

Program in Biological System Sciences

Graduate School of Comprehensive Scientific Research

Prefectural University of Hiroshima (PUH)

Student Application Requirements and Procedures

2023 Academic Year

Fall Admission

Master's Program

Special Selection for the Students
from Partner Universities

March 2023

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○ PUH in this document refers to the Prefectural University of Hiroshima.

○ Download the forms for application documents on the official website of PUH.

<https://www.pu-hiroshima.ac.jp/site/graduate-selection/fall-admission-englishtrack.html>

○ The times described in this document are all listed in JST (Japan Standard Time).

Prefectural University of Hiroshima Graduate School of Comprehensive
Scientific Research, Program in Biological System Sciences
2023 Academic Year Fall Admission

1 Number of Persons to be Accepted

Selection category	Number of enrollments
Special selection for the students from partner universities	Approx. five persons

2 Application Requirements

Applicants must meet all the requirements below.

- 2.1 Have graduated, or are expected to graduate by September 30, 2023, from a university that has signed an academic exchange agreement with PUH.
- 2.2 Are 22 years of age or older by September 24, 2023.
- 2.3 Have completed, or are expected to complete by September 30, 2023, 16 years of education from elementary school to an institute of higher learning such as a university in a country other than Japan.

3 Schedule

Application period	June 1 (Thu.) ~ June 15 (Thu.), 2023 * All the application documents must reach us by the deadline.
Notification of the examinee's number	Announcement by email after noon on June 22 (Thu.), 2023
Announcement of successful applicants	Noon on June 27 (Tue.), 2023
Admission procedures	June 28 (Wed.) ~ July 12 (Wed.), 2023 * Accepted students who have not completed the procedures by the deadline will be considered as having declined the admission.

4 Screening

4.1 Screening Method

Selection category	Screening method
Special selection for the students from partner universities	Applicants are comprehensively judged based on the contents of all submitted application documents.

4.2 Point allocation

Item	For non-native speaker of English	For native speaker of English
Academic Transcript and Letter of Recommendation	30%	40%
TOEIC/TOEFL Score	20%	-
Research Plan and other documents	50%	60%

5 Application Procedures

Applications are accepted only via the Internet application.

Application Flow

1. Input and register your information



Input your personal information. (Can be done anytime 24 hours a day).



2. Pay the application fee



Pay the application fee of 30,000-JPY by credit card.



3. Print out then send the documents



Print out the application documents (A4 size, black-and-white accepted), confirm all the contents, and then send them using EMS or some other trackable postal means.

5.1 Application Period (Internet Application and Document Submission Period)

Period for Internet application registration and payment of admission selection fee	June 1 (Thu.) 9:00 AM ~ June 15 (Thu.) 5:00 PM, 2023
Submission period of the application documents	June 1 (Thu.) ~ June 15 (Thu.), 2023 * All the application documents must reach us by the deadline.

* The deadline for paying the admission selection fee can be found on a screen displayed after registering your application.

5.2 Application Documents Required for Submission

Download the forms for application documents on the official website of PUH.

Internet application website -> Download Documents

<https://www.pu-hiroshima.ac.jp/site/graduate-selection/fall-admission-englishtrack.html>

