



NAIST®

Nara Institute of Science and Technology

GUIDEBOOK 2022

About NAIST

Nara Institute of Science and Technology (NAIST) was founded as a unique Japanese national university consisting solely of graduate schools in the three areas of information science, biological sciences, and materials science to redefine graduate-level education. In 2018, to push forward the boundaries of advanced science and technology, the three graduate schools merged to create the Graduate School of Science and Technology with Education Programs in the original three research areas and two of their interdisciplinary areas. At present, over 1,000 students—roughly 25% from overseas—are supervised by approximately 200 NAIST faculty.

With its cutting-edge facilities and a high student-to-faculty ratio, NAIST's world-leading research and education are a direct result of its rich, global environment and supportive infrastructure. Moreover, NAIST's faculty and students' outstanding achievements are shared world-wide through patents, licenses, spin-off companies, and active international exchange. As a result, NAIST has quickly established itself as a world-class research and education center where young research scientists and engineers become tomorrow's global leaders.

From its establishment, NAIST has developed education programs and research that begin with NAIST and spread across research fields through our extensive global network of NAIST graduates and international partner institutions. This network is not only key to our research activities, which are undertaken spanning the globe to promote collaboration at the forefronts of science and technology, but a central part of NAIST's global education programming, allowing students to experience today's international trends and environments.

NAIST eagerly promotes admission of students from both Japan and overseas who have strong basic academic capabilities, regardless of their academic backgrounds, and actively admits researchers, engineers and others currently working in society with strong enthusiasm for advanced scientific research and clearly defined aspirations for the future.



President's Vision 2030

NAIST celebrated its 30th anniversary in 2021 and the newly appointed President, Dr. Kazuhiro Shiozaki, issued his vision of what NAIST should be in 2030. Upon the foundation laid by its prominent achievements over the past three decades, NAIST will build a campus community that strives for the new development in research and education through "co-creation" with diverse stakeholders. Please use the QR code to view the President's Vision 2030 and find out how NAIST will pursue co-creation to fulfill its mission as a national postgraduate institution.



NAIST Timeline

1991	NAIST established on October 1st (Graduate School of Information Science)
1992	Graduate School of Biological Sciences and Information Technology Center established
1993	Research and Education Center for Genetic Information established
1994	Research Center for Advanced Science and Technology established
1996	Graduate School of Materials Science established
1998	Research and Education Center for Materials Science established
2003	Intellectual Property Division established
2004	NAIST became a National University Corporation, Industry-Government-Academia Collaboration Group established
2009	Gender Equality Promotion Office and Center for International Relations established
2010	Information Initiative Center and Research Center for Advanced Science and Technology established
2013	Career Services Office and Institute of Research Initiatives established
2015	Center for Strategy and Planning, Institute for Educational Initiatives and Institute of Research Initiatives established
2017	Data Science Center established
2018	Three original graduate schools merged to create Graduate School of Science and Technology
2021	Center for Digital Green-innovation established

NAIST Numbers

NAIST is an institute focused solely on graduate school education based on its research achievements in the leading fields of science and technology.

NAIST Student Enrollment

Master's	Doctoral	Research students, etc.
701	367	34
Total: 1102 (International students: 25%)		

(As of May 2021)

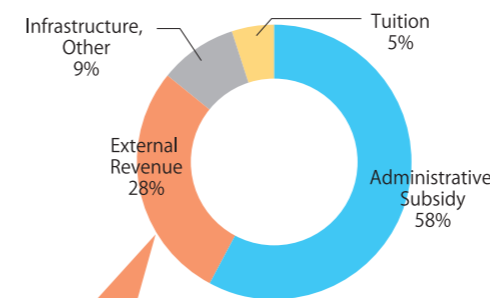
NAIST Faculty and Staff

Executive administration	Faculty	Staff
8	197	170
Total: 375 (International faculty and staff: 12%)		

(As of May 2021)

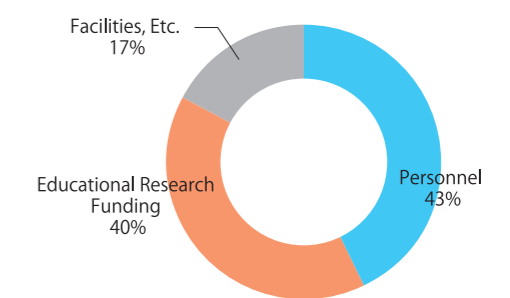
High Percentage of External Revenue

FY2020 Revenue: Total 11 billion (JPY)

