

文部科学省・卓越大学院プログラム  
Doctoral Program for World-leading INnovative & Smart  
Education  
(WISE Program)

生命科学技術国際卓越大学院プログラム  
World-leading INnovative Graduate Study Program  
for Life Science and Technology (WINGS-LST)



FY2021 Application Guidelines

If any differences in wording or interpretation should occur between the Japanese and English versions of these application guidelines, the Japanese version will take precedence.

These are application guidelines for students hoping to gain a place on the FY2021 integrated master's-doctorate graduate program, "The University of Tokyo World-leading INnovative Graduate Study Program for Life Science and Technology" (Doctoral Program for World-leading Innovative & Smart Education).

## What is WINGS-LST?

### (1) Aim

The World-leading INnovative Graduate Study Program for Life Science and Technology (hereinafter "this program") aims to develop talents who will significantly contribute to human health from a long-term perspective. For this reason, it covers a wide range of life science and technology research fields, from elucidation of basic principles to applied technologies that lead to clinical practice.

In this program, we aim to foster human talents who can create new academic fields in the future by co-developing excellence in three assets: expertise in specialized disciplines, broadness of scientific perspective, and agile engagement with others to develop new opportunities.

### (2) Development of human talents at the frontiers of life science and technology

In this program, we aim to foster human talents at the cutting edge of life science and technology disciplines: we promote *discoveries and elucidation* of mechanistic insights in all phenomena of life using new technologies, while we also develop *novel and advanced technologies* based on scientific principles and theories of life. Innovative areas in academic disciplines and technologies do not arise spontaneously. We believe that they are created by enhancing expertise, broadening perspectives through development of big picture thinking skills and meeting with experts in a variety of fields, and developing interdisciplinary research by engaging others.

**Specialized expertise:** Specialist capability that makes an individual second to none with regard to a particular purpose or area of knowledge.

**Broader perspective:** Based on the expertise above, ability to survey various academic fields and identify fundamental cross-disciplinary problems. Faculty members who will provide guidance to the program students are leaders conducting cutting edge research in their own discipline, while remaining flexible and open to methods and ideas of other fields.

**Agile engagement:** Ability to think about the way research should proceed based on the big picture, and to develop research by building collaborative relationships with researchers in appropriate fields. Communication skills, capacity for understanding, information gathering ability, etc., are also included.

### (3) Program outline

A unique feature of this program is that students are able to learn about both the *elucidation* of life phenomena (related to basic medical sciences and life sciences) *using state-of-art technologies*, and the *technologies* (related to clinical practice and engineering) that contribute to human health *based on the elucidated principles and theories*.

Life science has made tremendous progress and has been able to elucidate new phenomena thanks to many technical developments, such as recombinant DNA technologies based on biochemistry or microscopy based on physics. In parallel, new principles have revealed the target molecules for drug discovery, and new treatment techniques have been created. In other words, in order to elucidate life phenomena and create technologies, an ecosystem where both are performed at a highest level as two halves of a whole is necessary. Therefore, this program aims to promote *knowledge professionals* who can integrate both technology and mechanistic elucidation, as well as contribute to the development of academic disciplines and industries that contribute to human health.

Specifically, in addition to laboratory-based training to build specialized expertise, we conduct multi-disciplinary lectures and exercises that go beyond the existing framework of the Graduate Schools. In particular, we offer lectures and seminars that cover a wide range of basic knowledge on life science, engineering, information technology, etc. Practical training is also provided through laboratory internships in various research laboratories inside and outside the University. Furthermore, lectures and seminars cover the following topics: social implementation; basic regulations on pharmaceuticals, medical devices, and regenerative medicine products; and the basic processes, ethics, and industrialization required for clinical research. In addition, we provide various interdisciplinary programs to actively promote joint research projects across Schools or with collaborators outside the University. We also offer partnerships and internships with companies, as well as overseas summer internships and collaborative research with overseas research institutes.

Progress reviews are undertaken by multiple faculty members to foster research ideas, approaches, and values that differ from those of students' direct supervisors. The formation of networks among students is also important: such networks are likely to prove extremely useful during this program or when creating and developing new scientific fields in the future.

## **Spring FY2021 Application Guidelines for World-leading Innovative Graduate Study Program for Life Science and Technology (WINGS-LST)**

### **(4) Requirements for enrolling in the WINGS-LST program**

In order to apply for this program, students need to satisfy the three requirement categories detailed below: (A) eligible years, (B) eligible majors, and (C) other requirements. (Check “For Students > FAQ” on the WINGS-LST website)

Prospective applicants should also familiarize themselves with the obligations and precautions after enrollment in this program detailed on p. 7 below.