○: Accepted, ×: Not accepted

Application Document	Description	Submission	Method	
			Upload	EMS
Application Form	<p>You can print this out after registering your application information on the Internet and paying the application fee.</p> <p>On the "MyPage" screen of the Internet application website, select "Application Registration List" [出願申込一覧] and then "Open the PDF application form" 志願票(印刷)]. Print the application form out on A4, single-side paper for submission.</p>	Required	×	○
Curriculum Vitae (PUH Form)	Use the form downloaded from the official website of PUH. Either upload it or mail it via EMS for submission.	Required	○	○
Research Plan1 and Research Plan2 (PUH Form)	Use the form downloaded from the official website of PUH. Select your desired research field and related items, referring to "Academic Advisors and Research Fields" shown in Table 16 (p. - 10 -). Either upload it or mail it via EMS for submission.	Required	○	○
Letter of Recommendation (PUH Form) *No copy	Use the form downloaded from the official website of PUH. Submit the document prepared by your academic advisor, and signed (official seal affixed) by the president or the dean of your university (graduate university). <u>You must submit the original.</u>	Required	×	○
Records of Communication	Submit copies of all records of communication (emails, letters, etc.) showing the details of prior consultations with the research field academic advisor from whom you want to receive guidance about your planned research after admission and other items.	Required	×	○
Graduation Certificate or Expected Graduation Certificate *No copy	Submit a document prepared by the president or dean of your university (graduate university). * Consult with the Academic Affairs Sect. in PUH beforehand if you cannot submit an original copy of the certificate. * Persons who have graduated from an institute of higher learning in China must authenticate their graduation certificates at the China Higher Education Student Information (中国高等教育学生信息网) website (https://www.chsi.com.cn/xlcx/), and submit a printout of the verification screen (Verification Report of China Higher Education Qualification Certificate [教育部学历证书电子注册备案表]).	Required	×	○
Academic Transcript *No copy	Submit a document prepared and sealed by the president or dean of your university (graduate university).	Required	×	○
TOEIC/TOEFL Score Certificate *No copy	Submit any of the following certificates (copies not acceptable). (Multiple certificates can be submitted.) Only score certificates for tests held on or after April 1, 2021 are valid. These certificates will be returned to applicants after the completion of the screening. <ul style="list-style-type: none"> • TOEIC® (L&R or S&W) • TOEIC® -IP(L&R or S&W) • TOEFL®-iBT • TOEFL®-PBT or TOEFL paper test • TOEFL®-ITP <p>* No certificate is required for native speakers of English.</p>	Required	×	○
Photocopy of Passport	Submit a photocopy of the page showing your name, date of birth, sex, and nationality.	Required	×	○

5.3 Changes in an Internet Application

a **Before** Paying Application Fee

You cannot change registered information after completing the registration.

In such a case, do not pay the admission selection fee, and then complete the application registration procedure again.

On the Internet application website, access "MyPage" (Refer to p. - 5 -) and then click "Carry out the application procedure" and input the information again from the start.

* Do not pay from the application procedure before changing the registered information. Doing so will require a refund procedure at a later date.

(The previous registered information will be automatically eliminated if the payment procedure is not completed).



b **After** Paying Application Fee

You cannot change the application, selection, or program in your application form. In this case, contact the PUH Academic Affairs Sect. immediately.

If you need to change any of the other contents, after printing out the application documents, cross out the incorrect information with two lines and then make the correction in red ink. (A correction seal is not required.)

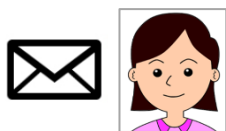
Email: puhnyusi@pu-hiroshima.ac.jp

* Reception hours: Weekdays, 9:00 AM ~ 5:00 PM

5.4 Application Process

① Preparation

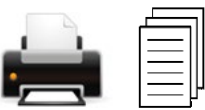
Prepare the following four items before accessing Internet application website. In addition, if you will submit the "Research Plan" and "Curriculum Vitae" by uploading, prepare that data.



■ Email address

* The Administrative Affairs Dept. in PUH will use this to send notifications during application and guidance for printing your examinee sheet.

* If you need to specify a domain to allow for reception of emails, perform settings so that you can receive email from the following domains: (@e-apply.jp, @pu-hiroshima.ac.jp).



■ Face photo data for Application

* The photo must be in JPEG format, within 4 MB, and taken within the 3 months from application.

* It must be taken from the front, showing yourself from the chest up, bareheaded, against a plain white background, and with your face clearly shown.



■ Printer and printing paper (A4 normal paper, black-and-white printing acceptable)

■ Envelope for EMS or other similar postal means with tracking service

② Access to Internet Application Website



Click "Prefectural University of Hiroshima / Online Application" [県立広島大学インターネット出願サイト].