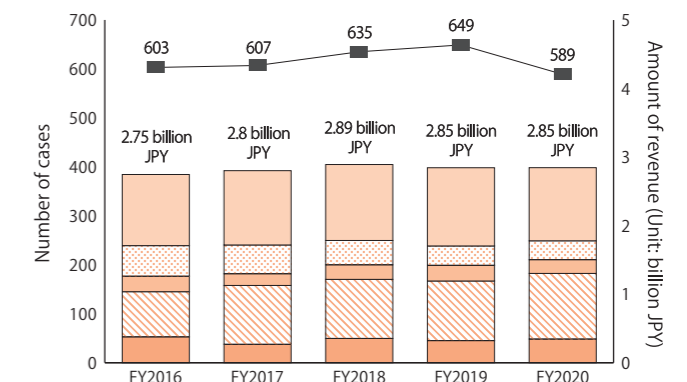
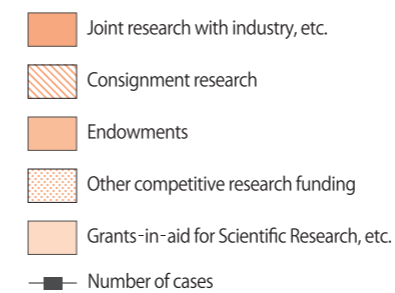


High Allocation of Educational Research Funding

FY2020 Expenses: Total 9.9 billion (JPY)

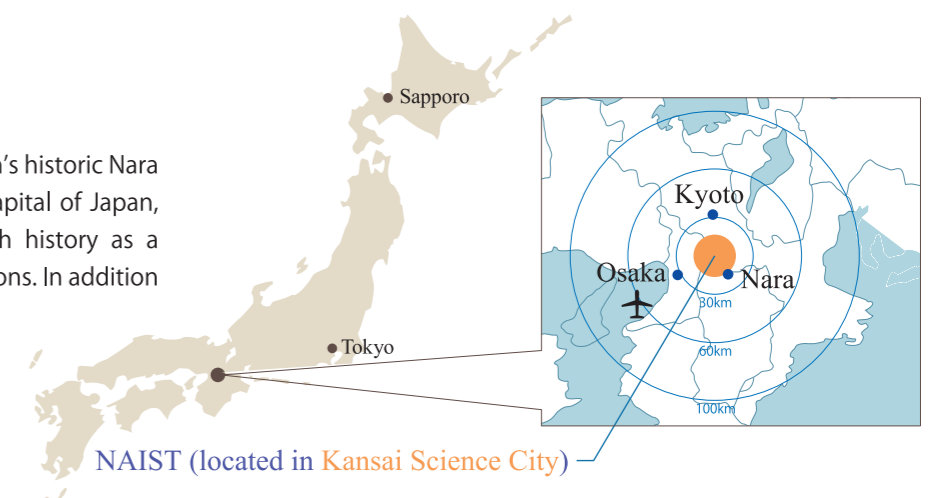


External Revenue Breakdown (Fiscal 2020)



Location

NAIST is located in Ikoma City, in Japan's historic Nara Prefecture. Home of the first official capital of Japan, Nara Prefecture has an incredibly rich history as a center for international trade and relations. In addition to its prolific ancient heritage, Nara Prefecture is also conveniently located in close proximity to Kyoto and Osaka, and just 60 minutes from Kansai International Airport.



