



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

Innovative Medicine CHIBA Doctoral WISE Program



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革新医療創生CHIBA
卓越大学院

Ministry of Education, Culture, Sports, Science and Technology (MEXT)
Doctoral Program for World-leading Innovative & Smart Education (WISE)

Innovative Medicine CHIBA Doctoral WISE Program (iMeC-WISE)

Toshinori Nakayama
President, Chiba University

By respecting cultural diversity and personal values, Chiba University contributes to international society through world-leading education and research and the development of global professionals. With governmental support, including the Top Global University Project (2014), we established three overseas campuses and the College of Liberal Arts and Sciences. This college requires all undergraduate students to study abroad, which makes Chiba University the first national university in Japan to undertake such an ambitious endeavor. In 2020, we launched the Chiba University Global Program called Enhanced Network for Global Innovative Education (ENGINE) where studying abroad is compulsory for both undergraduate and graduate students.

Building on the university's achievements of more than a century in the field of medicine, our faculty is committed to training global medical leaders at the

Inohana Campus, the location of the university's three medical-related faculties, Chiba University Hospital, and Japan's first Center for Artificial Intelligence Research in Therapeutics. Through the Global COE Program (2008), we built the International Network for Therapeutics in Immune System Control to foster medical practitioners and researchers who will play pivotal roles in the global community. In the Program for Leading Graduate Schools (2012), we train world-leading creative researchers in therapeutics. Such achievements allowed us to engage in a Comprehensive Academic Collaborative Agreement with the University of California, San Diego and jointly establish the Center for Mucosal Immunology, Allergy and Vaccines.

Rapid technological advances are driving a paradigm shift in medical care worldwide. Based on our experience in nurturing therapeutic researchers in the Program for Leading Graduate Schools, the iMeC-WISE establishes the cluster-based Six Specialized Field Education System. Through the university's Center for AI Research in Therapeutics, we aim to foster creators of new "medical knowledge", innovators who will develop groundbreaking therapeutic agents and treatments, and leaders who will correct social inequalities, including disparities in the provision of medical care. Within the Six Specialized Field Education System, faculty and specialists across fields offer rotation training of iMeC-WISE to cultivate comprehensive insights, originality, and practical skills. Students of the program will major in at least two clusters to acquire a Ph.D. degree equivalent to a double-major. The iMeC-WISE also provides collaborative programs with world-class research institutes.

Chiba University will make every effort to develop an outstanding education and research environment and strategically allocate necessary resources to strengthen our iMeC-WISE.

We look forward to your kind and continuous support.



Message from the Program Director

Haruaki Nakaya
Program Director
Executive Board Member



Since 2016, Chiba University has been recognized as a national university that promotes outstanding education, research, and social implementation of research achievements, and has strengthened its strategic functions. Starting from the 21st Century Center for Excellence (COE) Program adopted in 2006, followed by the Global COE Program (2008), and the Program for Leading Graduate Schools (2012), the university has continuously enriched education of the graduate schools in health and medicine related fields. Based on the experiences and achievements of these programs, the Innovative Medicine CHIBA Doctoral WISE Program (iMeC-WISE) was established in 2019. With the approval of the government, the program is now ready to start.

Developed countries including Japan have achieved increased longevity through the outstanding advances of cancer therapy, regenerative medicine, genomic medicine and diagnostics, and diagnosis and treatment using artificial intelligence. On the other hand, they are facing various problems such as the growth of medical expenditures, and health disparities and inequalities. In order to solve these problems, and to maintain a sustainable and healthy society, it is essential to unite separate disciplinary fields of "knowledge in medical

sciences", and to create innovations that lead to novel, safe, and effective therapies or disease prevention methods.

Establishing the Six Specialized Field Education System in cooperation with top-tier domestic and overseas universities, research institutes and corporations, iMeC-WISE fosters "human resources who will work on creation of medical innovations with comprehensive insights, flexible intelligence, challenging spirits, resilience, and innovative mind". Besides our faculty members, we asked our visiting professors, who gathered from 26 domestic and overseas corporations, three government organizations, and 21 overseas universities and research institutes, for their cooperation to engage in the education of highly talented graduate students with diverse backgrounds. Program students will major in one of six specialized fields, and choose a minor in another field. Students in the Double Degree Course have chances to gain a PhD degree from University of California, San Diego as well as one from Chiba University. We hope that motivated students will participate in iMeC-WISE to become global leaders who create innovative medicines in the near future. As we all are willing to commit ourselves to the success of this program, we kindly ask for your support and cooperation.

