表) ・Expected Graduates: Online Verification Report of Student Record (教育部学籍在线验证报告) 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.
C	Curriculum vitae	(Use the official form.) All the schools/educational institutions you have enrolled in shall be written.
D	Summary of Master's Thesis and/or Research Highlights	(Use the specified forms.) Applicants who have completed (are expected to complete) master's course should submit Summary of Master's Thesis. Applicants who have research records after completing master's course should also submit Research Highlights together. Applicants who had not completed master's course should submit Research Highlights. To be approximately 1,000 words in length.
E	Detailed Descriptions of Research Highlights	(Use the specified forms.) Describe your research achievement such as your academic papers, books/journals, if any, and attach copies of your academic papers.
F	Research Plan	(Use the official form) Submit the research plan in doctoral course written in about 400 English words.
G	Copy of Residence Card	【Only for International applicants residing in Japan】 If your address is written on the back side of the card, make a two-sided copy.
H	Return Envelope	【This is required for applicants to the Program of Biotechnology, the Program of Food and AgriLife Science, the Program of Bioresource Science, and the Program of Life and Environmental Sciences】 A self-addressed standard-size envelope with appropriate postage (stamps)

(6) Address for submission of application documents:

Please see page 5 of these application guidelines.

(7) 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 November 30, 2026 to December 2, 2026

(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
One day between January 12 and February 2, 2027 ※	Interview (about 60 minutes/person)	TBD*

*** Examination date, time, and venue will be notified individually later.**

5. Screening Methods

Screening will be based on the results of an examination (interview).

Your academic transcripts, summary of master's thesis / research highlights, and research plan will be reflected in the interview.

6. Announcement of Successful Applicants

12:00 (expected), Friday, February 19, 2027

(1) The Graduate School will send letters of acceptance to successful applicants. If you do not receive the letter by Friday, February 26 even if your ID number is on the list of successful applicants, please inquire at each support office (page 5).

(2) Successful applicants' ID numbers will be released on the website of the Graduate School of Integrated Sciences for Life, Hiroshima University. Please note that the announcement of the website will be unofficial. Official announcement will be made via the letters of acceptance. The office will not accept inquiries by phone regarding the results of the examinations.

7. Enrollment Fee and Tuition Fee

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 2026. If they are changed, students must pay the revised amount.

(3) Details of enrollment procedures, which will be conducted in early-March 2027, will be notified later to successful applicants.

8. Payment of Examination Fee and Enrollment Fee

From – To --	Examination Fee	Enrollment Fee
From Master's course To Doctoral course at Hiroshima University	×	×
From Master's course of another university To Doctoral course at Hiroshima University	○	○
Entering the Doctoral course after completing a Master's course of the Graduate School, Hiroshima University but with a time interruption in between	○	○

(Note) ○: Necessary ×: Unnecessary

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 110 yen stamp.

(2) Complete the examination information disclosure application form, and send by post the documents listed below between April 1 and May 31, 2027(postmarked) to the address below.
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 460 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 has launched the Frontier Development Program for Genome Editing which was selected as a WISE program by MEXT in 2018. This program includes a Life Science Course (5-year curriculum) and a Medical Course (4-year curriculum), providing students with opportunities to acquire basic and applied knowledge and learn genome editing techniques. The program enables students to master genome editing technologies and apply them directly to the industry.

Life Science Course (3-year curriculum *Transfer admission to 3rd year)

Although the Life Science Course is a 5-year integrated PhD program for graduate students, there is also a 3-year curriculum starting in the third year of the program.

In the first year, students will learn basic and advanced genome editing techniques. From the second 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.

◆Admissions

The Life Science Course (3-year curriculum) of the Frontier Development Program for Genome Editing is open to students who will be admitted to the Doctoral Course of the Graduate School of Integrated Sciences for Life in April 2027. (Transfer admission to 3rd year)

Those who wish to enroll in this program must apply for this program in addition to applying to the Graduate School. For details, please visit the website at the following URL.

* The prospective advisor of the applicant must be someone from the list of faculty members of the Frontier Development Program for Genome Editing.
* Students in this program must fulfill the requirements for both their major in the Graduate School and this program simultaneously.
* Candidates and successful candidates of the Early Completion Course of the Doctoral Program for working people（社会人特別入試短期修了コース）of the Graduate School of Integrated Sciences for Life are not eligible to apply for this program.

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

◆ Financial Support for Students

We currently offer financial support to students in the program as described in (1), (2), (3), and (4) below. This support is provided only during the standard course period.

