Program in Biological System Sciences

Graduate School of Comprehensive Scientific Research

Prefectural University of Hiroshima (PUH)

Student Application Requirements and Procedures

2020 Academic Year

Fall Admission

Master's Program

Special Selection for the Students
from Partner Universities

March 2020

Contents

○ 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
2020 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, 2020, from a university that has signed an academic exchange agreement with PUH.

2.2 Are 22 years of age or older by September 24, 2020.

2.3 Have completed, or are expected to complete by September 30, 2020, 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 (Mon.) ~ June 15 (Mon.), 2020 (All the application documents must reach us by June 15.)
Notification of the examinee's number	Announcement by email after noon on June 24 (Wed.), 2020
Announcement of successful applicants	Noon on June 29 (Mon.), 2020
Admission procedures	June 30 (Tue.) ~ July 14 (Tue.), 2020 * 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 (Mon.) 9:00 AM ~ June 15 (Mon.) 5:00 PM, 2020
Submission period of the application documents	June 1 (Mon.) ~ June 15 (Mon.), 2020 * All the application documents must reach us by June 15 (Mon.).

* 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	You can print this out after registering your application information on the Internet and paying the application fee. On the "My Page" screen of the Internet application website, select "the application situation" [出願状況の確認] and then "the display of the application documents (PDF)" [出願書類(PDF)の表示]. Print the application form out on A4, single-side paper for submission.	Required	×	○
Research Plan (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	○	○
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	○	○
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). You must submit the original.	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	Submit a document prepared by the president or dean of your university (graduate university). Attach a Japanese translation if the document is in any language other than English. * 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	Submit a document prepared and sealed by the president or dean of your university (graduate university). Attach a Japanese translation if the document is in any language other than English.	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, 2018 are valid. These certificates will be returned to applicants after the completion of the screening. ・ TOEIC® (L&R or S&W) ・ TOEIC® -IP(L&R or S&W) ・ TOEFL®-iBT ・ TOEFL®-PBT or TOEFL paper test ・ TOEFL®-ITP * No certificate is required for native speakers of English.	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 "My Page" (Refer to p. 5) and then click "Apply" 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.

b After Paying Application Fee

You cannot change the "Application Group," "Selection Group," or "Program Group" in your application form. In this case, contact the PUH Academic Affairs Sect. immediately.

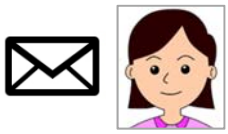
If you need to change any of the other contents, after printing out the application documents, cross out the incorrect information with two lines and then make the correction in red ink. (A correction seal is not required.)

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 "Application and Enrollment Procedures Site" [出願・入学手続サイト].

* You can also directly access https://e-apply.jp/myp/puh/.

③ Setting of "My Page"

新規登録／Sign up

■ First Time Registration

1. Click [新規登録/Sign up] button and make your "My Page" according to the guidance.
2. Your User ID and Password will be sent to your registered email address.
3. Log in to "My Page" using your received User ID and Password.
4. After this point, carry out the application procedure through the My Page. Be sure to make a note of your User ID and Password so that you do not forget them.

ログイン／Login

■ After the First Time Registration

1. Log in to "My Page" using your User ID and Password.
2. If you forgot your User ID 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. Select your "Application Group," "Selection Group," and "Program Group," 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."

* Be sure to check all the content you entered. (You cannot change information after the registration is complete.)
* 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.
* 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 2020 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

ログイン／Login

出願状況確認

出願書類(PDF)の表示

EMS

1. Log in to the "My Page" through the Internet application website.
2. Select "the application situation [出願状況の確認]" and then "the display of the application documents (PDF) [出願書類(PDF)の表示]."
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 24 (Wed.), 2020.

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 address: 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 (Wed.), 2020.

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 (Wed.), 2021.

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 7 (Thu.), 2020.

10 Announcement of Selection Result

10.1 Date and Time

Noon on June 29 (Mon.), 2020

10.2 Announcement Method

a The examinee's numbers of the successful applicants will be displayed on the following bulletin boards of the Prefectural University of Hiroshima. Furthermore, successful applicants will be mailed an acceptance letter.

Hiroshima Campus	Entrance of Educational Research Bldg. 1
Shobara Campus	South side of Bldg. 1 (outside)

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/

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 30 (Tue.) ~ July 14 (Tue.), 2020

* Make sure that the admission documents will reach us no later than July 14 (Tue.).

* 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 23 (Wed.), 2020, 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: puhnyusi@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 (Wed.), 2021.

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 Information for International Students from Academic Exchange Schools in Our Graduate School of Comprehensive Scientific Research, Program in Biological System Sciences (2020)

The following introduces your accommodations after entering our school and your student life in Shobara.