Nurture of World-leading Medical Innovators

Tetsuichiro Saito
Program Coordinator
Professor, Dean of Graduate School of Medical and Pharmaceutical Sciences



The coronavirus disease 2019 pandemic has underscored the vulnerability of the global health system and the vital importance of both basic science and medicine. The rapid development of mRNA vaccines against the virus has been realized by persistent basic research. In addition to this global crisis, Japan, which is a super-aging country, must grapple with various issues. One pressing issue is to nurture leaders of medical innovation to build a sustainable healthier society where people live to be centenarians.

Chiba University has produced many talented doctors who have made significant contributions to medicine worldwide. Among these are Prof. Komei Nakayama, who invented esophageal cancer surgery, and Prof. Tomio Tada, who expanded immunology. Based on this tradition of human resource development, the Innovative Medicine CHIBA Doctoral WISE Program (iMeC-WISE), which commenced education in 2020, aims to foster outstanding researchers who will create novel knowledge in medicine, innovators who will utilize that knowledge to develop new therapeutic agents and treatments that are safer and more efficacious, and policy makers who will apply AI and other technologies to correct social inequalities through various approaches.

The iMeC-WISE is engaging in international collaboration in partnership with eight corporations and three research institutions including RIKEN, and four overseas universities including the University of California San Diego. Moreover, the iMeC-WISE has established a hub for human resource exchanges and joint research, bringing together educational and research expertise of the world's highest level, organizing the Chiba Innovative Therapeutics International Program (CITIP), a global educational framework consisting of 21 overseas institutions, and the Chiba Innovative Therapeutics Industry Consortium (CITICO), a cross-sectoral educational framework with industry-government-academia collaboration, which includes 26 corporations and three government agencies.

Students in the program are required to undertake independent study and research, and they take the initiative in planning and participating in scientific seminars and hands-on training in corporations and international organizations such as WHO. The iMeC-WISE provides students with generous financial support so that they can successfully complete either the Double Major PhD Course or the International Double Degree PhD Course. We sincerely welcome applications from motivated and dedicated students from various fields.

Innovative Medicine CHIBA Doctoral WISE Program

Outlines

Chiba University has launched “Innovative Medicine CHIBA Doctoral WISE Program (iMeC-WISE)”, which consists of a two-year Master’s Program with nine majors: Medical Sciences, General Pharmaceutical Sciences, Mathematics and Informatics, Earth and Environmental Sciences, Advanced Science and Engineering, Creative Engineering, Fundamental Engineering, Environmental Horticulture, and Nursing, and a four-year Doctoral Program of Frontier Medicine and Pharmacy in the Graduate School of Medical and Pharmaceutical Sciences.

Based on the Chiba University’s more than 100-year history in the fields of medicine and pharmaceutical sciences, iMeC-WISE aims to foster the next generation of world-class researchers and innovators, who will contribute to the development of medical sciences, pave the way to novel therapies and drugs, and develop sustainable healthcare systems.

The iMeC-WISE program is characterized by innovative comprehensive training with a focus on multidisciplinary close mentoring by internationally renowned faculty from academia and industry. The program’s six specialized fields provide excellent platforms for research and training using a wide range of state-of-the-art technologies in Biomedicine, Medical Engineering, Therapeutics, Drug Discovery, Sustainable Health Sciences, and Medical Informatics. Students are required to study in two out of the six specialized fields so that they can acquire highly advanced research abilities as well as a broader perspective in an international environment.

The program has two courses:

1. iMeC-WISE Double Major Course in Chiba University
2. iMeC-WISE International Double Degree Course, in which students earn PhD degrees from Chiba University and University of California San Diego.

Students are required to cultivate basic skills and knowledge on medical sciences in the Master’s Program and then to accomplish at least two projects, equivalent to double majors, in different specialized fields in the Doctoral Program.

iMeC-WISE provides students with financial support and the career development office as well as subsequent post-graduate employment positions to maximize each student’s potential and build the foundation for career success. Graduates are expected to be leaders in various fields.

Admission Policy: Applicants are required to have a broad perspective based on basic knowledge, flexible thinking, motivation, and a commitment to creating innovative medicine.

Curriculum Policy: The program provides students with opportunities to conduct research in cooperation with researchers in different fields beyond the framework of industry, government, and academia to achieve their own goals, to take the initiative in creating new knowledge and values, and to acquire the ability to contribute to society.