#### **(A) Eligible years**

Those who belong to the graduate school years specified in Table 1 below as of December 2020 are eligible for application.

However, applicants for WINGS-LST have the opportunity to apply only once to any of the following programs: the Program for Leading Graduate Schools, the World-leading INnovative Graduate Study Program (WINGS), or the Doctoral Program for World-leading Innovative & Smart Education of the Ministry of Education, Culture, Sports, Science and Technology (WISE). For example, a student enrolled in the first year of the doctoral program at the Graduate School of Medicine is not eligible for application, if he/she has ever applied for any of those programs and not been selected.

#### **(B) eligible majors**

Those who belong to the graduate school majors or research fields shown in Table 1 below as of December 2020.

Table 1. Students eligible for the WINGS-LST program: Spring 2021,

Graduate School	A. Eligible years as of December 2020	B. Eligible majors as of April 2021
Medicine	[April Enrollment] <ul style="list-style-type: none"><li>Graduate students in 1st year of medical science master's program</li><li>Graduate students in 1st year of doctoral coursework</li><li>Prospective students who will be enrolled in a 4-year doctoral program in FY2021*</li></ul>	In principle, applicants must be engaged in research fields contributing to basic life science or biomedical engineering at the following departments: Molecular Cell Biology Functional Biology Pathology, Immunology and Microbiology Radiology and Biomedical Engineering Neuroscience

		<p>Social Medicine Internal Medicine Surgical Sciences Reproductive, Developmental and Aging Sciences,</p>
Engineering	<p>[September Enrollment]</p> <ul style="list-style-type: none"> <li>Graduate students in 2nd year of master's coursework</li> </ul> <p>[April Enrollment]</p> <ul style="list-style-type: none"> <li>Graduate students in 1st year of master's coursework</li> </ul>	<p>Bioengineering Mechanical Engineering Electrical Engineering and Information Systems Precision Engineering Materials Engineering Applied Chemistry Chemical System Engineering Chemistry and Biotechnology Nuclear Engineering and Management</p>
Pharmaceutical Sciences	<p>[September Enrollment]</p> <ul style="list-style-type: none"> <li>Graduate students in 2nd year of master's coursework</li> <li>Graduate students in 1st year of master's coursework</li> </ul> <p>[April Enrollment]</p> <ul style="list-style-type: none"> <li>Graduate students in 1st year of master's coursework</li> <li>Prospective students who will be enrolled in a 4-year doctoral program in FY2021</li> </ul>	<p>In principle, applicants must be engaged in research fields contributing to basic life science or biomedical engineering at the following departments:</p> <p>Pharmaceutical Sciences Pharmacy</p>
Science	<p>[September Enrollment]</p> <ul style="list-style-type: none"> <li>Graduate students in 2nd year of master's coursework</li> <li>Graduate students in 1st year of master's coursework</li> </ul> <p>[April Enrollment]</p> <ul style="list-style-type: none"> <li>Graduate students in 1st year of master's coursework</li> </ul>	Biological Sciences

\* As a principle, students must apply to this program at the earliest opportunity, even if there are multiple opportunities. Students enrolled in the medical science master's program (including those who have completed the program) are allowed to apply to this program only in their first year.

### (C) Other requirements

- 1) Those who aim to acquire a PhD degree in either a basic, applied, or interdisciplinary field of life science and technology contributing to human health.
- 2) Those who are interested in and committed to actively learn about how life science and technology relate to and interact with society and industry.
- 3) Those who aim to become a "knowledge professional" who act as a global leader.

- 4) Master's course students who intend to be enrolled in a PhD program in one of the above-listed majors (including the four-year PhD course in medicine or pharmaceutical sciences). Students who aim to seek employment in a company after completing a master degree program are not eligible for application in this program.
- 5) Those who have not applied or are not applying for another World-leading INnovative Graduate Study Program (WINGS), Doctoral Program for World-leading Innovative & Smart Education of the Ministry of Education, Culture, Sports, Science and Technology (WISE), or Leading Graduate School Program.
- 6) Those who will continue to commit to the WINGS-LST Program, even after earning financial support from other sources, such as the Japan Society for the Promotion of Science Research Fellowship for Young Scientists (JSPS DC).
- 7) Those who have applied for and been rejected by the WINGS-LST Program, or other World-leading INnovative Graduate Study Program (WINGS), Doctoral Program for World-leading Innovative & Smart Education of the Ministry of Education, Culture, Sports, Science and Technology (WISE), or Leading Graduate School Program.