<Accommodations>

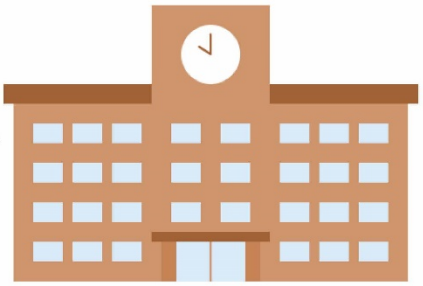
[Lodging fees] Free (For students entering in the 2019 academic year)
Note: Limited to two standard years of study after entering in the 2020 academic year

[Electric, water, gas fees] 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.
- These lodgings are for students living alone.
  We will introduce commercial apartments for students accompanied by family members.

<Student Life>

- Free school bus goes to the University.
  *Bus stop is in front of accommodations.
- 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 gastrointestine. We explore the significance of leptin receptor signaling in the development of inflammatory diseases and tumorigeneis in the gastrointestine.	・Determine the role of leptin receptor signaling in cell differentiation and proliferation of epithelial cells in the gastrointestine. ・Clarify the role of leptin receptor signaling in modulation of the immune system supporting inflammation and tumorigenesis in the gastrointestine.
	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.	・ Plant cell, tissue and organ culture ・ Transformation ・ Cell manipulation ・ Histochemical analysis ・ Metabolic engineering
	Prof.	Toshifumi SAKAGUCHI Microbiology sakaguchi@pu-hiroshima.ac.jp	Development and creation of biomaterials and biofunctions based on biotechnology and genetic engineering by using microbes for bioremediation and eco-monitoring. Fundamental researches on environmental microorganisms, extremophiles and biomineralization toward technological application.	・Development of biomaterials and biofunctions for bioremediation. ・Development of ecomonitoring systems, biodevices, biosensors by microfabrication techniques. ・Synthesis of bionano-particles based on biomineralization. ・Fundamental researches on biomineralization of metalloidsand metals. ・ Search and isolation of functional microbes and extremophiles toward technological applications.
	Prof.	Toshiki YAGI Structural Biology of Supramolecule yagit@pu-hiroshima.ac.jp	To understand the molecular mechanism of ciliary and flagellar movements, we have been analyzing the motility of *Chlamydomonas* mutants lacking specific axonemal components. Our research focus is dynein, a ciliary motor protein.	・ 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.

Field	Position	Name, Subject (Class) Email	Outline of Research	Research Topics
Applied Life Science	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.	・ 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.	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.	・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
	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 *in vitro* maturation for domestic animals, and assisted reproductive techniques for humans.	・Analysis of secretory mechanisms of EGF-like factor in granolosa/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 inovulation 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.	・ 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.
	Prof.	Kenji FUKUNAGA Genetic Improvement of Plant Function fukunaga@pu-hiroshima.ac.jp	Conservation, evaluation and utilization of plant genetic resources. 1) Evaluation of genetic diversity of landraces and wild relatives based on agronomic traits and DNA markers. 2) Isolation and analysis of the genes conferring agronomic traits and analysis of mechanisms for diversification of cultivated plants.	・Analysis of genetic diversity of Japanese landraces of foxtail millet based on agronomic traits and DNA markers. ・Comparison of mechanisms causing waxy variants among cereal species. ・Isolation and analysis of rice gene homologs from foxtail millet. ・Mapping and isolation of morphogenesis genes in cereals.
	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.	・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.	・ 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.	・ 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.	・ 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 filminess.
	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.	・ Developing waste treatment technologies for minimizing environmental impact. ・ Study of material recycling technologies and systems. ・ Research on techniques for assessing health risks.
	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.	・ 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.	・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.

Field	Position	Name, Subject (Class) Email	Outline of Research	Research Topics
Environmental Science	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.	・ 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.
	Assoc. Prof.	Kanako NAITO Hydrospheric Environmental Chemistry naito@pu-hiroshima.ac.jp	We study the role of trace metals, especially iron, on phytoplankton in hydrospheres. We investigate the mechanisms of red tide outbreaks in coastal areas, and develop effective strategies to combat the threat of harmful algal blooms through management and mitigation.	・Elucidation of the mechanisms of iron uptake by eukaryotic phytoplankton ・Elucidation of the physiological and ecological specificity of microalgae causing red tides ・Study on the seasonal dynamics of microalgae and trace metals in hydrospheric environments ・Development of a chemically defined artificial medium for harmful algae
	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.	・ 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
	Assoc. 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.	・ 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

◊ Program in Biological System Sciences

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