

# **The Frontier Development Program for Genome Editing**

Doctoral Program for World-leading Innovative & Smart Education (WISE)

## **Application Guide for Admission**

Special Selection for Applicants from Hiroshima University

**Enrollment April 2023**

December 2022



**HIROSHIMA UNIVERSITY**

## **Admission Policy**

The Frontier Development Program for Genome Editing of the Graduate School, Hiroshima University expects to admit students who have the following aspirations and motivations, as well as the basic academic ability necessary to learn specialized expertise in this program.

Students who:

1. Are highly motivated to learn about genome editing technologies, and who have the basic academic ability in the areas of study related to fundamental biology, molecular science, biofunctional science, environmental science, biological resource science, biological production science, food science, biological engineering, medicine, pharmacology, dentistry, and health science;
2. Are willing to acquire expertise to make effective use of genome editing technologies, thereby developing their research capabilities to play an active role in a company;
3. Aim to create innovative technologies that will form the core of key industries, by acquiring the capability to develop new technologies (for genome alterations and delivery);
4. Aim to obtain the capability to flexibly adapt to changes in industrial structures as new industries emerge, by developing a sense of ethics as well as knowledge of social trends regarding genome editing-related regulations, etc.; and
5. Aim to acquire the qualities and capabilities needed to work as highly specialized professionals, through pursuing learning and research activities at the graduate school, based on their scientific and logical thinking ability and communication skills.

In order to admit such individuals, The Frontier Development Program for Genome Editing selects applicants through a multifaceted and comprehensive evaluation process based on its own Diploma Policy and Curriculum Policy, using document screening and interviews.

## Program Overview

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

In the first and second years, students will learn both basic and advanced genome-editing techniques. From the third year, they will conduct their research while applying the knowledge that they have acquired from the course. Through basic courses on social implementation of technologies and internships, they will be trained to become experts with the capacity to work at the cutting edge of genome-editing technology.

- ▶ The course is a 5-year integrated PhD program for graduate students.

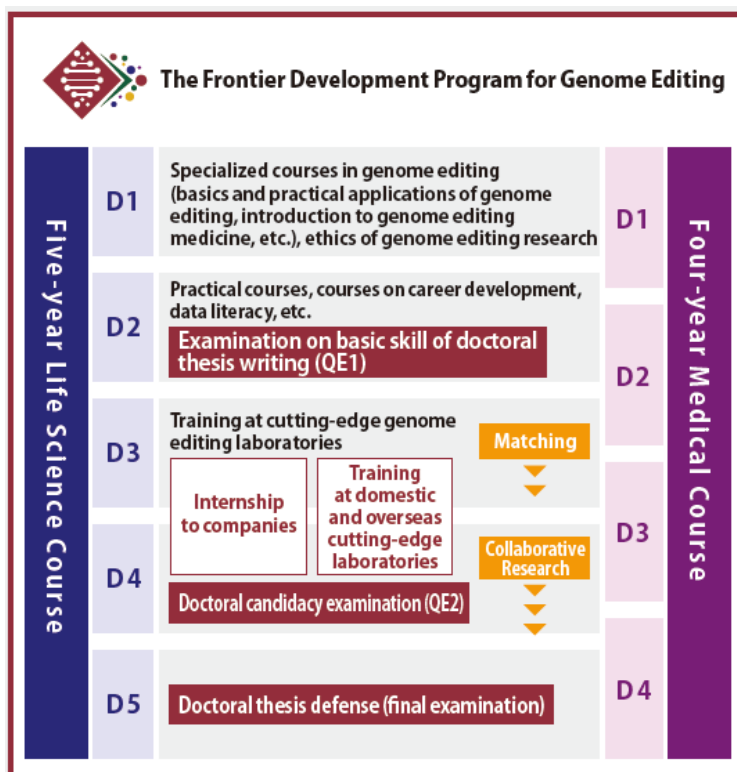
\*There is also a 3-year doctoral program for postgraduate students. (Transfer Admission into 3rd year)

### Medical Course (4-year curriculum):

After systematically learning the basic and advanced genome editing technologies in the first and second years, students will conduct research for their doctoral thesis, while applying the knowledge that they have acquired from the course. In addition, through internships at domestic and overseas partner institutes, they will be trained to be able to work at the cutting edge of genome editing in the medical field.