NAIST's Educational Structure

Graduate School of Science and Technology

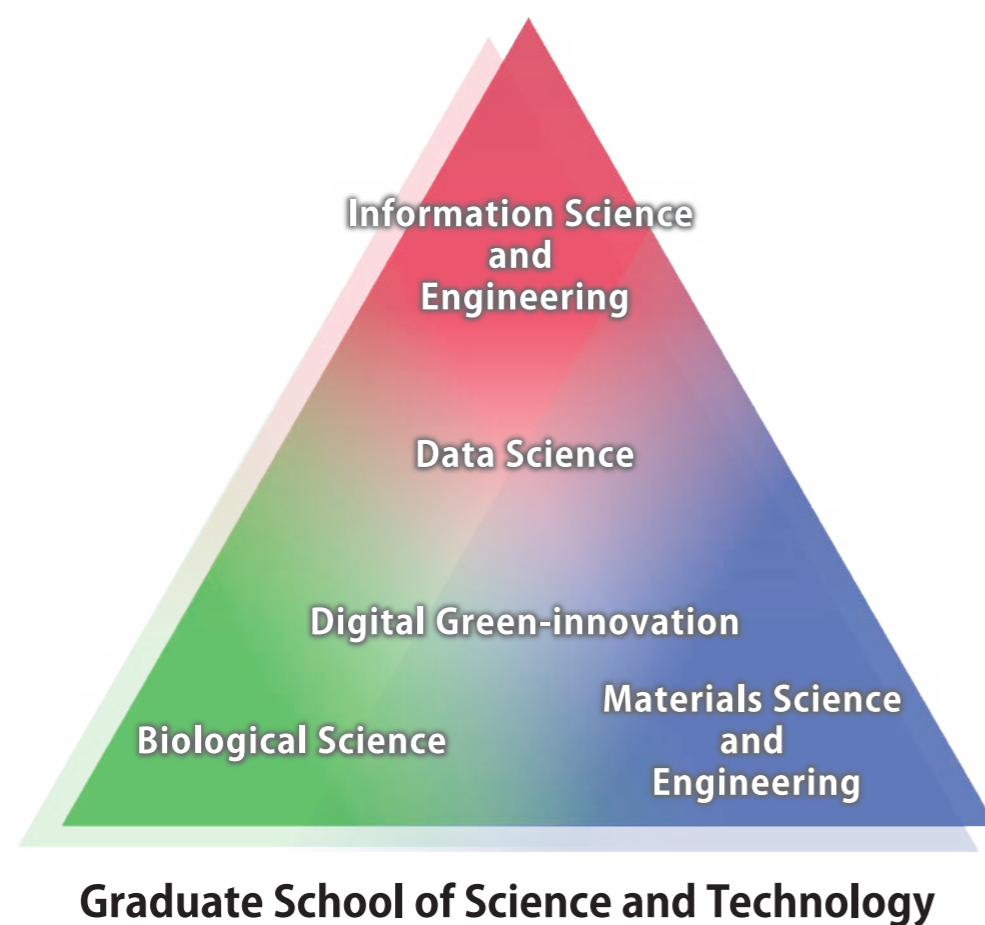
The Graduate School of Science and Technology was established to remove existing barriers between academic fields to form a flexible educational structure where faculty from related areas come together to perform education at the forefronts science and technology and to introduce an educational system for basic and specialized knowledge to prepare students for studies in diverse areas, and to allow them to reach beyond their specializations utilizing the knowledge and skills they attained in their undergraduate education. Additionally, in order to meet the ever-changing needs of society and to achieve real-world application, project-based learning and other practical educational projects led by invited researchers and engineers from private industry, etc. are incorporated into the curriculum. The specific objectives for the graduate education programs are:

The master's course fosters graduates with specialized knowledge and training, a wide understanding of related interdisciplinary fields, and the ability to approach issues and phenomena holistically to lead the application and innovation of science and technology throughout society.

The doctoral course fosters international awareness, self-reliance, and independence and develops researchers and skilled engineers with high ambitions that will advance the boundaries of science and technology taking leading roles throughout global industry, academia and government.

Multidisciplinary-focused Education Programs

The five Education Programs of the Graduate School of Science and Technology span the three original fields of research at NAIST (information, biological and materials sciences) and include the developing interdisciplinary fields that emerge independent of traditional academic divisions to pursue current trends in science and technology. All laboratories belong to one or more Education Program and students choose the type of degree they will pursue depending on their studies and the focus of their research.



Education Programs

Education Programs facilitating research in leading-edge science and technology

Information Science and Engineering	Degrees granted: Master's / Doctorate (engineering, science)
A focused program fostering students to support our dynamic advanced information society, implementing further achievements in diverse fields. This program cultivates specialized knowledge and skills in computer hardware/information network technology, computer/human interaction and media technology, and computer systems to utilize robotics.	
Biological Science	Degrees granted: Master's / Doctorate (biological science)
A focused biological science program which fosters students who are able to contribute to the development of humankind and the conservation of the global environment through research and development related to the environment, energy, food and natural resources, and human health and longevity by equipping them with cutting-edge knowledge and skills in a wide range of fields, from the basic principles of life phenomena to the diversity of living organisms in animals, plants, and microorganisms.	
Materials Science and Engineering	Degrees granted: Master's / Doctorate (engineering, science)
A focused program fostering students with foundational knowledge of materials science and advanced knowledge to fully utilize their expertise in a program spanning solid state physics, device engineering, molecular chemistry, polymeric materials and bionano-engineering, and undertake next generation science and technology to maintain affluent living and support societal development.	
Data Science	Degrees granted: Master's / Doctorate (engineering, science, biological science)
An interdisciplinary program fostering students with a wide range of expertise in data- and AI-driven sciences in information, biological, and materials sciences, to find hidden 'value' and 'truth' through data processing, visualization, and analysis of huge amounts of data to contribute to science, technology, and societal development.	
Digital Green-innovation	Degrees granted: Master's / Doctorate (engineering, science, biological science)
An information, biological, and materials sciences interdisciplinary program which fosters students with advanced expertise in these three fields which support society and the economy, as well as comprehensive backgrounds to understand the adjacent interdisciplinary research fields, especially the interdisciplinary fields that encompass green and digital fields. These students can approach issues from various perspectives throughout society and will lead the utilization of digital green science and technology, which continues to develop in the green and digital fields, and innovation in society.	