(1) A scholarship of 50,000 yen per month will be awarded for six months to up to three students who demonstrate excellent academic performance and outstanding achievements in academic activities after enrollment. (Details of the application procedure will be announced after admission.)

(2) Free tuition will be provided for the third and later years of the Life Science Course and for all years of the Medical Course. (Some students may not be eligible due to their academic performance.)

(3) Ikenoue Student Dormitory is available with priority for two years after enrollment in the program. (Boarding fee, common expenses, and utility fee will be charged.)

(4) Travel grants, which cover transportation and accommodation expenses as well as daily allowances, will be provided up to the amount specified by the program for students' international research activities. (Details will be announced after admission.)

*Note：

・Financial support is as of April 1, 2026 and is subject to change.

・Financial support for (1), (2), and (3) will end on March 31, 2028. Discussions regarding financial support after April 1, 2028, will take place by the end of AY 2027.

In addition to the support mentioned above, you can find more information about the university/graduate school-wide support on the student information system "MOMIJI" and the Graduate School website.

◆ Contact for the Frontier Development Program for Genome Editing

Collaboration Office, Education Office, Hiroshima University

3F Student Plaza, 1-7-1 Kagamiyama, Higashi-Hiroshima City, Hiroshima 739-8514 JAPAN

TEL：082-424-6819　Email：leading-program@office.hiroshima-u.ac.jp

13. Notes and Consent Concerning the Child Sexual Violence Prevention Act

Pursuant to the "Act on Measures for the Prevention of Sexual Violence, etc. against Children by School Founders, etc. and Private Education and Childcare Business Operators (学校設置者等及び民間教育保育等事業者による児童対象性暴力等の防止等のための措置に関する法律)" (hereinafter referred to as the "Act", also commonly referred to as the "Child Sexual Violence Prevention Act") , students who participate in teaching practicums, caregiving experience programs, internships, volunteer activities, or other activities required for the acquisition of a teaching license may be subject to confirmation of any prior convictions for sexual offenses.

Having regard to the purpose of the Act, the University requires, as part of the admission procedures, that applicants provide their prior consent with respect to the relevant matters.

For further details concerning the foregoing notes and consent matters, please refer to the following website.

URL: https://momiji.hiroshima-u.ac.jp/momiji-top/en/learning/koseibouhou.html

14. 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) If a candidate commits any form of misconduct, they will be instructed to stop the examination immediately and leave the examination room. The candidate will not be permitted to continue taking any subsequent examinations. In addition, all examination results for subjects taken during the same examination session at Hiroshima University will be invalidated.

Depending on the circumstances, the University may take appropriate measures, including filing a report with the police.

If misconduct is discovered after a notice of acceptance has been issued, the candidate's admission will be revoked. In such cases, any admission screening fee, admission fee, tuition, or other fees already paid will not be refunded.

The following are examples of misconduct; however, this list is not exhaustive.

- Cheating, including placing or consulting notes, copied materials, or other unauthorized materials related to the examination subjects on or around a desk; referring to textbooks, reference books, dictionaries, or other publications; viewing another examinee's answer sheet; or receiving answers from another person.
- Using electronic devices during the examination, including mobile phones, smartphones, tablets, wearable devices (such as smartwatches and smart glasses), electronic dictionaries, IC recorders, earphones, music players, or similar devices.

(6) Any forgery or falsification of the documents and/or academic fraud would result in cancellation of acceptance even after passing examination or admission.

(7) 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.

(8) Application Guidelines and other related documents can be downloaded from the website of the Graduate School of Integrated Sciences for Life, Hiroshima University.

(9) 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.
(10) For further information, please contact the following each support office in charge of the program(s) (page 5).

15. 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（1/4）

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，バイオリファイナリー Lipid engineering, Microbial biotechnology, Biorefinery
教授 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，代謝産物生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，さらに医農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
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. Biomineralization: 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, Biomineralization, Biofuel production
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	分子進化工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ベ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，進化工学，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工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（2/4）