- ▶ The course is a 4-year integrated PhD program for graduates from 6-year professional schools and masters.

### Schematic diagram of this Program



Students acquire the ability to apply technologies to society (ability for social implementation) under an organization that enables them to experience the speed of advanced research.

\*A student of this program is required to satisfy the requirements of both his/her major in the graduate school and this program simultaneously.

As specified below, Hiroshima University seeks students wishing to enroll in the “Frontier Development Program for Genome Editing” in April 2023.

### 1. Number of Students to Be Admitted

Course	Number of Students	Remarks
Life Science Course (5-year curriculum)	Several students	
Life Science Course (3-year curriculum)	Several students	*Transfer Admission into 3 <sup>rd</sup> year
Medical Course (4-year curriculum)	Several students	

### 2. Eligibility for Application

Those who satisfy one of the following eligibility requirements and who are going to belong to a research group of a faculty member listed in the “7. List of Program Members”.

(1) Those who have been admitted to either the Division of Integrated Sciences for Life, the Graduate School of Integrated Sciences for Life or the Division of Biomedical Sciences, the Graduate School of Biomedical and Health Sciences for April 2023 enrollment.

(2) Those who have applied for admission to the above graduate schools for April 2023 enrollment.

\*Those who fail to pass the above graduate school entrance examinations will lose their eligibility for application.

\*Those who have been admitted to or have applied for 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 for application to this program.

### 3. Application Procedures

All applicants must consult the prospective advisor who has to be a faculty member listed in the “7. List of Program Members” regarding whether or not their planned research activities are appropriate for the program and obtain his/her consent before applying to a program.

(1) Application period

The application period shall run from February 2 to February 8, 2023 with a 5:00 p.m. (JST) deadline

\*Office hours are from 8:30 a.m. to 5:00 p.m. for application submissions.

(2) Application documents

Document Name	Remarks
Application Form	Use the prescribed form. *see Note 1
Personal History	Use the prescribed form. *see Note 1
Research Plan	Use the prescribed form. *see Note 1 *Approximately two pages in A4 sheet *Tables and figures can be inserted

Photocopy of Examination card or Acceptance letter	<p>(a) Submit a photocopy of the Hiroshima University Graduate School Acceptance letter: those who have been admitted to the Hiroshima University Graduate School.</p> <p>(b) Submit a photocopy of the Hiroshima University Graduate School Examination card: those who have applied for the Hiroshima University Graduate School entrance examination.</p> <p>*Applicants who are unable to submit either document by the end of the application period must contact the Collaboration Office “6. Inquiries and Submission.”</p>
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(Note 1) Prescribed form can be downloaded from the website below.

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

(Note 2) No application fee will be charged.

### (3) Submission of application documents

#### (a) Submission method

By the end of the application period, submit the application documents in person or by post (use registered post or any other method that retains a delivery record), as a general rule. If you submit your application documents by post, write in red “Application for the Frontier Development Program for Genome Editing” on the envelope.

Your application will not be accepted if your application documents do not reach us by the end of the application period, or if your application documents are incomplete.

#### (b) Where to submit application documents

See “6. Inquiries and Submission”

### (4) Others

(a) The contents of the application documents may not be altered after submission.

(b) Submitted application documents will not be returned to applicants.

(c) Personal information (name, date of birth, gender, etc.) recorded on the application forms will be used only for the selection of applicants and notification of successful applicants and in enrollment procedures. Such personal information will not be used for any other purposes or be seen by anyone excluding the staff of the university. Subject to the conclusion of an agreement concerning the appropriate use of personal information, there may be cases where related tasks are entrusted to companies outside the university for the purpose of computer processing.

## 4. Selection Procedure

### (1) Oral Examination

- Life Science Course

Date: February 22, 2023

Venue: Hiroshima University Higashi-Hiroshima Campus

- Medical Course

Date: February 28, 2023

Venue: Hiroshima University Kasumi Campus

\*Detailed information on the time and the venue will be sent to the applicants separately.

\* At the venue specified by the university, applicants will take an oral examination (approximately 15 minutes per person) based on their application documents to be evaluated on their basic scholastic ability and English proficiency.