* You can also directly access <https://e-apply.jp/ds/puh/>.



③ Setting of "MyPage"



■ First time Registration

1. Click [マイページ登録/MyPage registration] button and make your "MyPage" according to the guidance.
2. Your Password will be sent to your registered email address.
3. Log in to "MyPage" using your email address and received Password.
4. After this point, carry out the application procedure through the MyPage. Be sure to make a note of your registered email address and Password so that you do not forget them.

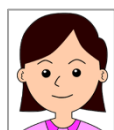
*You cannot change the email address after making your MyPage.

■ After the First Time Registration

1. Log in to "MyPage" using your registered email address and Password.
2. If you forgot your registered email address or Password, you can access the following URL and inquire by email.

★ Support page for Internet application website: <https://e-apply.jp/e/support/>

④ Input of Personal Information and Uploading Face Photo Data (and Application Documents)



1. Click "Carry out the application procedure" and select the program carefully making sure there are no mistakes.
2. Register your application and personal information, according to the on-screen instructions.
3. Upload your face photo data and, if necessary, "Research Plan" and "Curriculum Vitae."

* In "Current Address," make sure to write exactly and without abbreviation an address where you can surely get the documents mailed from PUH. PUH is not responsible for any documents you do not receive.

* Be sure to check all the content you entered. (You cannot change information after the registration is complete.)

* Make sure to record the reception number that is displayed after the application registration.

⑤ Payment of Application Fee



After registering your application information, follow the on-screen instructions and pay 30,000 JPY as the application fee by credit card.

If you are applying for the 2023 MEXT Scholarship (University Recommendation), you can defer payment.

* Attention

You must pay the corresponding handling charges when paying the fee.

⑥ Print-out and Submission of Application Documents



1. Log in to the "MyPage" through the Internet application website.
2. Select "Application Registration List [出願申込一覧]" and then "Open the PDF application form [志願票 (印刷)]."
3. Download the application form and print it out with A4 paper, single side.
4. Submit all the application documents (refer to page 3) with the printed application form to the designated destination by EMS or other similar postal means with tracking service.

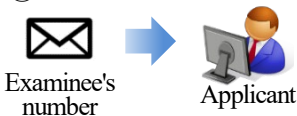
* Make sure to include your "Research Plan" and "Curriculum Vitae," if you are not submitting them by uploading. When you have already submitted "Research Plan" and "Curriculum Vitae" by uploading, you do not need to send them.

* The Administrative Affairs Dept. cannot reply to inquiries to confirm the arrival of sent documents.

* If necessary, check the delivery status of your sent documents using tracking services, such as those on the JP Post website.

* The Administrative Affairs Dept. does not notify you of the arrival of your sent documents. We will contact the registered email address only when there is a problem with the application documents.

⑦ Notification of Examinee's Number



The Administrative Affairs Dept. sends an "examinee's number" to your registered email address on or after noon on June 22 (Thu.), 2023.

6 Mailing Address and Contact

Academic Affairs Sect., Administrative Affairs Dept., Shobara Campus, Prefectural University of Hiroshima

5562 Nanatsuka-cho, Shobara City, Hiroshima Pref. 727-0023, Japan

TEL: +81-824-74-1700 FAX: +81-824-74-0191

Email: pusnyusi@pu-hiroshima.ac.jp

* Reception hours: Weekdays, 9:00 AM ~ 5:00 PM

7 Notes about Application Procedures

7.1 Application periods and times are in Japanese Standard Time (JST, UTC+9).

Make sure that application documents reach PUH within the designated period.

7.2 Fill in the application documents with a pen in black ink or ballpoint pen (not erasable).

7.3 You cannot change "Application Group," "Selection Group," or "Program Group" after your application documents are received, regardless of the reason.

7.4 If there is a change to your address, phone number, or email address after application, contact the Academic Affairs Sect. immediately. PUH will not be responsible if mailed documents or contact from PUH do not reach you because the contents in your application were changed.