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 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。主にバクテリアを対象に分子レベルでリンの代謝メカニズムを解明し，リン資源の有効活用，リン代謝の制御によるバイオセーフティー技術開発，バイオプロセス構築へ応用する。 We study how bacteria metabolize phosphorus and how these processes influence environmental phosphorus cycling. By uncovering the molecular mechanisms of bacterial phosphorus metabolism, we aim to develop innovative biotechnologies that promote phosphorus recycling, regulate bacterial growth for biosafety measures, and support sustainable bioprocessing.	リン代謝，バクテリア，環境バイオテクノロジー Phosphorus metabolism, Bacteria, Environmental biotechnology
教授 Professor	水沼　正樹 Masaki MIZUNUMA	単細胞真核生物・酵母を用いて，Ca2+シグナル伝達経路の全貌を明らかにする。特に，Ca2+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 Ca2+−dependent signaling using the unicellular eukaryote, Saccharomyces cerevisiae, 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 Caenorhabditis elegans.	酵母，線虫，寿命 Yeast, C. elegans, 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	清酒や焼酎の香気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，香気成分 Sake, Shochu, Aroma compounds
客員教授 Visiting Professor	岩下　和裕 Kazuhiro IWASHITA	清酒製造は原料米を麹菌と酵母が順番で発酵し,さらに熟成等を経て生まれます。麹菌や酵母のゲノムが明らかになり個々の遺伝子について研究が進んできましたが,酒造りはこれらの多種多様な遺伝子機能が掛け算のように関連します。これの複雑な関連をメタボロミクス,ゲノミクス等の情報を生成AI等使って解き明かすことを目指しています。 Sake making involves the fermentation of steamed rice with koji−king and yeast in sequence, followed by further maturatio. The genomes of koji−king and yeast have been revealed, and research on individual genes has been advancing. However, sake brewing involves the complex interaction of these various genetic functions. Our goal is to unravel these complex interactions using information from metabolomics, genomics, and other omix data using several information technology such as generative AI technologies.	ゲノミクス,メタボロミクス,AI Mtabolomix, genomix, Artivitial interigence
客員教授 Visiting Professor	藤井　達也 Tatsuya FUJII	カビや酵母等の真核微生物を中心に，これらが示す多彩な表現型（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（3/4）

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	青井　議輝 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
准教授 Associate Professor	池田　丈 Takeshi IKEDA	環境中に豊富に存在するケイ素(Si)は，産業的にも重要な元素である。ケイ素を利用して生育する細菌のメカニズムを解析し，その知見を基にケイ素材料とバイオテクノロジーの融合技術の開発を進めている。また，地球上のケイ素循環における細菌の役割の解明に向けた研究も進めている。 Our research focuses on the interaction between inorganic silicon (Si) materials and bacteria (and their biomolecules). We are developing biointegrated devices/materials using Si-associated biomolecules as an interface. We also investigate the contribution of Si-utilizing bacteria to the global Si cycle.	バイオミネラリゼーション，バイオ融合デバイス・マテリアル，ケイ素循環 Biomineralization, Biointegrated devices/materials, Silicon cycle
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・抗癌関連医化薬品への応用研究 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 sturucture, 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（4/4）

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	低温菌と有用物質変換酵素を活用した効率的なバイオ変換のための酵素触媒と変換プロセスの開発。安定性や活性等を向上させる変換酵素の改変。 Development of biocatalysts for efficient bioconversion processes using psychrophilic bacteria and mesophilic conversion enzymes. Enzyme engineering to improve activity and stability.	バイオものづくり，酵素触媒，低温菌，酵素改変 Bioproduction, Biocatalysis, Psychrophile, Enzyme 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	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

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（1/2）

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
教授 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
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	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	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	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
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	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 Foodbrone bacteria, Pathogenicity, Antibiotic-resistant bacteria
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	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
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
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

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（2/2）

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
客員教授 Visiting Professor	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 aplications.	酵素, 醸造, 微生物 Enzyme, Brewing, Microorganism
准教授 Associate Professor	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 dideases
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	冲中 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	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	冨永 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
准教授 Associate Professor	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-responsible 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

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, Plang 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 enhancemnet, Aquatic animal
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	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
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, 繁殖戦術, 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	冨永 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	冨山 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
教 授 Professor	米澤 隆弘 Takahiro YONEZAWA	家畜及び野生動物のゲノム進化学的研究 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
教 授 Professor	和田 茂樹 Shigeki WADA	海洋の生物と環境の相互作用 Interactions between marine organisms and environments	ブルーカーボン, 炭素隔離, 海洋酸性化 Blue Carbon, Carbon sequestration, Ocean acidification
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

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	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し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
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
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	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
准教授 Associate Professor	豊田　賢治 Kenji TOYOTA	水圏無脊椎動物を中心とした分子生態研究 Molecular ecology of aquatic invertebrates	甲殻類，内分泌，性差 crustacean, endocrinology, sex differences
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	新居　隆浩 Takahiro 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, iIntestinal environment, Egg production
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	若林　香織 Kaori WAKABAYASHI	自然と調和した魚介類増養殖技術の開発 Reproduction and growth of marine invertebrates.	種苗生産，幼生発育，胚発生 Seed production, Larval development, Embryology