## (2) Admission decision

The admission decision will be made in a comprehensive manner considering the results of documentary screening and oral examinations. In the selection, applicants will be evaluated on a three-point scale with regard to the following criteria:

Motivation for the program, aptitude in the field, and basic scholarship skills

## (3) Announcement of successful applicants

Announcement expected at 10:00 a.m., March 16, 2023

Announcement of successful applicants will be made on the website of the Frontier Development Program for Genome Editing. Successful applicants will also receive letters sent by post. As a general rule, we will not answer telephone inquiries about selection results.

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

## 5. Financial Support for Students

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

(1) 50,000 yen per month (600,000 yen per year) will be provided for up to three students per year to students who are recognized as displaying excellent academic performance and having outstanding achievements in academic activities after enrolling, beginning the following year after enrollment in the program.

(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 all years of the Medical Course (Some students may be ineligible due to their academic performance.)

(3) Ikenoue Student Dormitory is available with priority for two years after enrollment in the program.

(\*Boarding fee, common expenses, and utility fee will be charged.)

\*The above details regarding financial support in (1), (2), and (3) are as of April 1, 2022 and are subject to change.

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

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

## 6. Inquiries and Submission

**Collaboration Office, Education Office, Hiroshima University**

1-1-1 Kagamiyama, Higashi-hiroshima City, Hiroshima, Japan 739-8524

(Room 809, Building B of the Graduate School of Education)

Tel: 082-424-6819 E-mail: [leading-program@office.hiroshima-u.ac.jp](mailto:leading-program@office.hiroshima-u.ac.jp)

\*When you send an e-mail of inquiry, please indicate your name and nature of inquiry such as “About application” in its subject.

## 7. List of Program Members

All applicants must consult the prospective advisor who has to be a faculty member listed in the “7. List of Program Members” regarding whether or not their planned research activities are appropriate for the program and obtain his/her consent before applying to a program.

(1) The following list is effective as of October 1, 2022 and is subject to change.

(2) A student in the Life Science Course shall belong to the Division of Integrated Sciences for Life, the Graduate School of Integrated Sciences for Life.

A student in the Medical Course shall belong to the Division of Biomedical Sciences, the Graduate School of Biomedical and Health Sciences.

(3) A student in the program is required to satisfy the requirements for both his/her major in the graduate school and this program simultaneously.

(4) An applicant who wishes to work with a program member with “\*” mark in the list as an academic supervisor must contact the Collaboration Office “6. Inquiries and Submission” before applying to a program.

### 【Life Science Course】

Name	title	Specialty	Program Name of the Division of Integrated Sciences for Life, Graduate School of Integrated Sciences for Life
YAMAMOTO Takashi	Professor	Genome biology	Program of Mathematical and Life Sciences/ Program of Biomedical Science
BONO Hidemasa	Professor (Special Appointment)	Bioinformatics	Program of Mathematical and Life Sciences/ Program of Biomedical Science
SAKAMOTO Naoaki	Associate Professor	Molecular biology	Program of Mathematical and Life Sciences/ Program of Biomedical Science
SAKUMA Tetsushi	Associate Professor	Genome biotechnology	Program of Mathematical and Life Sciences/ Program of Biomedical Science
SUGI Takuma	Associate Professor	Behavioral Systems Biology	Program of Mathematical and Life Sciences/ Program of Biomedical Science
OCHIAI Hiroshi (Retirement at the end of February 2023)	Associate Professor	Molecular biology	Program of Mathematical and Life Sciences/ Program of Biomedical Science
SAKAMOTO Atsushi	Professor	Plant molecular biology, Plant physiology	Program of Mathematical and Life Sciences
SHIMADA Hiroshi	Associate Professor	Plant molecular cell biology	Program of Mathematical and Life Sciences
TANAKA Nobukazu (Retirement at the end of March 2023)	Professor (Special Appointment)	Plant Molecular biology	Program of Biotechnology
TODA Takashi (Retirement at the end of July 2023)	Professor (Special Appointment)	Molecular cell biology	Program of Biotechnology