7.5 Admission will be revoked if the application requirements are not met by September 30, 2023.

7.6 Admission might be revoked if any contents of the application documents are found to contain falsehoods, even after the admission has been approved.

7.7 Application documents already received by PUH and admission selection fees already paid cannot be returned to you. However, an application fee which is already paid can be refunded if no application documents are submitted. In such cases, please inquire with the Academic Affairs Sect. by email in English by March 31, 2024.

8 Prior Consultations

Be sure to consult in advance by email or letter with your desired advisors concerning your research plan.

You must save all the records of communications with academic advisors, because they are documents that must be submitted.

9 Prior Consultations of Physically Challenged and Similar Applicants

When the applicant requires special care in regards to their study, such as having a physical handicap, the applicant must consult with the Academic Affairs Sect. in advance by email in English before May 8 (Mon.), 2023.

10 Announcement of Selection Result

10.1 Date and Time

Noon on June 27 (Tue.), 2023

10.2 Announcement Method

- a Successful applicants will be mailed an acceptance letter.
- b The examinee's numbers of the successful applicants will be listed on the official website of PUH, but be sure to check for your acceptance letter.

* URL: <https://www.pu-hiroshima.ac.jp/>

The examinee's numbers of the successful applicants will not be displayed on the following bulletin boards of the Prefectural University of Hiroshima.

- c PUH cannot respond to inquiries made by telephone or other methods regarding acceptance.

11 Admission Procedures

Details about the admission procedure guide will be sent with the acceptance letter to successful applicants by EMS.

Information about the payment of the admission fee will be provided after admission. (PUH does not accept cash.)

11.1 Admission Procedure Period

June 28 (Wed.) ~ July 12 (Wed.), 2023

* Make sure that the admission documents will reach us no later than July 12 (Wed.).

* Accepted students who have not completed the procedures by the deadline will be considered as having declined the admission.

11.2 Admission Procedure Instruction

- a Make sure to submit all the documents required for admission within the designated period by EMS or other similar postal means with tracking service.
- b An admission letter is sent to successful applicants who completed the admission procedure.
- c If an applicant applied as expecting to graduate from university or college but cannot acquire the applicable admission qualification by September 30, 2023, then admission will be revoked for that applicant.

11.3 Department in Charge of Admission Procedures

Academic Affairs Section, Administrative Affairs Department, Prefectural University of Hiroshima

1-1-71 Ujina-Higashi, Minami-ku, Hiroshima City, Hiroshima Pref. 734-8558, Japan

TEL +81-82-251-9540 FAX +81-82-251-9545

Email: puhnysu@pu-hiroshima.ac.jp

* Reception hours: Weekdays, 9:00 AM ~ 5:00 PM

11.4 Important Notes on Admission Procedures

- a Admission documents already received by PUH cannot be returned to you. However, an admission fee and other fees which are already paid can be refunded if the admission procedure is not completed after payment. In such cases, please inquire with the Academic Affairs Sect. by email in English by March 31, 2024.
- b Accepted students who have not completed the procedures by the deadline will be considered as having declined the admission.

12 Admission Fee

394,800 yen

12.1 Successful applicants who are not native speakers of English

The admission fee will be reduced to the amount of 282,000 yen, if at least two of the three requirements in the following table are met.

12.2 Successful applicants who are native speakers of English

The admission fee will be reduced to the amount of 282,000 yen, if the requirements (both ② and ③) other than English fluency (①) in the following table are met.

① English fluency	② College records	③ Research plan evaluation
TOEIC® score of 600 or higher or TOEFL®-iBT score of 69 or higher or IELTS® score of 5.5 or higher	GPA of 3.0 or higher or Grades among the top 30% at one's college or university.	70% or higher

* GPA: Grade Point Average

* A GPA of 4.0 shall be considered full points. (Marking out of 4.0)

* College records shall be for the top 30% of one's department.

13 Tuition and Other Fees

13.1 Tuition

Annual tuition is 535, 800 yen.

* This is the current amount. If the tuition is changed while you are a student, the new tuition will be applied upon the change.