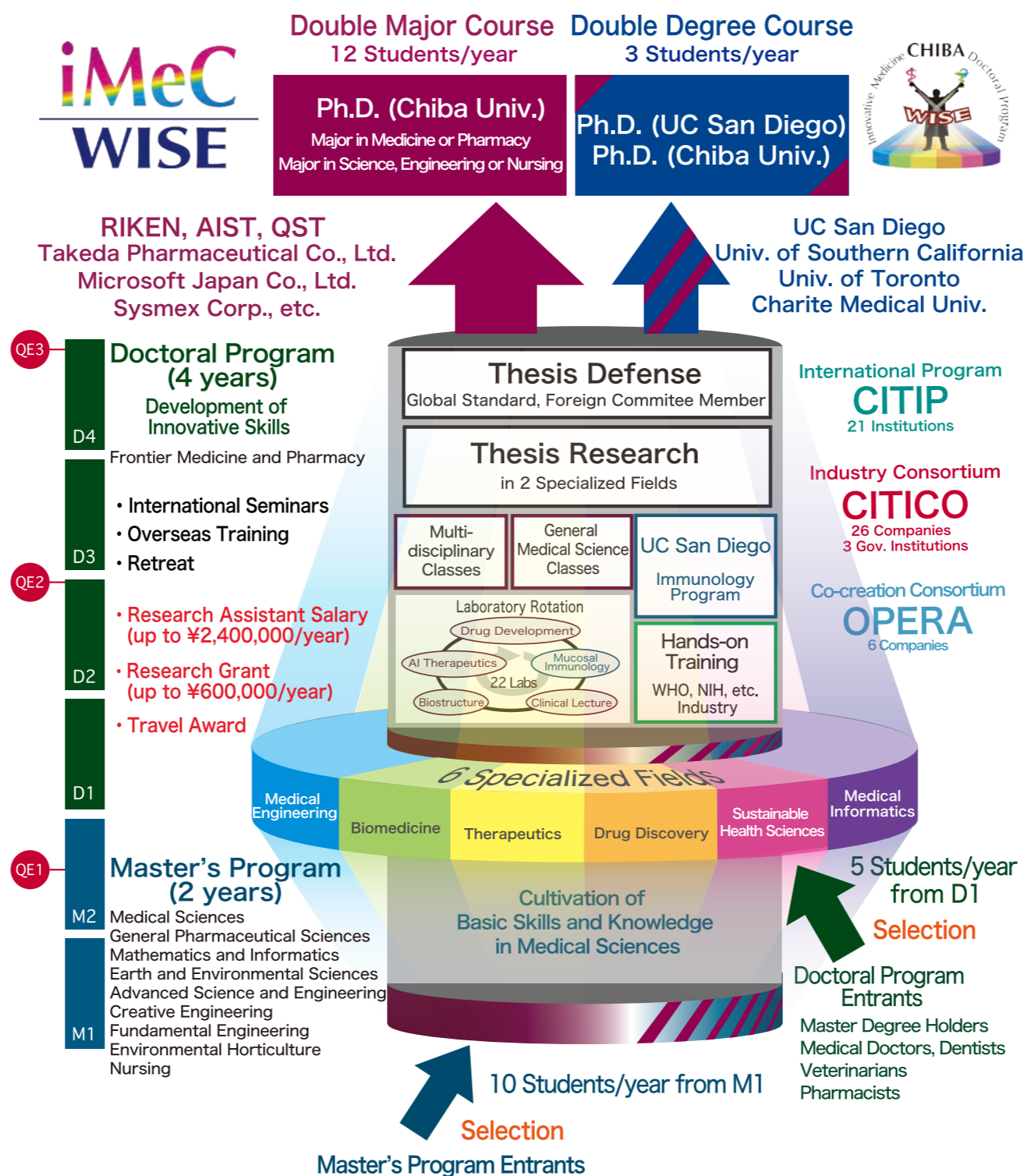
Innovative Medicine CHIBA Doctoral WISE Program

Nurture of World-leading Medical Innovators for

New Medical Discovery

New Drug Innovation

Sustainable Healthcare



Features

1. New graduate program that develops the ability to establish innovative medicine

Under the **Six Specialized Fields Education System**, students major in two fields from Therapeutics, Medical Engineering, Biomedicine, Drug Discovery, Sustainable Health Sciences, and Medical Informatics. Students are required to present their research achievements in their two fields. Three professors from different fields provide each student with multidimensional detailed instructions and support.

