Academic Year 2019

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

Transdisciplinary Program for Biomedical Entrepreneurship and Innovation

Application Guidelines

January, 2019
Institute for Transdisciplinary Graduate Degree Program
Admission Policy

Student Attributes
We look for students who have high aspirations and exceptional qualities, as outlined below.

- Strong interest in biomedical science
- Curiosity to explore the unknown
- Capability to assess and oversee their own research results objectively
- Interdisciplinary communication skills
- Flexibility to incorporate insights from other fields rather than adhering solely to one’s own field of expertise
- International mindset for a global tomorrow
- Succinctness in expressing any subject matter including their own research
- Leadership potential to build a future in academia, industry, and government

1. Overview of WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation”

The mission of biomedical science is to elucidate mechanisms of life activities in humans. To achieve this goal, harmonious circulation of the “Research and Development (R&D) Ecosystem” is an absolute necessity involving each of the following activities: implementing impactful basic research results into society under sound, strict ethical principles; providing feedback about new issues discovered in the process of creating a rich quality of life in society; and performing further research to find solutions for these newly-discovered issues. Therefore, it is imperative that we nurture professionals who hold a doctoral degree with practical research skills to achieve first-class research results and oversee biomedical science objectively, as well as entrepreneurial skills to be able to implement research results in society.

The number of new academic licenses in Japan is approximately 40% of that in the U.S., whereas licensing revenue is a mere 1% of that in the U.S. These figures indicate that the R&D Ecosystem is not functioning satisfactorily, and academic research outcomes have not been fully implemented.

From these perspectives, there is an immediate need for an educational breakthrough in Japan. Students need to be nurtured so that they become professionals enabling biomedical science research results to be implemented in society. Advances in life activities in humans cannot be expected by residing in a narrowly focused conventional research area; it is not possible to even scrape the surface of elucidating mechanisms of life activities in this way. However, entrepreneurial experts with knowledge of social implementation cannot identify impactful research outcomes; thus, those with the ability to judge the uniqueness and superiority of research must also develop the ability to implement these research outcomes in society. Truly valuable social implementation skills can only be acquired by researchers who have achieved research results.

This program’s mission is to produce professionals who possess practical research skills to be able to stay ahead of the international race to achieve impactful research results by uniting academia, industries in and outside Japan, and governments; and social implementation skills to be able to effectively and swiftly apply their own research outcomes in society.
Our program’s mission is to produce professionals who:

- hold a doctoral degree, with research skills to oversee biomedical science objectively, and entrepreneurial skills to be able to implement research results in society.
- can accurately analyze the value and potential of research results from an academic perspective; promote implementation of research results by assessing them from different perspectives such as intellectual property, marketability, and regulatory scientific viewpoints; and further contribute to the cycle of the R&D Ecosystem.

Osaka University’s unique interdisciplinary education will also allow students to nurture the ability to have an objective perspective.

2. **Unique Characteristics of “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation”**

**[Unique Characteristics]**

This program is a “major” degree program rather than a “minor” program that is traditionally offered by the Program for Leading Graduate Schools (Note 1).

Students who wish to enroll in this program who were accepted by one of the following programs (Graduate School of Medicine (Medicine/Health Sciences), Dentistry, Pharmaceutical Sciences (Advanced Pharmacoscience/Medical Pharmacy), and Frontier Biosciences must pass a selection examination to be admitted.

Students in Medicine (Health Sciences), Pharmaceutical Sciences (Advanced Pharmacoscience), and Frontier Biosciences will be admitted to the 5-year program (Masters and PhD combined). Students in Medicine (Medicine), Dentistry, and Pharmaceutical Sciences (Medical Pharmacy) will be admitted to the 4-year program. Each program admits a maximum of 15 students. The 5-year program begins in April 2019, and the 4-year program begins in April 2020.

After being admitted to the program, students will receive interdepartmental social implementation education while receiving education specific to the Graduate School of their affiliation. Students will receive intensive education in their chosen field with a smaller number of credits than normally necessary to complete a graduate degree. For example, 30 credits are required to complete the Graduate School of Medicine (Medicine) program, whereas in our program, students can receive the same education with 20 credits at the Graduate School.

The completed degree certificate will specify “Completion of Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” in addition to the degree obtained from their affiliated graduate school program.

The interdepartmental social implementation education nurtures students’ research skills in the first half of the program, and entrepreneurial skills in the second half.

The difference between the 4-year program and the 5-year program is that the students in the 5-year program will receive introductory education to Medicine, Dentistry, and Pharmaceutical Sciences and gain first-hand experience on what it is like to be in the clinic during their first year.

To nurture research skills, the first half of the program offers “interdepartmental interdisciplinary biomedical education,” which includes opportunities for discussions with exceptional researchers to cultivate the key communication skills that go beyond disciplinary boundaries.

To nurture entrepreneurial social implementation skills, the latter half of the program offers content that has not previously been offered as an integrated program to biomedical students in Japan, such as doing market research and needs analysis, receiving education related to intellectual property strategy and regulatory science, and practical training in social implementation.