13.2 Facilities Fee

Annual facilities fee is 15,600 yen.

* This is the current amount. If the facilities fee is changed while you are a student, the new fee will be applied upon the change.

13.3 Other Fees and Expenses

Students are expected to pay other fees and expenses in addition to the above such as fees for Personal Accident Insurance for Students Pursuing Education and Research ("Gakkensai"), and liability insurance coupled with PAS, as well as for textbooks and other materials.

14 Scholarships and Housing

14.1 Scholarships

Students accepted through this selection are provided with a monthly figure of 30,000 yen under the PUH scholarship system. However, this shall be limited to the standard graduation period.

In both the first and second school years, the scholarship will be awarded only once in each October, and the amount for 12 months (30,000 yen / month x 12 months = 360,000 yen) will be transferred to the applicant's bank account.

In principle, the students studying in this special master's program are not allowed to receive more than one scholarship simultaneously. However, "Monbukagakusho Honors Scholarship for Privately Financed International Students" offered by the Japanese Ministry of Education, Culture, Sports, Science and Technology is an exception.

* Scholarships must be refunded if the student withdraws from the university before standard graduation.

14.2 Lodging

We will notify successful applicants about Lodging information along with the acceptance notice.

[Lodging fees] Free (for students enrolling in the academic year of 2022).

Note: Limited to two standard years of study after enrolling in the academic year of 2022.

Electricity, water and gas charges to be paid by the student

Rooms equipped with a TV, refrigerator, gas stove, microwave oven, washing machine, vacuum cleaner, and air conditioning.

Note: Other articles are arranged when you move in.

A supermarket, drug store, hospital, post office, and City Hall are located nearby.

14.3 Student Life

There is a local bus service (Bihoku Kotsu; "Kendai Line") that serves the campus.

The fares for the main sections are as follows, but international students are recommended to purchase an annual commuter pass (60,000 yen for students only).

"Doeisha Minami" is the nearest bus stop to the International Student Residence. It is about 500 meters away from the dormitory and takes about ten minutes by foot.

Shobara Station - Prefectural University Bus Rotary, 320 yen one-way

Joyful - Kenritsu Daigaku Bus Rotary, 250 yen one-way

Doueisha Minami - Kenritsu Daigaku Bus Rotary, 210 yen one-way

There is a cafeteria in the university. *Closed for o-bon and year-end holidays.

Prayer room available (for Muslim students).

15 Handling of Personal Information

Personal information (Name, Address, Date of Birth, Other Personal Information, etc.) acquired through student selection will be used only for the student selection, acceptance letter, admission procedure, and surveys / research on student selection (improvement of entrance exams, surveys and analysis of applicant trends, etc.).

16 Table of Academic Advisors and Research Fields

Please contact the academic advisors for more information.

Make sure that you consult with your desired advisor concerning your research plan.