2. Global education in cooperation with various institutes and corporations

Professors from various organizations including government agencies, research institutes, and companies engage in the education. Chiba University has educational partnerships with University of California San Diego, University of Toronto, University of Southern California, and Charité – Universitätsmedizin Berlin, as well as 11 industrial and government organizations including RIKEN and Takeda Pharmaceutical Company. In addition, Chiba University has developed cutting-edge education programs such as the **Chiba Innovative Therapeutics International Program (CITIP)** for global education and the **Chiba Innovative Therapeutics Industry Consortium (CITICO)** for industry-government-academia collaborative education.

3. The Center for Artificial Intelligence Research for Therapeutics

Chiba University’s Center for Artificial Intelligence Research for Therapeutics plays a core role in the development of new treatments, pharmaceuticals, and high-precision diagnostics as well as the creation of new industries related to the information technology and internet of things based on innovative medical data science.

4. Three-step promotion system that assures the quality of academic degree

The quality of the degree is assured by the three-step qualifying examinations (QEs): QE1, before completing the Master’s Program; QE2, middle of the Doctoral Program; QE3, before completing the Doctoral Program. Each dissertation committee includes at least one foreign professor to ensure that the degree is based on international standards.

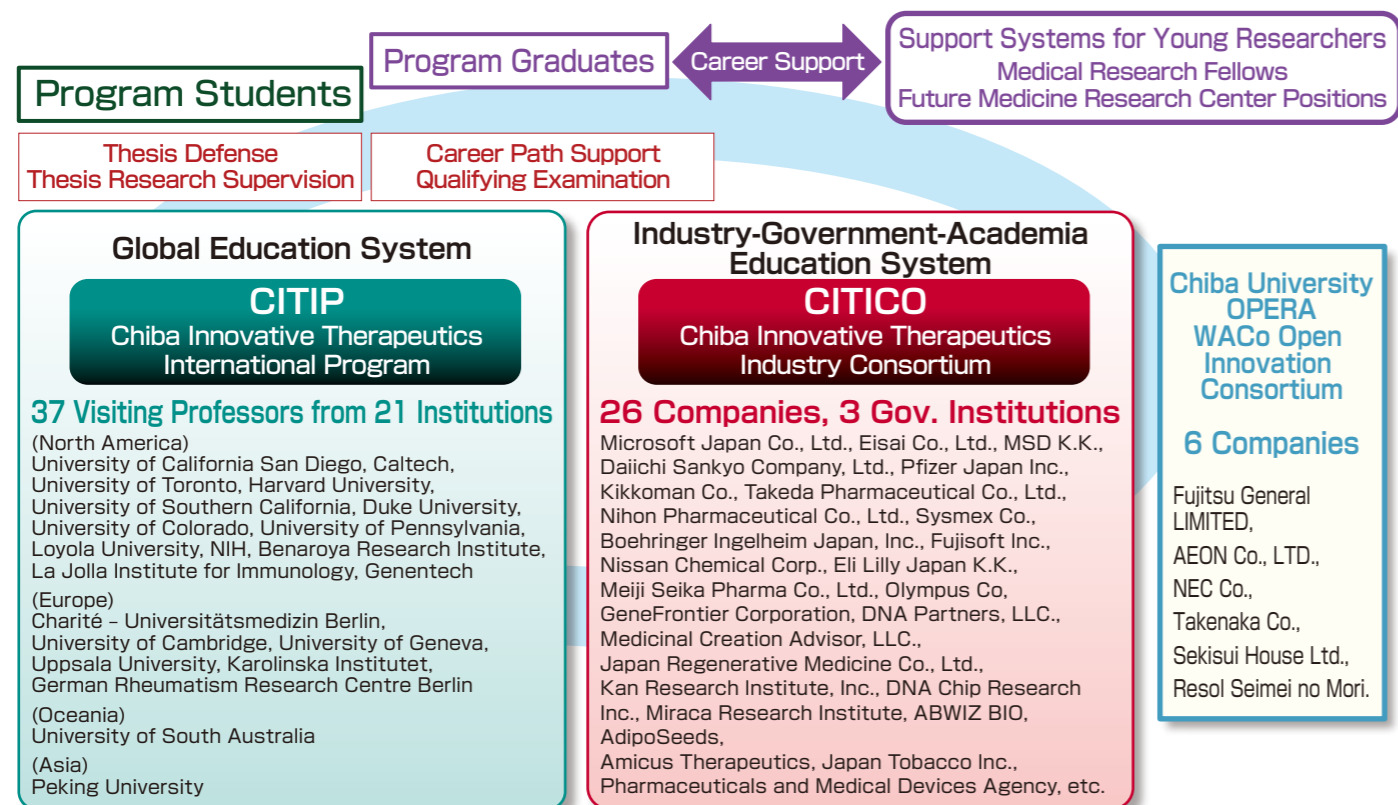
5. Education and support that encourage student initiatives

Students take the initiative in planning iMeC-WISE seminars, retreats, and hands-on training. Support available in this program includes the research assistant positions, research grants, hands-on training travel expenses, and career development support after graduation.