Education Programs that can be selected for each Division

	Division		
	Information Science	Biological Science	Materials Science
Information Science and Engineering	<input type="radio"/>		
Biological Science		<input type="radio"/>	
Materials Science and Engineering			<input type="radio"/>
Data Science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital Green-innovation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Globalization at NAIST

The coordinated education and research activities necessary to produce researchers and engineers who push forward the boundaries of science and technology and are active participants in today's global society, and the extensive organized support to ensure their success.

Top Global University Project

In October 2014, NAIST was selected for the Top Global University Project funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT). For a period of ten years, MEXT supports NAIST and other outstanding universities in their efforts to reform institutional governance and collaborate with top universities worldwide in order to strengthen international competitiveness. Through the Top Global University Project, NAIST has committed to enhancing its international graduate courses by creating a double degree scheme, developing a new model for graduate education based on world-class research, reforming institutional governance and strategic agility, creating a campus environment that supports trans-disciplinary education and cultural diversity, and merging its three graduate schools into a single entity to establish new, flexible research fields.

International collaborative research network

Overseas research laboratories

NAIST maintains two overseas research laboratories at partner institutions where our faculty reside to facilitate collaborative research and strengthen institutional ties.

- ▶ Paul Sabatier University (France)
- ▶ University of California Davis (USA)

On-campus international collaborative laboratories

There are two collaborative laboratories on campus where visiting faculty from international partner institutions lead research with young international researchers.

- ▶ École Polytechnique (France)
- ▶ University of British Columbia (Canada)

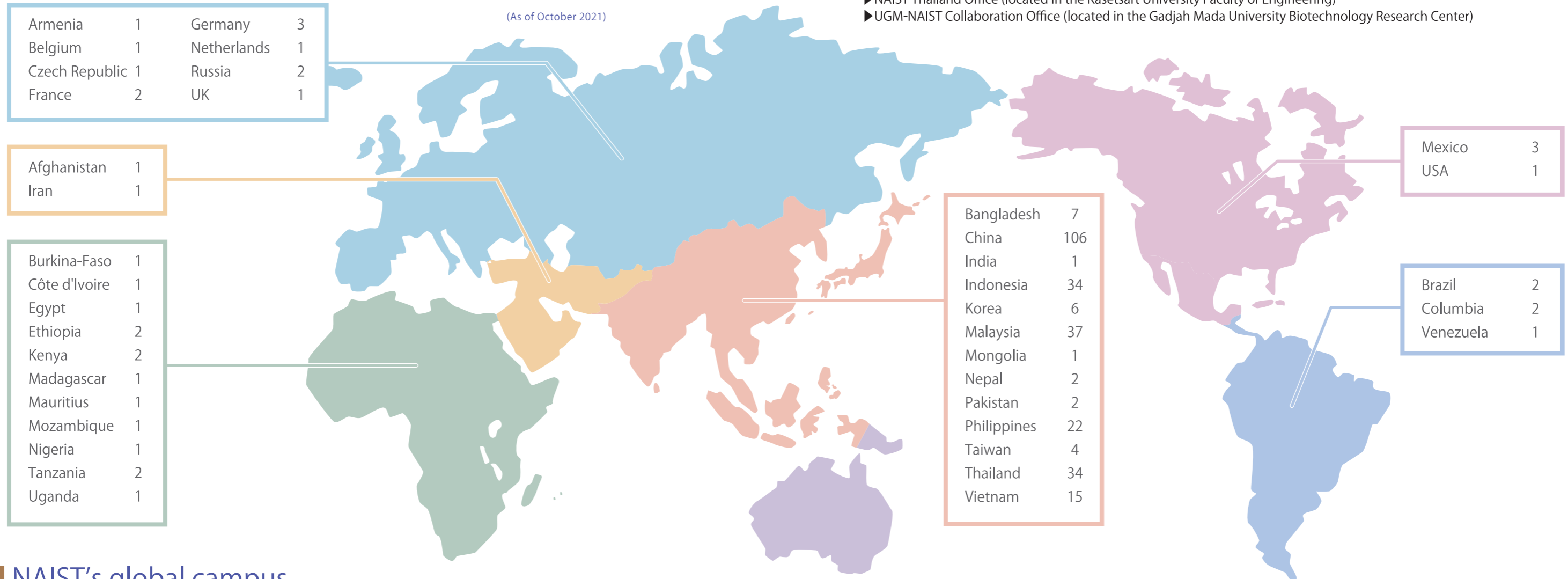
Overseas education and research collaboration offices

In Asia, NAIST has established two overseas offices in Thailand and Indonesia as hubs for education and research collaboration to support its growing network of graduates and partner institutions, and maintains an office to promote collaboration projects in Indonesia as well.