Field	Position	Name, Subject (Class) Email	Outline of Research	Research Topics
Applied Life Science	Prof.	Kyoko INAGAKI- OHARA Immunology and Cell Biology k-inagaki@pu-hiroshima.ac.jp	Leptin receptor signaling exerts a pleiotropic effect on regulation of food intake and energy expenditure, immunity and hematopoiesis, regulating cell differentiation, proliferation and polarity. Leptin is produced in a variety of tissues including adipose tissue and gastrointestinal. We explore the significance of leptin receptor signaling in the development of inflammatory diseases and tumorigenesis in the gastrointestinal.	<ul style="list-style-type: none"> • Determine the role of leptin receptor signaling in cell differentiation and proliferation of epithelial cells in the gastrointestinal. • Clarify the role of leptin receptor signaling in modulation of the immune system supporting inflammation and tumorigenesis in the gastrointestinal.
	Prof.	Shinji IHARA Bioresource chemistry and Extracellular matrix engineering ihara@pu-hiroshima.ac.jp	Damage to the basement membrane contributes to skin aging. Using the visualized basement membrane of the nematode <i>C. elegans</i> , we will analyze the molecular mechanism of built up of basement membrane, search for biological resources which suppress the damage of the basement membrane, and analyze its action mechanism.	<ul style="list-style-type: none"> • Visualization of Basement Membranes using the <i>C. elegans</i> • Analysis of the localization mechanism of basement membrane proteins in vivo • Search for biological resources that suppress damage of basement membrane • Study on the protein folding in endoplasmic reticulum • Study of molecular mechanisms that maintain organ size
	Prof.	Shinjiro OGITA Advanced Plant Cell, Tissue and Organ Culture ogita@pu-hiroshima.ac.jp	We focus on the application of plant cell, tissue and organ culture (PCTOC) methodologies to all research and development areas of traditional and modern plant biotechnology. A high frequent regulation of plant stem cell development during PCTOC is the most important concept of this subject.	<ul style="list-style-type: none"> • Plant cell, tissue and organ culture • Transformation • Cell manipulation • Histochemical analysis • Metabolic engineering
	Prof.	Masahiro Kanaoka Plant Molecular Genetics mkanaoka@pu-hiroshima.ac.jp	Sexual reproduction in angiosperms is achieved through complex interactions between male tissues (sperm cells/pollen tubes) and female tissues (ovules/female gametophytes). We focus on pollen tube guidance factors that attract pollen tubes to ovules, and analyze their functional domains and interspecific diversity. We are also interested in the relationship between environmental response and development of plants.	<ul style="list-style-type: none"> • Plant sexual reproduction • Analysis of functional domains of pollen tube guidance factors • Identification of novel pollen tube guidance factors • Investigation of genes expressed in reproductive cells and identification of their functions • Genesis of pollen development • Analysis of stomatal development in response to the environment

Field	Position	Name, Subject (Class) Email	Outline of Research	Research Topics
Applied Life Science	Prof.	Toshifumi SAKAGUCHI Bioremediation, Biomineralization and Environmental Biotechnology sakaguchi@pu-hiroshima.ac.jp	Development of bio-materials and bio-functions based on biotechnology and genetic engineering by using originally isolated microbes and extremophiles for bioremediation, biofabrication and monitoring Regional revitalization with locally isolated microbes such as fungi, yeasts and lacto-bacilli.	<ul style="list-style-type: none"> • Synthesis of useful (magnetic, diode and/or semiconductor) nanofine particles based biomineralization Biorecovery and bioconversion of heavy metal and metalloïd elements • Development of biomaterial and device for bioremediation. • Development of ecomonitoring system, biodevices, biosensor by microfabrication techniques. • Global search and isolation of functional microbes and extremophiles toward technological applications. • Food, bread and beverage developments using the microbes isolated from local region for the revitalization
	Prof.	Hiroshi SUGA Bioinformatics and Evolutionary Genomics hsuga@pu-hiroshima.ac.jp	What happened in the genome when multicellular organisms evolved from a single-cellular organism hundreds of million years ago? Using a bioinformatics-based approach, we analyze the genome data of various organisms. Based on the hypotheses drawn from these “dry” analyses, we also perform “wet” approaches using model organisms that are considered to be the “direct unicellular ancestor” of animals.	<ul style="list-style-type: none"> • Theoretical study on the evolution of multicellularity by comparative genomics approaches • Introduction of systems biology into evolutionary study using transcriptomics and proteomics • Development of model organisms (and molecular techniques) for the study of multicellularity evolution • Functional analysis of cell-cell communication tools already equipped in unicellular organisms • Functional analysis of cell adhesion molecules found in our unicellular models • • Evolve multicellularity in the lab
	Prof.	Toshiki YAGI Structural Biology of Supramolecule yagit@pu-hiroshima.ac.jp	To understand the molecular mechanism of ciliary and flagellar movements, we have analyzed the motility of <i>Chlamydomonas</i> mutants lacking specific axonemal components. Our research focus is dynein, a ciliary motor protein.	<ul style="list-style-type: none"> • Functional analysis of cilia dyneins. • Regulatory mechanism of dynein motor activity in ciliary movement. • Molecular mechanism of cilia assembly. • X-ray structural analysis of cilia dynein.
	Assoc. Prof.	Yasuyuki ABE Reproductive Biology abe@pu-hiroshima.ac.jp	Our research is the establishment of the assisted reproductive techniques (ARTs) such as cryopreservation and in vitro culture of eggs (oocytes and embryos) in mammals (mouse, bovine, canine, etc.). ARTs have contributed not only to human infertility treatment and animal production including domestic and experimental animals, but also to development of biomedical sciences.	<ul style="list-style-type: none"> • Cryopreservation of oocytes and embryos in mammals • In vitro culture of non-growing oocytes (follicle) in mammals • Identification of sperm factor for fertilization and embryo development in bull • Influence of chronic radiation exposure associated with the Fukushima Daiichi Nuclear Plant on bovine oocytes
	Assoc. Prof.	Yasuhisa YAMASHITA Molecular Physiology yamayasu@pu-hiroshima.ac.jp	We conduct our research to elucidate the basic mechanisms of oocyte maturation during follicular development and ovulation. Furthermore, we also study to apply the fundamental insights from that to the prevention of reproductive disorders in animals, establishment of novel methods of <i>in vitro</i> maturation for domestic animals, and assisted reproductive techniques for humans.	<ul style="list-style-type: none"> • Analysis of secretory mechanisms of EGF-like factor in granulosa/cumulus cells during follicular development and ovulation process. • Analysis of biosynthesis of steroid hormone in granulosa/cumulus cells during follicular development and ovulation process. • Searching for novel factors to induce oocyte maturation during follicular development and ovulation process. • Kinetic change of maturation inducing maker of oocyte in ovulation process using the ovarian pick-up (OPU) technique.