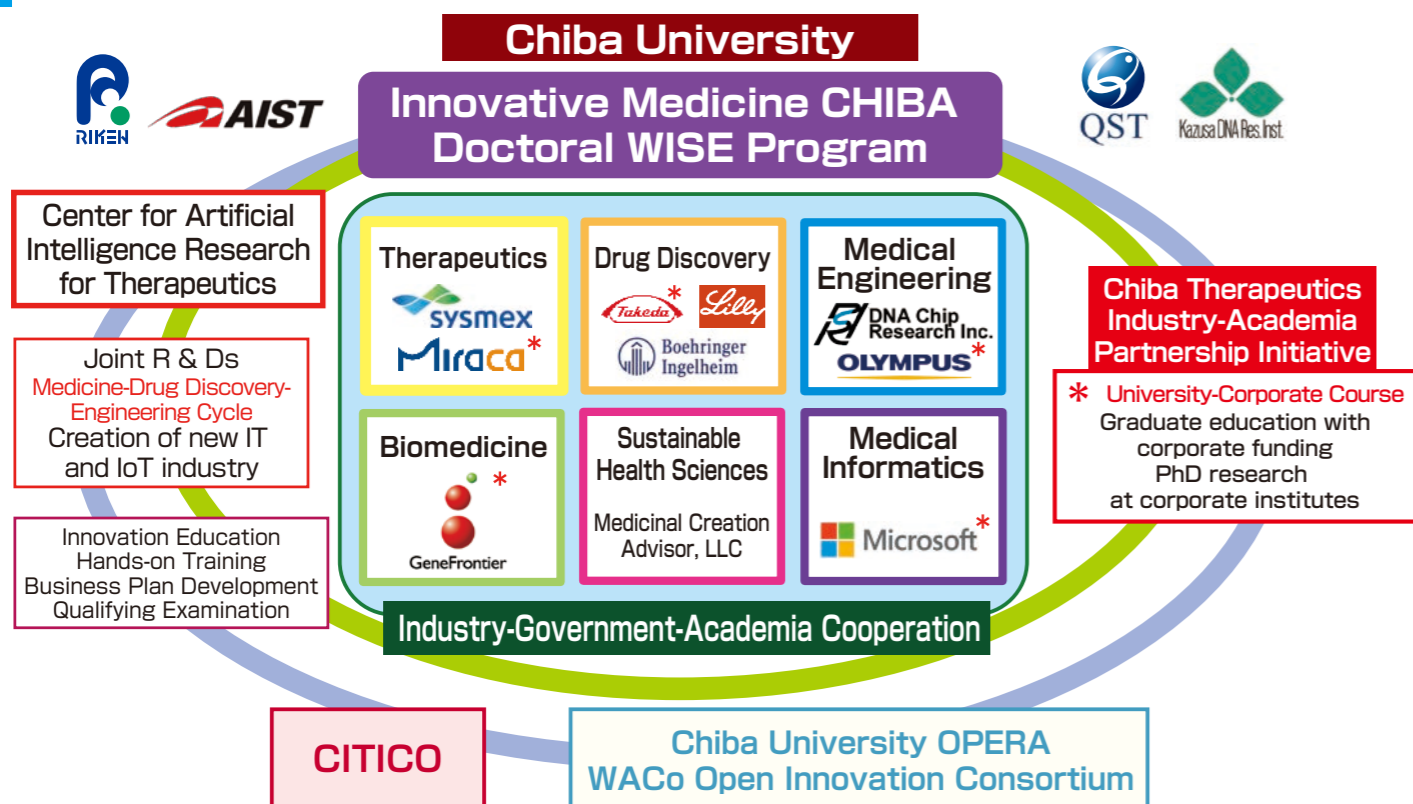
Diploma Policy: Doctorates are granted to students who are expected to create new medical knowledge and contribute to society based on their high level of knowledge, broader perspective, cooperativeness, leadership, and morality.

iMeC-WISE Student Support and Education System

Global Education & Support System of iMeC-WISE



New Industry-Government-Academia Sustainable Education System to Create Medical Innovation



Program Members

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