- ▶ NAIST Indonesia Office (located in the Bogor Agricultural University Alumni Building)
- ▶ NAIST Thailand Office (located in the Kasetsart University Faculty of Engineering)
- ▶ UGM-NAIST Collaboration Office (located in the Gadjah Mada University Biotechnology Research Center)

International Student Enrollment

(As of October 2021)



NAIST's global campus

At NAIST, in order to develop global leaders in science and technology, we have focused on the globalization of our campus, including academic environments and campus facilities, while also restructuring our education programming to respond to current global needs and trends in science and technology. These efforts have produced a truly unique on-campus community that is central to students' and researchers' experience at NAIST. With students from various cultures, fields and backgrounds studying and performing research under NAIST's diverse faculty, our campus has become an international hub for both education and research in science and technology and we are maintaining and actively expanding our network of domestic and international partners to further promote our activities globally.

Division for Global Education

The Division for Global Education plans and implements programs including agreements and activities with overseas institutions, double degree programs, studying abroad, overseas faculty and staff development programs, collaborative research laboratories, and overseas offices.

Agreements on Academic Exchange with 114 Overseas Institutions in 30 Countries/Regions

(As of January 2022)

NAIST's international network is centered upon our international partner institutions and the faculty and staff that continue to strengthen ties in both research and education. The academic agreements below are achieved through extensive collaboration and their contents cover areas including research collaboration, symposia, guest lectures, faculty and student exchange, and the sharing of scientific information and materials.

Institution Level Agreements

Asia
Bangladesh
Bangladesh University of Engineering and Technology
China
Institute of Genetics and Developmental Biology, Chinese Academy of Sciences
Tianjin University of Technology
Liaoning University
Northeast Normal University
India
KIIT College of Engineering
Indian Institute of Technology, Jodhpur
Indonesia
Gadjah Mada University
Bogor Agricultural University
University of Indonesia
Hasanuddin University
Bandung Institute of Technology
Jenderal Soedirman University
Electronic Engineering Polytechnic Institute of Surabaya
Korea
Hanbat National University
Pohang University of Science and Technology
Malaysia
University of Science, Malaysia
University of Malaya
University of Technology, Malaysia
Universiti Tunku Abdul Rahman
Universiti Kebangsaan Malaysia
Philippines
Ateneo de Manila University
University of the Philippines Diliman
Taiwan
National Yang Ming Chiao Tung University
The National Taiwan University of Science and Technology
National Cheng Kung University
Thailand
Mahidol University
Chulalongkorn University
Kasetsart University
Chiang Mai University
King Mongkut's University of Technology Thonburi
Vietnam
Hanoi University of Science, Vietnam National University
University of Engineering and Technology, Vietnam National University
Vietnam National University HCMC, University of Information Technology
Hue University of Sciences
University of Science and Technology of Hanoi
Posts and Telecommunications Institute of Technology HCMC Campus

Europe
Belgium
University of Louvain
France
Paul Sabatier University
Ecole Polytechnique
Ecole Normale Supérieure Paris-Saclay
Science and Technology, University of Lille 1
University Paris-Est Marne-la-Vallée
Telecom ParisTech
Sorbonne University
University of Paris-Saclay
Université de Rennes 1
ESIGELEC
Ecole Normale Supérieure de Lyon
The University of Picardie Jules Verne
University Bourgogne Franche-Comté

Germany
RWTH Aachen University
Justus Liebig University Giessen
Karlsruhe Institute of Technology
University of Regensburg
Coburg University of Applied Sciences and Arts
DFKI (The German Research Center for Artificial Intelligence)
Italy
University of Cagliari
University of Trento
Russia
Peter the Great St. Petersburg Polytechnical University
Spain
University of Granada
UK
University of Edinburgh
Department of Statistical Science, University College London

North America
Canada
Queen's University at Kingston
USA
University of California Davis
University of Hawaii at Mānoa
University of California, San Diego
Mississippi State University

South America
Brazil
Universidade Federal de São Paul

Africa
Kenya
University of Nairobi
Senegal
Cheikh Anta Diop University

Oceania
Australia
University of Technology Sydney
Macquarie University
The University of Newcastle
University of Adelaide
New Zealand
Unitec Institute of Technology



School/Department Level Agreements

Information Science
Asia
China
Department of Computer Science, City University of Hong Kong
School of Information Science and Engineering, Yunnan University
Indonesia
Faculty of Industrial Technology, Sepuluh Nopember Institute of Technology
Korea
Graduate School of Electronics Engineering, Kyungpook National University
Vietnam
Institute of Information Technology, Vietnam Academy of Science and Technology
Faculty of Electronics and Telecommunications, HCMC University Of Science, Vietnam National University
Department of Electronic and Telecommunication Engineering, University of Science and Technology - The University of Danang, Vietnam