In this program, major corporations in and outside Japan and the academia-industry-government network (Note 2) participate in providing comprehensive internships and overseas practicum programs. The education system unifying academia-industry-government utilizes connections with global corporations.

Furthermore, this program offers interdisciplinary education unique to Osaka University, integrating sciences and liberal arts so that students gain the skills necessary to oversee research objectively.
To obtain a degree with a minor, students must complete the credits specific to a minor program in addition to the required credits for the affiliated Graduate Program, whereas a major degree program is completed by obtaining all required credits. Therefore, the burden to students tends to be lighter for a major degree program than with a minor program.


At the end of the 3rd year, students will take the Qualifying Examination (QE) to assess their research skills. In addition to evaluating the skills acquired through the education received specific to the Graduate School of a student’s affiliation, the faculty members of the University will assess the research outcomes through the lens of knowledge gained in the social implementation courses “Introduction to Medicine, Dentistry and Pharmaceutical Sciences” and “Interdepartmental Interdisciplinary Biomedical Sciences,” and their merits as state-of-the-art research results leading to social implementation.

Upon successful completion of the QE, students will advance to the 4th and 5th years to acquire social implementation skills. At the end of the 5th year, students will present an issue for social implementation of their research results as well as the outcomes of executing their problem-solving plan. This will be evaluated not only by the faculty members of the University, but also by the representatives from corporations in charge of the program. Upon successfully passing this evaluation assessment, students are judged as having social implementation skills.

At the end of students’ 5th year, each Graduate School of their affiliation will also assess the quality of the candidates’ work. After successfully passing two assessments in the 5th year of the program, and being judged as having both research and social implementation skills, students will receive a degree certificate from the Graduate School of their affiliation that additionally specifies “Completion of Transdisciplinary Program for Biomedical Entrepreneurship and Innovation.”
3. Student Attributes

We accept applications from a wide range of students from the following schools:

- Graduate School of Medicine: Medicine, Health Sciences
- Graduate School of Frontier Biosciences: Frontier Biosciences
- Graduate School of Pharmaceutical Sciences: Advanced Pharmaco-Science, Medical Pharmacy
- Graduate School of Dentistry: Oral Science

The most suitable students with the following qualities are selected:

- Strong interest in biomedical science
- Curiosity to explore the unknown
- Capacity to assess and oversee their own research results objectively
- Interdisciplinary communication skills
- Flexibility to incorporate insights from other fields rather than adhering solely to one’s own field of expertise
- International mindset for a global tomorrow
- Succinctness in expressing any subject matter including their own research
- Leadership potential to build a future in academia, industry, and government

4. Selection Policy

Students who wish to participate in this program must be accepted to one of the Graduate Schools. Furthermore, the selection process for this program occurs in two steps. The first step assesses the academic abilities demonstrated thus far and the determination to participate in this program using the information in the application form such as the motivation for application and the entrance examination score for Graduate School. The second step assesses the aforementioned “student attributes” in an interview.
2019 Academic Year Osaka University WISE Program (Doctoral Program for World-leading Innovative & Smart Education)

Student Admission Guidelines for “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation”

Osaka University WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” admits students based on the admission policy.

Number of Students: Approximately 15 students who hold a 4-year undergraduate degree or expecting to receive one prior to the commencement of the program

Qualification for Application

- Students who hold a 4-year undergraduate degree or are expecting to receive one prior to program commencement may be eligible for the 5-year program

1. Students who plan to start their master’s program (Medicine (Health Sciences), Pharmaceutical Sciences (Advanced Pharmaco-Science)) at Osaka University in April 2019.

2. Students who plan to start their 5-year program (master’s and PhD combined in Frontier Biosciences) in the Graduate School at Osaka University in April 2019.

*For international students: The majority of courses in the first-year curriculum for this program are offered in Japanese. To evaluate a candidate’s Japanese language ability during the selection test, interviews are conducted in Japanese.

Application Method: Those who satisfy “Qualification for Application” should follow the process described below.

①Application Method: Mail the document or hand deliver to the application submission office. (Mail submission is preferable.)

②Application Submission Period: Between Monday, March 4th and Friday, March 8th, 2019 * Excludes Saturday, Sunday and Holidays

(Apply Office Hours: 9:30 a.m. to 11:30 a.m., and 1:30 p.m. to 4:00 p.m.)

(Application deadline by mail is Friday, March 8th, 2019 at 4:00 p.m.)

③Application Submission Office: Education Office at the Graduate School of Medicine

④Submission Documents: A set of application documents listed in Form 1 in the table

【Method for Mailing the Application】

Mailing Address:
Education Office of Graduate School of Medicine, Osaka University
2-2 Yamadaoka, Suita, Osaka 565-0871

Use a Kaku 2 envelope (approximately 33 x 24 cm); package must be sent as registered express mail. (A mailed application that arrives after the deadline can be accepted only if the stamped date is on or prior to March 5th, 2019, originating from a Japanese postal office.)
【Method for E-mailing the Application】
Application Submission E-mail Address: takuetsu@office.med.osaka-u.ac.jp

The subject line must be “WISE Program Application” and you must password-protect each of the submitted documents and attach them to the e-mail.

