Academic Year 2020

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

Transdisciplinary Program for Biomedical Entrepreneurship and Innovation

Application Guidelines

September, 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 “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 Pharmacology/Medical Pharmacy), and Frontier Biosciences must pass a selection examination to be admitted.

Students in Medicine (Health Sciences), Pharmaceutical Sciences (Advanced Pharmacology), and Frontier Biosciences will be admitted to the 5-year program (Master’s degree and PhD). 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.

After being admitted to the program, students will receive interdepartmental social implementation education while receiving education specific to the Graduate School of their affiliation. Regardless of the Graduate School to which they belong, the number of credits required to complete the program is approximately the same.

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.

In addition, to nurture research skills, the first half of the program offers “interdepartmental interdisciplinary biomedical education,” which includes opportunities for interactions with accomplished researchers to cultivate key communication skills that extend 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.

(Note 1) To obtain a degree with a minor, students must complete the credits specific to the minor program in addition to the required credits for the affiliated Graduate Program, whereas the curriculum is designed such that students in a major degree program are required only to complete the program credits of their affiliated Graduate School. Therefore, the burden to students tends to be lighter for a major degree program than with a minor program.

(Note 2) Participating organizations outside the University: Biomedical Research Victoria, Pfizer Inc., Novartis Pharma, Johnson & Johnson Innovation, IQVIA, Bayer Yakuhin Ltd., Eli Lily Japan, Chugai Pharmaceutical Co.
[Quality Assurance of the Degree]

At the end of the third year of the 5-year program, or the end of the second year of the 4-year program, the Qualifying Examination (QE) is given to assess students’ research skills. In addition to evaluating the skills acquired through the education received specific to the Graduate School of the 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 Qualifying Examination (QE), students will advance to the next level of education to acquire social implementation skills. At the end of the final year of the program, students will present an issue for social implementation, their research results, and 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.

Furthermore, each Graduate School of their affiliation will also assess the quality of the candidates’ work. After successfully passing these two assessments, 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.
Number of Students

Approximately 15 students are accepted for each of the 4- and 5-year programs.

Qualification for Application

- For the 5-year program
  1. Students who plan to start their Master’s program in Medicine (Health Sciences), Pharmaceutical Sciences (Advanced Pharmaco-Science) at Osaka University in April 2020.
  2. Students who plan to start their 5-year program (PhD in Frontier Biosciences) in the Graduate School at Osaka University in April 2020.

- For the 4-year program
  1. Students who plan to start their PhD program in Medicine (Medicine), Dentistry (Oral Science), Pharmaceutical Sciences (Medical Pharmacy) at Osaka University in April 2020.

*For international students: The majority of courses in the 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 Procedures

Those who satisfy “2 Qualification for Application” should follow the process described below.

Application Method: Online submission (Please apply using the online application form.)

URL: https://www2.med.osaka-u.ac.jp/bei/course-method/

Note: Please do not protect the application document with a password.

Application Submission Period: Friday, February 21st to Friday, February 28th, 2020 at 12pm

Submission Documents: Completion of the application documents listed in Form 1 and 2 in the table below

Application Fee

There is no application fee required.
5 List of Application Documents

<table>
<thead>
<tr>
<th>Document Content</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Statement of Interest (Form 1)</td>
<td>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.</td>
</tr>
<tr>
<td>Resume (Form 2)</td>
<td>Please complete the specified form. (This is used as a reference for the document selection and an interview.)</td>
</tr>
</tbody>
</table>

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

6 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>Friday, February 21st to Friday, February 28th, 2020 at 12pm</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>Monday, March 9, 2020</td>
<td>15:00 (planned)</td>
<td>On the homepage (*)</td>
</tr>
<tr>
<td>Selection Test (Interview)</td>
<td>Saturday, March 14, 2020</td>
<td>9:00–17:00 (More details are communicated separately)</td>
<td>Osaka University, Graduate School of Medicine</td>
</tr>
<tr>
<td>Announcement of Final Selection Results</td>
<td>Monday, March 23, 2020</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/

An application number will be sent via e-mail immediately after the submission of the application. If the notification e-mail is not received within 24 hours, please check your spam e-mail folder. If you still do not see the notification e-mail, please contact the Wise Program Office (takueutsu@office.med.osaka-u.ac.jp).

7 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 the WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” on Monday, March 9th, 2020. We do not respond to phone inquiries.

2 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.

8 Final selection results

The final selection results will be posted by listing the application numbers of accepted applicants on the homepage of the WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” on Monday, March 23, 2020. We do not respond to phone inquiries.
9 Registration Procedures

Those who are accepted to WISE Program “Transdisciplinary Program for Biomedical Entrepreneurship and Innovation” need to register for the program. The registration procedure will be posted on the homepage along with the final selection results. There are no extra admission fees or tuition fees for enrolling in this program.

10 Program Content

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

11 Handling of Personal Information

1. 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.

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

3. 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.

4. 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.

12 Financial Support

- As compensation for participating in research assistant activities, financial support may be given.
- All students in the 4-year program and PhD portion of the 5-year program (the third to fifth year in Graduate School of Frontier Bioscience) are eligible for tuition fee exemption. (Tuition fee exemption will be granted for those in good academic standing.) Please note that this system is provided according to the University’s financial situation and other contributing factors each year, and changes in the provision of an exemption may be subject to change in the future.

13 Notes

1. Incomplete application forms will not be accepted.

2. As a general rule, changes to content after application submission are not permitted.

3. Submitted documents will not be returned.

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

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

6. 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 WISE Program Office (takuetsu@office.med.osaka-u.ac.jp) by Friday, February 21, 2020.

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

The WISE Program Office, Graduate School of Medicine, Osaka University
2-2 Yamadaoka, Suika, Osaka 565-0871, Center of Medical Innovation and Translation Research Building, 2nd floor, room 203

PHONE: 06-6210-8230 (Direct) FAX: 06-6210-8232
E-mail: takuetsu@office.med.osaka-u.ac.jp URL: (https://www2.med.osaka-u.ac.jp/bei/)