Europe
Finland
Department of Information Processing Science, Faculty of Science, University of Oulu
Faculty of Medicine, University of Turku
France
Telecom SudParis
École Supérieure d'Ingénieurs en Électrotechnique et Électronique Paris
École nationale supérieure d'ingénieurs de Caen
Germany
Faculty of Engineering and Computer Science, University of ULM
Department of Informatics, Technical University of Munich
Department of Electrical and Computer Engineering, Technical University of Munich
Faculty of Mathematics and Natural Sciences, Heinrich Heine University Düsseldorf

South America
Brazil
Departments of the University of San Paulo

Biological Science
Asia
Bangladesh
School of Health and Life Sciences, North South University
China
College of Life Sciences, Nanjing Agricultural University
School of Life Sciences, Nanjing University

Singapore
Temasek Life Sciences Laboratory Limited
Vietnam
Institute of Biotechnology, Vietnam Academy of Science and Technology

North America
Canada
Faculty of Science, University of British Columbia
USA
Biotechnology Institute, University of Minnesota

Materials Science
Asia
China
School of Chemistry and Chemical Engineering, Nanjing University
India
Indian Institute of Science Education and Research, Thiruvananthapuram
Singapore
School of Materials Science and Engineering, Nanyang Technological University
Taiwan
Institute of Biophotonics, National Yang Ming Chiao Tung University
Vietnam
Institute of Materials Science, Vietnam Academy of Science and Technology

Europe
Austria
Institute of Solid State Physics, Graz University of Technology
Germany
Faculty of Engineering, RheinMain University of Applied Sciences
Hungary
Doctoral School of Physics, University of Debrecen
Netherlands
Faculty of Science, Leiden University
Faculty of Electrical Engineering, Mathematics and Computer Science, Delft University of Technology
Switzerland
Faculty of Science, University of Zurich

North America
USA
Macromolecular Science & Engineering program, University of Michigan

Double Degree Programs

With the rapid progression of globalization, researchers able to guide international collaborative research bringing together human resources and emerging technologies to tackle the issues facing humankind regardless of borders, are being called for. The double degree program is designed to systematically develop human resources with an emphasis on the ability to conduct international joint research and to enhance international collaborative skills through education and research collaboration with international partner institutions.

In the double degree program, students are enrolled at NAIST and one of our partner institutions, and upon completing the program, following research guidance from both institutions' faculty, receive degrees from both institutions. Currently, NAIST offers doctoral course double degree programs with 7 international partner institutions and a master's course double degree program with 1 international partner institution.

Partner institution	Country/region	Faculties, colleges, and areas	Research areas at NAIST
Macquarie University	Australia	① Department of Biological Science ② Department of Molecular Science ③ Department of Chiropractic Science ④ Department of Computing ⑤ Department of Earth and Planetary Sciences ⑥ School of Engineering ⑦ Department of Environmental Sciences ⑧ Department of Mathematics and Statistics ⑨ Department of Physics and Astronomy	All divisions
Université Paul Sabatier	France	Physics, Chemistry and Materials Science	Materials Science
Université Paris-Saclay	France	① Biology, biochemistry and biotechnology ② Communication systems ③ Computer science and informatics ④ Earth sustainability/environment ⑤ Economics, etc.	All divisions
Sorbonne Université	France	Information science	Information Science
Ulm University	Germany	Computer science and Engineering Science	Information Science
National Yang Ming Chiao Tung University	Taiwan	① College of Science ② College of Electrical and Computer Engineering ③ College of Engineering	All divisions
Chulalongkorn University	Thailand	Biochemistry and Molecular Biology, Faculty of Science	Biological Science
Kasetsart University (Master's course)	Thailand	Faculty of Engineering	Materials Science

Student Support

A supportive research environment for students

Rated top-class for research among Japanese national universities

In 2020, of all the respected national universities, NAIST was ranked extremely high for both Grant-in-aid for Scientific Research funding received and number of papers published (both of these are per individual faculty member), being ranked second in both areas. Also, in the MEXT Intermediate Evaluation of the 3rd Mid-term Target Period, NAIST was one of two institutions whose education and research were both evaluated highly as "having made significant progress." Furthermore, the average institutional research budget for each NAIST faculty member for the 2020 fiscal year was 6 million yen, far surpassing double the national average.