Application Fee

There is no application fee required.

List of Application Documents

<table>
<thead>
<tr>
<th>Document</th>
<th>Content</th>
</tr>
</thead>
</table>
| 1 | Statement of Interest (Form 1) | [This document is subject to document selection.] Please review the admission policy and fill out the specified form. In addition, make sure to attach a picture (taken within 3 months of the date of application).

* Please select the option to agree with the policy allowing access to your entrance exam score for Graduate School, for the purpose of using it in the WISE Program selection process.*

* It is preferable to type in the form. Please download the document from the program homepage (*).*

Selection Process

<table>
<thead>
<tr>
<th>Selection Process (Content)</th>
<th>Period</th>
<th>Time</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Application Submission Period</td>
<td>Monday, March 4th to Friday, March 8th, 2019</td>
<td>As described on p.5 “3 Application procedures”</td>
<td>As described on p.5 “3 Application procedures”</td>
</tr>
<tr>
<td>Results of Document Selection</td>
<td>Tuesday, March 12, 2019</td>
<td>10:00 a.m. (planned)</td>
<td>On the homepage (*)</td>
</tr>
<tr>
<td>Selection Test (Interview)</td>
<td>Tuesday, March 19, 2019</td>
<td>9:00~15:00 (More details are communicated separately)</td>
<td>Osaka University, Center of Medical Innovation and Translational Research Building</td>
</tr>
<tr>
<td>Announcement of Final Selection Results</td>
<td>Friday, March 22, 2019</td>
<td>10:00 a.m. (planned)</td>
<td>On the homepage (*)</td>
</tr>
</tbody>
</table>

( *) Homepage URL: https://www2.med.osaka-u.ac.jp/bei/

You will be notified of your application number that was assigned after your application is accepted, at the e-mail address listed on the statement of interest form. If you do not receive an e-mail by the morning of Monday, March 11th, 2019, please contact the Education Office at the Graduate School of Medicine.

Notes on Selection Process

1 Document selection is determined by the information in the statement of interest form. The selection results will be posted by listing the application numbers of accepted applicants on the homepage of WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” on Tuesday, March 12th, 2019, as well...
as by sending a notification to the e-mail address provided in the statement of interest form. We do not respond to phone inquiries.

The selection test (an interview) will be given only to applicants who pass the document selection process. Information about where the interviews will be held and other important details will be posted on the above-mentioned homepage.

Final selection results

The final selection results will be posted by listing the application numbers of accepted applicants on the homepage of WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” on Friday, March 22, 2019, as well as by sending a notification to the e-mail address provided in the statement of interest form. We do not respond to phone inquiries.

Registration Procedures

Those who are accepted to WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” need to register for the program. There are no extra admission fees or tuition fees for enrolling in this program. The details will be sent to accepted students.

Program Content

Please refer to the homepage for details about the program content of WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation”.

Handling of Personal Information

The name, address, and other personal information submitted with the application are used for the purpose of performing the tasks related to WISE Program such as the selection process (application handling and selection test), the announcement of selection results, and registration procedures.

For the WISE Program enrollment application, you are required to agree with allowing access to your score for the Graduate School entrance examination.

The personal information used for the selection process, such as examination scores, will be used for the purpose of investigations and research of the selection method as well as aggregating and analyzing selection results.

While performing tasks described in 1 to 3 above, some of the tasks may be outsourced to contractors outside the University. In this case, an agreement will be made with regards to proper handling of personal information, and part or all of such personal information will be given to the contractors for the purpose of performing the tasks.

Financial Support

As compensation for participating in research assistant activities, financial support may be given.

Notes

Incomplete application forms will not be accepted.

As a general rule, changes to content after application submission are not permitted.
Submitted documents will not be returned.

An application number will be assigned after the application is received, and you will be notified by e-mail.

If information provided in the application documents is found to be fabricated, acceptance to the program may be withdrawn, even after successful acceptance into the program.

Make sure to notify your intention of enrolling in WISE Program to your potential supervisor at a research laboratory of a Graduate School.

If you have physical disabilities that require special arrangements for the selection test, please contact the Education Office at the Graduate School of Medicine by Monday, March 4, 2019.

Q&As related to application guidelines will be posted on the homepage of WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” (https://www2.med.osaka-u.ac.jp/bei/) as necessary.
Inquiries and Document Requests

Education Office, Graduate School of Medicine, Osaka University

2-2 Yamadaoka, Suika, Osaka 565-0871

PHONE: 06-6879-3346 (Direct)  FAX: 06-6879-3347
E-mail: takuetsu@office.med.osaka-u.ac.jp  URL:https://www2.med.osaka-u.ac.jp/bei/