Field	Position	Name, Subject (Class) Email	Outline of Research	Research Topics
Food Resource Science	Prof.	Tadashi GOMI Ecology of Insects gomi@pu-hiroshima.ac.jp	We study adaptation of insects to environmental change, especially global warming. We investigate patterns and mechanisms of the shift in insect life cycles in response to climate change.	<ul style="list-style-type: none"> • Effects of climate change on life-history traits of insects, such as photoperiodic responses for diapause induction, and developmental rates. • Seasonal adaptation of insects and evolution of their life cycles.
	Assoc. Prof.	Wakayo MURATA Farming Systems murataw@pu-hiroshima.ac.jp	We study the differences in food production around the world from the perspectives of technology, policy and social conditions.	<ul style="list-style-type: none"> • Comparative farming systems and agricultural policy • Analysis of food trade and management • Women and development
	Assoc. Prof.	Yukihiro YAMAMOTO Applied Lipid Chemistry yyamamoto@pu-hiroshima.ac.jp	Food chemistry, especially based on enzyme and lipid chemistry. For example, producing physiologically functional materials using enzymes or studying the development of techniques which enable the improvement of oxidation stability of oils and fats.	<ul style="list-style-type: none"> • Preparation of functional lipids using enzymatic esterification or acidolysis. • Effects of emulsifiers on oxidation stability of emulsified oils and fats. • Utilization of unused resources.
	Assoc. Prof.	Tomoyuki YOSHINO Food Process Engineering yoshino@pu-hiroshima.ac.jp	Study of food processing with regard to functional ingredients and preservation. Development of biodegradable materials made from food byproducts. Microscopic study of interactions between cells and biomaterials.	<ul style="list-style-type: none"> • Development of functional foods made from agricultural products. • Development of low-cost biodegradable materials from corn protein. • Study of interaction between LDL and receptors in cell membranes by scanning probe microscopy (SPM). • Imaging of the chromosome surface by SPM.