Personalized education and research advising for students

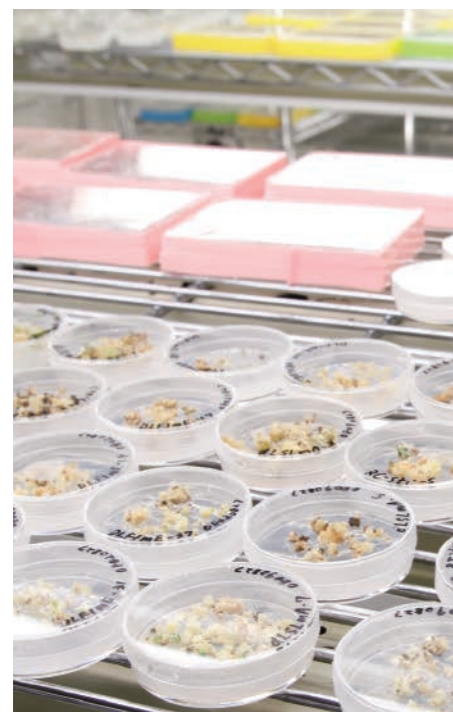
With a 6:1 student-to-faculty ratio (FY2020), half the 10:1 average ratio for Japanese national institutions, NAIST students are regularly able to take advantage of individual advising opportunities. In addition to the main supervising professor, students are also assigned at least one sub-supervising professor to allow for guidance from different fields and to facilitate a broad understanding of their research. Furthermore, NAIST's campus is physically compact and the educational structure is organized to encourage collaboration and developments in both education and research across traditional academic fields.

Examination, enrollment and tuition fees

Enrollment type	Examination	Enrollment	Tuition
Master's and Doctoral Program Students	JPY 30,000	JPY 282,000	JPY 267,900/semester (JPY 535,800/year)
Research Students	JPY 9,800	JPY 84,600	JPY 29,700/month
Special Research Students* (Short-term Exchange Students)	—	—	JPY 29,700/month

*Tuition may be waived for students from partner institutions.

(As of October 2021)



A wide variety of financial support options

Japanese Ministry of Education, Culture, Sports, Science & Technology (MEXT) Scholarship

MEXT offers competitive, full scholarships to excellent overseas students and researchers to study in Japan and chosen students receive comprehensive support (Tuition and other fee exemption, monthly stipend, travel expenses) so they may focus on their studies and research. There are two types of MEXT scholarships, embassy and university recommendation through International Priority Graduate Programs.

NAIST International Scholar Program

This program is offered to talented partner institution students to study at NAIST while being Research Assistants, gaining valuable, hands-on research experience. NAIST Scholars are exempted from tuition and other fee payment, and receive a research assistantship salary and partial transportation cost reimbursement.

Other government and private scholarships

Every year a select number of privately financed international students receive JASSO and other private scholarships exclusively for NAIST students. Additionally, multiple scholarships specifically for international students are offered by private companies and foundations.

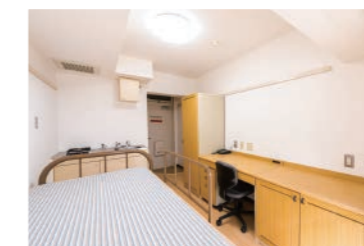
Teaching and research assistantships

In addition to the NAIST International Scholar Program, NAIST actively supports exceptional students with teaching and research assistantships, where they receive a salary for taking on different roles in the lab and classroom.

Affordable on-campus housing

For international students studying in Japan, housing is an expensive and time-consuming issue. All full-time international students are eligible for on-campus housing with free internet access. Housing fees range from JPY 10,000 – JPY 15,000 for single, couple or family housing, which are about one third or less of average Japanese housing costs. A new apartment-style dormitory where Japanese and international students live together to foster cultural understanding opened in April 2021.

Apartment-style dormitory ▶



◀ Single housing



International Student Affairs Section

The International Student Affairs Section is the first office that international students deal with when they begin their procedures for studying at NAIST. Starting with admissions assistance and visa procedures, the International Student Affairs Section manages international student registration, offers administrative support for international students concerning their status in Japan and handles Japanese government and other scholarships. The experienced staff also offers advice to students as they live and study at NAIST. Additionally, the section works with a citizen group to maintain a Japanese language program and arranges Japanese cultural excursions every year.

Center for International Students and Researchers (CISS)

CISS was started as part of NAIST's commitment to supporting its growing international community, which consists not only of students, but also students' families, international researchers and faculty, and their families as well. CISS cooperates with administration offices across the campus to offer support in areas both on and off campus, while also working with local government offices to assure the international community in and around NAIST are able to make the most of their time at NAIST and in Japan.

Campus Life

Studying at NAIST



Amelia Cheng Wei TAN

1st year master's student from Malaysia studying in the Applied Stress Microbiology Laboratory (Division of Biological Science)



On the weekends

I attend Japanese language classes Saturday mornings. I explore around Nara city, Osaka or Kyoto or sometimes just go to the nearby AEON mall or restaurants. I also meet up with lab mates for a game of Mario Party.