#### **(5) Selection process and notification for the academic year 2021**

##### **Schedule**

Mid-Nov. 2020:	Program guidance session
Late-Nov - Early Dec. 2020:	Application acceptance
Dec. 2020 - Mid-Jan. 2021:	Student selection
Late-Jan. - Early Feb. 2021:	Announcement of results & enrollment procedure

For the Graduate Schools of Medicine, Pharmaceutical Sciences, and Science, applications for this program are accepted once a year in spring. For the Graduate school of Engineering applications are accepted twice a year, in spring and autumn. However, only one application per candidate will be accepted. Approximately 40 students will be accepted in total per year.

An on-demand guidance session for the spring selection cycle of this Program is scheduled for mid-November. The guidance shall be delivered in Japanese, and candidates who may not speak Japanese fluently should be assisted by their tutors. The application forms will be released in late-October. Please download the documents and files necessary for the application from the WING-LST website.

The application deadline for the spring cycle is scheduled for early December. During the application time window, applicants should submit an application registration card and the application documents (applicant information, research plan, essay, and research activities), a written Opinion Letter by your current supervisor (or the faculty member due to mentor you) at the University of Tokyo, an academic transcript, and an additional consent form to refer to the results of the entrance exam if required, to the WINGS-LST office as per instructions designated on the website.

Candidates are evaluated in each graduate school based on the application documents, the results of the graduate school entrance examination, graduate school grades, and interview results. Program student selection is then finalized by the academic affairs committee of WINGS-LST.

### **Notes on the application**

- 1) Any application document not completed in full will not be accepted. No deadline extension will be allowed.
- 2) Application documents are not subject to any changes after completion of the submission procedure, under any circumstance.
- 3) If the application procedure changes, the WINGS-LST office will notify details on the WINGS-LST website.
- 4) Personal information about applicants such as names or addresses obtained from applications are used only for (1) selection, (2) announcement of successful applicants, and (3) admissions procedures. In addition, the personal information of students who are enrolled will be used for (4) educational affairs and student support.
- 5) You may be deemed to have committed a dishonest act if you falsify or fabricate any information submitted in your application. In such cases, students may be expelled from this program, even after enrollment.

### **(6) Contact information**

For information on student affairs relating to the WINGS-LST program, please contact the WINGS-LST office:

Room No. S115 on the 1st floor of Faculty of Medicine Building #1.

Email address of the WINGS-LST office: [wings-life@m.u-tokyo.ac.jp](mailto:wings-life@m.u-tokyo.ac.jp)

Phone: 03-5841-0246 (Extension 20246)

Please contact us by email if possible, as WING-LST office is practicing telework.

If you have any questions specific to your department or discipline, please contact your supervisor or the program instructors for your discipline listed below:

Graduate School of Medicine

MIMURA Imari, Assistant Professor: [imimura-tky@umin.ac.jp](mailto:imimura-tky@umin.ac.jp)

KUWAHARA Tomoki, Project Lecturer: [kuwahara@m.u-tokyo.ac.jp](mailto:kuwahara@m.u-tokyo.ac.jp)

Graduate School of Engineering

FUJISAWA Ayano, Project Assistant Professor: [fujisawa@tetrapod.t.u-tokyo.ac.jp](mailto:fujisawa@tetrapod.t.u-tokyo.ac.jp)

Graduate School of Pharmaceutical Sciences

TAKITA Ryo, Associate Professor: [takita@mol.f.u-tokyo.ac.jp](mailto:takita@mol.f.u-tokyo.ac.jp)

WATANABE Kohei, Project Assistant Professor: [k-watanabe@mol.f.u-tokyo.ac.jp](mailto:k-watanabe@mol.f.u-tokyo.ac.jp)

Graduate School of Science

MIYOSHI Misaki, Project Assistant Professor: [smiyoshi@g.ecc.u-tokyo.ac.jp](mailto:smiyoshi@g.ecc.u-tokyo.ac.jp)

## OBLIGATIONS AND CAUTIONS AFTER ENROLLMENT IN THIS PROGRAM

Please note that the following is based on the rules and regulations as of December 2020 and details may change.