Field	Position	Name, Subject (Class) Email	Outline of Research	Research Topics
Environmental Science	Prof.	Toshihito OHTAKE Environmental Material Chemistry ohtake@pu-hiroshima.ac.jp	We will need novel ideas based on a new principle to design for next generated solar cell that is far superior to usual one for a conversion efficiency. We have studied quantum dots solar cells by utilizing a quantum size effect, and plasmonic solar cells by using a surface plasmon surface.	<ul style="list-style-type: none"> Quantum dots solar cells. Plasmonic solar cells. Materials design of perovskite semiconductors endowed with photo functionality. Investigation of strongly correlated electron system as endowed with photo functionality in metal oxides. Development of flexible solar cells at lightness and filmness.
	Prof.	Kazuyuki NISHIMURA Advanced Material Cycles and Waste Management nishimura@pu-hiroshima.ac.jp	We develop and assess treatment technology and recycling systems for wastes. We also research risk management for recycled products.	<ul style="list-style-type: none"> Developing waste treatment technologies for minimizing environmental impact. Study of material recycling technologies and systems. Research on techniques for assessing health risks.
	Prof.	Atsushi HASHIMOTO Environmental Risk Assessment and Management atsushi@pu-hiroshima.ac.jp	Our study has focused on the microbial safety and sanitation of drinking water. Of particular recent interest are the rapid detection methods from various water environments using molecular biological assay and disinfection using UVA-LED of protozoa and intestinal viruses.	<ul style="list-style-type: none"> Detection and analysis methods of waterborne microbes from water environments using molecular biological techniques (protozoa, intestinal viruses) Alternative disinfection with UVA-LED etc. Surrogate indicators for fecal pollution
	Prof.	Hiroyuki HARADA Advanced Material Cycles and Waste Management ho-harada@pu-hiroshima.ac.jp	We research techniques for combining key technologies to construct optimally eco-friendly systems for environmental maintenance and restoration.	<ul style="list-style-type: none"> Recovery of exhaustible resources by utilizing untapped waste biomass Adsorption of hydrogen sulfide by utilizing natural minerals Environmental conservation of tidelands
	Prof.	Yoshiharu MITOMA Instrumental Analysis of the Environment mitomay@pu-hiroshima.ac.jp	Applied research on proper disposal of waste materials aimed at creation and promotion of a recycling-oriented society, with basic studies of green processes via heterogeneous catalysis.	<ul style="list-style-type: none"> Energy-saving detoxification systems for endocrine-disrupting chemicals. Biomass conversion into useful materials using environmentally-friendly chemical reactions. Synthetic organic reactions in water and their mechanisms.
	Prof.	Seiichiro YONEMURA Atmospheric Environment yone@pu-hiroshima.ac.jp	Studying interactions between atmosphere and biosphere	<ul style="list-style-type: none"> Monitoring of atmospheric environment and bio-meteorology Gas exchange of permafrost soil Emission mechanisms of N₂O and NO from soil. Plant gas exchange Measurements of degradation rates of bio-film and soil carbon in soil Dynamics of earthworms through gas exchange Modeling the processes listed above.
	Assoc. Prof.	Mitsuru AOYAGI Chemistry of Environmental Macromolecules aoyagi@pu-hiroshima.ac.jp	Structural analysis and characterization of polymeric materials derived from components of lignocellulosics. Applications of these materials are also studied based on their properties at the molecular level.	<ul style="list-style-type: none"> Photochemical analysis of variations in condensed structures of several lignin derivatives. Investigation on properties of lignin-based polymeric materials. Investigation and application of structural changes in lignin derivatives under irradiation.

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Environmental Science	Assoc. Prof.	Jun NISHIMOTO Inorganic Analytical Chemistry nishimoj@pu-hiroshima.ac.jp	Research on separation for hazardous and useful substances by solvent extraction, solid phase extraction, ion exchange and precipitation. Research on behavior of inorganic substances in environmental.	<ul style="list-style-type: none"> • Molecular imprinting polymers as adsorbent for hazardous substances • Recovery of metals in ash and wastewater • Behavior of inorganic substances in tidal flat of Ariake bay

For inquiries about the entrance examination:

Program in Biological System Sciences

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