Name	title	Specialty	Program Name of the Division of Integrated Sciences for Life, Graduate School of Integrated Sciences for Life
UENO Masaru	Associate Professor	Molecular cell biology	Program of Biotechnology/ Program of Biomedical Science
FUJIE Makoto	Associate Professor	Plant cell biology	Program of Biotechnology
SHIMADA Masayuki	Professor	Reproductive biology	Program of Food and AgriLife Science/ Program of Bioresource Science
HORIUCHI Hiroyuki	Professor	Animal cell technology, Immunobiology	Program of Food and AgriLife Science
YANAKA Noriyuki	Professor	Molecular nutritional science	Program of Food and AgriLife Science
SATOH Akiko	Professor	Cell biology	Program of Life and Environmental Sciences
UKENA Kazuyoshi	Professor	Neuroendocrinology	Program of Life and Environmental Sciences/ Program of Biomedical Science
WASAKI Jun	Professor	Plant nutrition	Program of Life and Environmental Sciences/ Program of Bioresource Science
IMAMURA Takuya	Professor	RNA biology, Epigenetics	Program of Basic Biology/ Program of Biomedical Science
CHIHARA Takahiro	Professor	Neurogenetics	Program of Basic Biology/ Program of Biomedical Science
OGINO Hajime	Professor	Developmental biology, Evolutionary biology	Program of Basic Biology/ Program of Biomedical Science
HAYASHI Toshinori	Professor	Regeneration biology, Developmental biology	Program of Basic Biology/ Program of Biomedical Science
HAMAOKA Kozue	Associate Professor	Cell biology	Program of Basic Biology/ Program of Biomedical Science
OKUMURA Misako	Associate Professor	Neuroscience	Program of Basic Biology/ Program of Biomedical Science
TAGAWA Kunifumi	Associate Professor	Evolutionary developmental biology	Program of Basic Biology

### 【Medical Course】

Name	title	Specialty	Program Name of the Division of Biomedical Sciences, Graduate School of Biomedical and Health Sciences
ADACHI Nobuo (Retirement at the end of March 2028)	Professor	Knee joint surgery	Program of Medicine
OHDAN Hideki (Retirement at the end of March 2028)	Professor	Surgery, Gastrointestinal surgery, Transplantation, Immunology	Program of Medicine
OKADA Satoshi	Professor	Immunology	Program of Medicine
KUDO Yoshiki (Retirement at the end of March 2025)	Professor	Obstetrics and gynecology	Program of Medicine
SAKAGUCHI Takemasa (Retirement at the end of March 2026)	Professor	Virology	Program of Medicine
SOTOMARU Yusuke	Professor	Reproductive and developmental engineering	Program of Medicine



Name	title	Specialty	Program Name of the Division of Biomedical Sciences, Graduate School of Biomedical and Health Sciences
HATTORI Noboru (Retirement at the end of March 2026)	Professor	Molecular and internal medicine	Program of Medicine
MARUYAMA Hirofumi	Professor	Clinical neuroscience and therapeutics	Program of Medicine
YASUDA Tomoharu	Professor	Immunology	Program of Medicine
SHUKUNAMI Chisa	Professor	Molecular biology	Program of Dental Sciences
TANIMOTO Kotaro	Professor	Orthodontics	Program of Dental Sciences
KAMIYA Hiroyuki	Professor	Pharmacy, Biological pharmacy	Program of Pharmaceutical Sciences
NOMURA Wataru	Professor	Chemical pharmacy, Bio-related chemistry	Program of Pharmaceutical Sciences
ICHINOHE Tatsuo	Professor	Hematological malignancies, Cell transplant science	Program of Radiation Biology and Medicine
KAMINUMA Osamu	Professor	Laboratory Animal Science, Immunology	Program of Radiation Biology and Medicine
KAWAKAMI Hideshi (Retirement at the end of March 2025)	Professor	Neurogenetics	Program of Radiation Biology and Medicine
KUME Kodai (*)	Associate Professor	Neurogenetics	Program of Radiation Biology and Medicine
MATSUURA Shinya (Retirement at the end of March 2026)	Professor	Genetic medicine	Program of Radiation Biology and Medicine

## 8. Total ban on smoking in Campus

Smoking has been prohibited entirely in all Hiroshima University campuses.