### **(7) Requirements for completion and academic degree**

1. In order to complete this program, you are required to take six credits from this program's curriculum including lectures, laboratory practices, and laboratory training sessions during your enrollment in this program. This will be in addition to the credit requirement to obtain your master's or Ph.D. degree. Please note that you may be required to take part in internship research programs provided by this program, at facilities in Japan or overseas. In addition, as a general rule, attendance at intensive seminars provided by this program several times a year is mandatory.
2. Passing of the Qualifying Examination (QE)
3. About one year after your enrollment in this program, you will be asked to submit a research plan for the following three years, which will be reviewed to assess your eligibility to continue your enrollment in this program.
4. You are asked to get periodical progress reviews by several faculty members. Please note that, as a general rule, you are required to apply for the Japan Society for the Promotion of Science Research Fellowship for Young Scientists (JSPS DC) every year. You are also required to promptly submit a copy of the application to the WINGS-LST office every year. If you do not qualify for application, please submit a research plan or a report equivalent to the application form, as specified under this program.
5. After passing the aforementioned QE, your supervisor and a mentor selected from a different graduate school will be engaged in a co-mentoring system, in order to enable you to cultivate the mindset, approach, and set of values of a research field different from that of your direct supervisor.
6. You are required to meet the requirements for PhD degree completion in your department.
7. You are required to write your dissertation in English and to successfully defend your thesis in your department.
8. You are required to pass a review of your PhD thesis specific to this program.

Upon satisfaction of all the conditions above, you will be granted a Certificate of Completion from this program, and your PhD diploma will have a statement acknowledging your completion of this program.

### **(8) Financial support for program students**

Program students are entitled to the following financial support from this program upon request, if requirements are met. If you are not receiving the following financial support from this program, please refer to "(9) Program students who do not get financial support from this program."

Table 2. Financial support from the WINGS-LST Program

Source	Financial support Plan	Amount	Students eligible	Other conditions
WINGS-LST	Takuetsu Research Assistant (Takuetsu RA)	Maximum JPY 80,000/mth	Master's course program students	See Note 1
WINGS-LST	Financial Support for Education and Research (KKS)	Maximum JPY 180,000/mth	PhD course program students	See Note 2
	Teaching Assistant(TA)	JPY 1,300/hr (master's course) JPY 1,500/hr (PhD course)	Program students, mainly during the first year of enrollment	See Note 3

Note 1 . Takuetsu Research Assistant (Takuetsu RA)

- 1) Assignment of Takuetsu RA from this program is limited to one year, regardless of the term of enrollment in the graduate school.
- 2) The Takuetsu RA fee is paid as compensation for research work done in the previous month, upon deduction of income tax as earning income.
- 3) In order to be assigned as a WINGS-LST Takuetsu RA, you are required to be continuously enrolled in this program, and report your activity every month upon acknowledgement by your supervisor, using a method designated under this program. The support may be discontinued if your commitment to research in your field and the curriculum of this program is deemed insufficient. If you plan to conduct your research in other organizations (Gaibu Itaku), you are required to describe the details including the name of the laboratory and the duration of the stay in the application form.
- 4) If you are studying abroad for more than three months for a program other than the official curriculum of this program, you may not be eligible for financial support during the period. Prior consultation with your supervisor and a program board member is mandatory.
- 5) Program students who are assigned as Takuetsu RA under this program may be assigned to additional UTokyo Takuetsu RA positions based on other financial sources, or may receive scholarships. Consult Table 3 for details. Depending on the total amount, support from this program shall be adjusted.
- 6) Program students who are assigned as Takuetsu RA under this program may receive compensation or per diem as interns. Depending on the total amount, support from this program shall be adjusted.

- 7) Program students who are assigned as Takuetsu RA under this program may found a company as long as commitment to this program's education and research is not affected. If income is earned, support from this program shall be adjusted.

Note 2: Financial Support for Education and Research (KKS)