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	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
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	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ー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	ヴィレヌーヴ 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	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・還元機構および生理学的役割の研究 Mechanism of metal ion accumulation and reduction by marine invertebrate animals and their physiological functions.	生理, 金属イオン, 酸化還元 Physiology, Metal ion, Redox
准教授 Associate Professor	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
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
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

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	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
准教授 Associate Professor	渡邊　千穂 Chiho WATANABE	*in vitro* 細胞モデルを中心とした生命現象の物質科学研究 Material science studies for life phenomena based on *in vitro* cell models	脂質膜, 高分子溶液, ソフトマター lipid membrane, polymer solution, soft matter science
特任准教授 Specially Appointment Associate Professor	岩越　栄子 Eiko IWAKOSHI	動物の外部環境温度に対する生体応答機構に関する研究 Research on the biological response mechanisms of animals to external environmental temperature.	両生類, 家禽, 低温適応, 脂肪蓄積 Amphibians, Poultry, Cold adaptation, Fat accumulation
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

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	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
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	平川 有宇樹 Yuki HIRAKAWA	モデル植物ゼニゴケの分裂組織における細胞運命決定機構の研究。陸上植物における発生システムの保存性と多様化。 Molecular mechanisms of cell fate determination in plant meristem. Conservation and diversification of land plant developmental systems.	植物発生学, 分裂組織, ゼニゴケ Plant developmental biology, Meristem, Marchantia
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	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
准教授 Associate Professor	鈴木 誠 Makoto SUZUKI	モデル両生類を用いた脊椎動物における器官形成と先天異常の分子メカニズムに関する研究 Study on molecular mechanisms of organogenesis and birth defects in vertebrates using amphibian models	発生, ツメガエル, ヒト疾患 Development, *Xenopus*, Human disease
准教授 Associate Professor	高橋　治子 Haruko TAKAHASHI	生体外(in vitro)3次元的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

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，エヴォデヴォ,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	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 plnat horomone, Molecular mechanisms of plant hormone biosythesis, signaling and crosstalk.	植物ホルモン，転写制御，信号伝達 Plant hormone, Transcriptional regulation, Signal transduction
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

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（1/2）

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	市川 正敏 Masatoshi ICHIKAWA	自発運動や生体機能，生物の生態など「生き物らしさ」創発の研究 Experimental investigation and modeling of the emergence of “lifelike qualities,” including self-propelled movement, biological functions, and ethological aspects	生命現象の数理科学，生命系・自己駆動系・ソフトマテリアル系の物理 Biological physics & mathematics, Living-, active- & soft-matter science
教授 Professor	稲葉 央 Hiroshi INABA	ペプチドやタンパク質といった生体分子デザインによる機能性材料の構築に関する研究 微小管をはじめとする細胞骨格工学の研究 The construction of functional materials through the design of biomolecules, such as peptides and proteins Engineering of cytoskeletons such as microtubules	ペプチド化学，タンパク質化学，細胞骨格 Peptide chemistry, Protein chemistry, Cytoskeletons
教授 Professor	大森 義裕 Yoshihiro OMORI	魚類モデルを用いた脊椎動物の形態形成，進化，眼関連疾患に関するゲノム科学的研究 Understanding molecular mechanisms of vertebrate morphogenesis, evolution, and pathogenesis of ophthalmology disease using teleost fish models based on genome science	ゲノム科学，魚類モデル，神経変性疾患，脊椎動物進化，GWAS解析 Genome science, Teleost fish models, Neurodegenerative diseases, Vertebrate evolution, Genome wide association study
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	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 nonequiliburim 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	中野 祥吾 Shogo Nakano	(1)アミノ酸代謝に関わる酵素群の探索および反応機構解明; (2) 情報科学 (AI含む) を基盤とする酵素再設計法の開発; (3) 物質生産に資する高機能化酵素の開発および応用 (1) Screening of amino acid metabolising enzymes and elucidation of reaction mechanisms; (2) Development of enzyme redesign methods based on information science; (3) Development of highly functional enzymes for application in bioproduction	酵素化学，タンパク質工学，構造生物学 Enzyme chemistry, Protein engineering, Structural biology
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	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
教授 Professor	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
准教授 Associate Professor	粟津 暁紀 Akinori AWAZU	分子・細胞の生物学・基礎獣医学：ゲノム動態，遺伝子制御，発生と形態形成，疾患の数理・実験研究 Molecular and cellular biology and basic veterinary medicine: mathematical and experimental research on genome dynamics, gene regulation, development and morphogenesis, and disease.	実験・臨床密着型数理，数理密着型実験 Mathematics closely related to experiments and medicine, Mathematics closely related to experiments

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（2/2）

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
准教授 Associate Professor	大西　勇 Isamu OHNISHI	場の量子論を用いた、量子重力、量子情報の、数理物理学的研究。ここ2，3年で、それに有用なLA-ODR（Lie環分離法の応用）の構築に尽力し、ある程度の完成をみている。この手法の様々な応用的研究（場の量子論的方程式や量子LLE方程式、Navier-Stokes 方程式など、多数の経験アリ）にも興味がある。 Research in mathematical physics of quantum gravity and quantum information using quantum field theory. Over the past two or three years, I have dedicated myself to the construction of LA-ODR, which is useful for this research, and have achieved a certain degree of completion. I am also interested in various applied studies(Extensive experience with quantum field equations, quantum LLE equations, Navier-Stokes equations, etc.) of this method.	数理物理学、場の量子論、量子情報、量子重力、量子力学的多体問題 Mathematical physics, quantum field theory, quantum information, quantum gravity, Quantum many body problem
准教授 Associate Professor	岡田　崇 Takashi OKADA	生命システムの相互作用や性質を，確率過程・統計物理・情報理論・機械学習に基づく数理手法によって解析し,その予測と制御を目指す．研究対象は，代謝ネットワーク，神経ネットワーク，微生物群集，遺伝子制御ネットワークなど． Theoretical studies on biological systems, using mathematical approaches based on statistical physics, information theory, and machine learning, with the goal of predicting and controlling complex biological phenomena.	統計物理、集団遺伝学、機械学習、システム生物学 Statistical physics, population genetics, machine learning, systems 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
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
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	松尾　宗征 Muneyuki MATSUO	超分子化学の視座に根ざした非平衡性・非線形性の導入による人工的生物様システムの構築およびその機能発現機構の解明 Construction of artificial "Life-like Systems" by introducing non-equilibrium and non-linearity based on the supramolecular system chemistry, and elucidation of their functional emergence mechanisms.	システム化学，超分子化学，人工細胞，原始細胞，生命起源 Systems Chemistry, Supramolecular Chemistry, Artificial Cells, Protocells, Origins of Life

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（1/2）

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 Glia, 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	大森 義裕 Yoshihiro OMORI	魚類モデルを用いた脊椎動物の形態形成, 進化, 眼関連疾患に関するゲノム科学的研究 Understanding molecular mechanisms of vertebrate morphogenesis, evolution, and pathogenesis of ophthalmology disease using teleost fish models based on genome science	ゲノム科学, 魚類モデル, 神経変性疾患, 脊椎動物進化, GWAS解析 Genome science, Teleost fish models, Neurodegenerative diseases, Vertebrate evolution, Genome wide association study
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	近添 淳一 Junichi CHIKAZOE	五感全てを対象とした機能的MRI研究 Functional MRI Studies Targeting All Five Senses	機械学習, 深層学習, 情動 Machine Learning, Deep Learning, Emotion
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.	イベリアトゲイモリ, 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
教授 Professor	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

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

担当教員 Academic Staff		研究内容 Research Fields	キーワード Keywords
客員教授 Visiting Professor	畠山　慶一 Keiichi HATAKEYAMA	臨床情報とがんゲノムデータの統合を目指したがんゲノム解析研究 腫瘍細胞濃縮技術を用いたがんゲノム解析の高精度化と臨床応用 Cancer genome analysis to integrate of clinical information and genome data. Improving the accuracy of cancer genome analysis using tumor cell enrichment and its application in clinical practice.	がんゲノム, 変異, 体細胞/生殖細胞系列変化, 臨床応用 Cancer genome, mutation, somatic/germline alteration, clinical application
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・抗癌関連医化薬品への応用研究 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	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 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
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	鈴木　誠 Makoto SUZUKI	モデル両生類を用いた脊椎動物における器官形成と先天異常の分子メカニズムに関する研究 Study on molecular mechanisms of organogenesis and birth defects in vertebrates using amphibian models	発生, ツメガエル, ヒト疾患 Development, Xenopus, Human disease
准教授 AssociateProfessor	高橋　治子 Haruko TAKAHASHI	生体外(in vitro)3次元的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
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
准教授 Associate Professor	渡邊　千穂 Chiho WATANABE	*in vitro*細胞モデルを中心とした生命現象の物質科学研究 Material science studies for life phenomena based on *in vitro* cell models	脂質膜, 高分子溶液, ソフトマター lipid membrane, polymer solution, soft matter science