- 1) In order to receive Economic Support for Education and Research (KKS), you have to be enrolled in this program for one year on a continuing basis, and prove that you are not receiving benefit-type financial support described in Note 2.3).
- 2) Names of recipients of KKS are made public.
- 3) There are limitations in receiving multiple scholarships for KKS recipients. Consult Table 3 for details.
- 4) KKS is classified as "other income" in the tax system. Recipients are obliged to file an income tax return every year for the KKS received during the previous year, at the tax office in charge.
- 5) As recipients of KKS are required to commit to this program, part-time jobs are prohibited as a general rule. The following is a list of exceptions:
  - (i) TA and RA work for other programs that are deemed essential for the implementation of this program.
  - (ii) Health workers with medical, dental or nurse's licenses, who practice in the university hospital of the university in which the student is enrolled, and address medical issues essential to their PhD education and research.
  - (iii) Part-time lecturers at institutions of higher education such as universities, junior colleges and higher professional schools
  - (iv) Assistant work for academic meetings related to the research topic of the student (limited to occasional events). Simple labor such as part-time jobs for undergraduates is not allowed.
  - (v) TA work for task research activities (課題研究活動) at high schools including Super Science High Schools.
  - (vi) Compensation from start-up companies that students join for the purpose of social implementation of research outcomes
  - (vii) Jobs that the Program Coordinator deems necessary for the education and research of the student (statement of reasons required)
- 6) In order to receive KKS, you are required to be continuously enrolled in this program, and report your activity every month upon acknowledgement by your supervisor, using a method designated by this program. The support may be discontinued if your commitment to research in your field and the curriculum of this program is deemed insufficient. If you plan to conduct your research in other organizations (Gaibu Itaku), you are required to

describe the details including the name of the laboratory and the duration of the stay in the application form.

- 7) If you are studying abroad for more than three months for a program other than the official curriculum of this program, you may not be eligible for financial support during the period. Prior consultation with your supervisor and a program board member is mandatory.
- 8) Recipients of KKS from this program may be assigned to other UTokyo Takuetsu RA positions supported by other financial sources, or may receive scholarships. Consult Table 3 for details. Depending on the total amount, support from this program shall be adjusted.
- 9) Recipients of KKS from this program may receive compensation or per diem as interns. Depending on the total amount, support from this program shall be adjusted.
- 10) Recipients of KKS from this program may found a start-up company as long as commitment to this program's education and research is not affected. If income is earned, support from this program shall be adjusted.

#### Note 3 Teaching Assistant (TA)

Tasks essential for the implementation of this program shall be commissioned to those interested, mainly during the first year of enrollment in this program.

Table 3. Scholarships from sources other than WINGS-LST, and possibility of combination with WINGS-LST Takuetsu RA or KKS

Financial Source, Provider	Scholarships, Support system	Monthly amount	Requirements to receive benefit	Combination with financial support from WINGS-LST allowed (Yes/No)	
				WINGS-LST Takuetsu RA	WINGS-LST KKS
UTokyo (departments, labs, etc.)	UTokyo Takuetsu Research Assistant (Takuetsu RA) *1	No upper limit	Member of WINGS Program	Yes * 2	Yes *2
Japanese Government	Japan Society for the Promotion of Science (JSPS)	JSPS Research Fellowship for Young Scientists (JSPS DC)	JPY 200,000	JSPS DC grantees	NA
	Japan Student Services Organization (JASSO)	Loan-based scholarship	JPY 50,000 to 122,000	According to JASSO selection criteria	Yes *2
		Monbukagakusho Honors Scholarship for Privately-Financed International Students	JPY 48,000	International students, according to each system's selection criteria	Yes *2

Ministry of Education, Culture, Sports, Science and Technology(MEXT)	Japanese Government Scholarship for Research students (for international students)	From JPY 144,000	International students, according to each system's selection criteria	Yes *2	No
<b>International Governments</b>	Scholarship for international students	According to each system	International students, according to each system's selection criteria	Yes *2, *3	No
<b>UTokyo</b>	The University of Tokyo Special Scholarship for International Students (University of Tokyo Fellowship)	JPY 150,000 or 200,000	Privately funded international students	Yes *2	No
<b>Private scholarship organizations</b>	Private scholarships	According to each system	According to selection criteria of each system	Yes *2, *3	Yes *2, *3
<b>Government, UTokyo, Other Organizations</b>	Subsidies for help with tuition, Tuition exemption	According to each system	According to selection criteria of each system	Yes *3	Yes *3

- \*1. Program students are eligible for Takuetsu RA assignment. Program students are not eligible for RA assignment.
- \*2. In order to get additional financial support, prior consultation with the supervisor and Program Organizing Committee faculty member of each School is necessary. Depending on the total amount, adjustment of financial support from this program will be made.
- \*3. Check beforehand with the organizations that provide financial support or scholarship, as there may be rules that restrict support overlaps.

#### **(9) Program students who do not receive financial support from this program**

1. Students who receive scholarships from other sources, or decide not to receive financial support from this program due to personal reasons such as dependent exemption, are eligible for enrollment in this program.
2. Program students who are accepted as JSPS DC will not be able to receive financial support from this program, but are required to continue enrollment in this program.