Life in the dormitory

I live in a wheelchair-friendly single room, which enables me to live independently here in NAIST. At the recycling club I managed to pick up appliances for free from graduating students, including a vacuum cleaner, fridge, microwave, rice cooker, fan, heater, etc.



Comments

NAIST is different from other universities because it is a postgraduate institution and greater emphasis is placed on research projects. With the dormitory on-campus, I save a lot of time and money without the commute. English is widely spoken in NAIST and the support staff has been great in helping me to quickly adapt to life in Japan.

My usual weekday

- 6:00 Daily exercise (jogging, etc.)
- 6:30 Family morning prayer
- 7:00 Preparing for the day & walking children to school
- 9:00 Start research activities
- 20:00 End my day in the lab
- 21:00 Relax, talk with the family, check children's school activities and get ready for the next day



On the weekends

On Saturday mornings, I study Japanese and my family visit the Ikoma International Chapel for Sunday service. We also go shopping for groceries for the next week and visit surrounding parks, etc. The family dormitory allows us enough space to live and have a few guests for birthday parties and other events



Olufemi ABRAHAM

1st year doctoral student from Nigeria studying in the Laboratory for Cyber Resilience (Division of Information Science)

My monthly budget

- <Expenses>
- Dormitory: JPY 15,000
 - Food, etc.: JPY 80,000
 - Utilities: JPY 25,000
 - Mobile phone/network: JPY 6,000
 - Others: JPY 30,000



Student activities and events



Kyoto online tour for international students before they come to Japan



An Ikoma City-guided hike up Mount Ikoma to the Buddhist Hozanji Temple



International students shopping at the student-run Recycling Market



Students 'brushing' up their writing skills at the New Year's calligraphy event

The Shijonawate High School research presentations



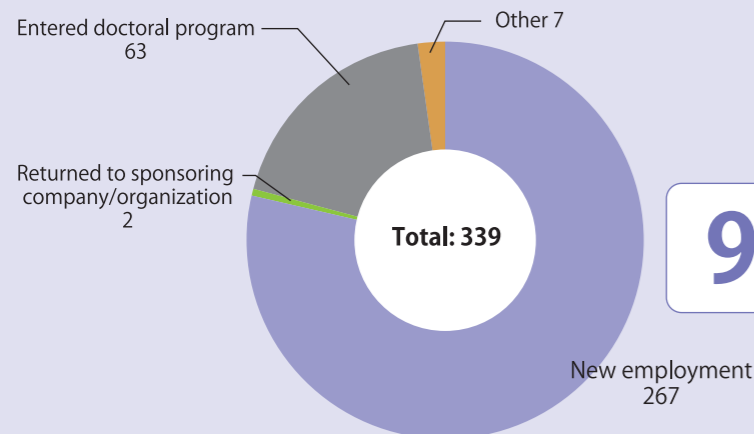
International students listening to high school students' research presentations



An international student introducing his research to the high school students

Careers after NAIST

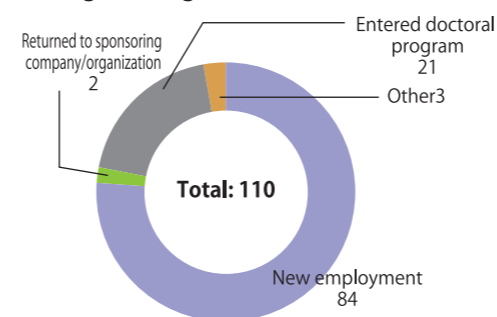
2020 Master's Course Graduates All Education Programs combined



99% of graduates looking for employment found positions

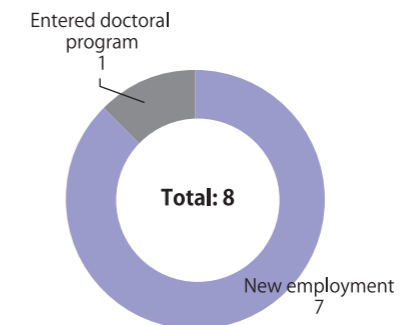
Individual Education Program Graduates

Program of Information Science and Engineering



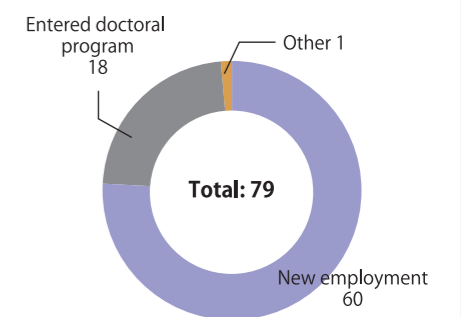
Graduates joined companies including: Rakuten Group, Inc., NTT Docomo, Hitachi, Ltd.

Program of Computational Biology



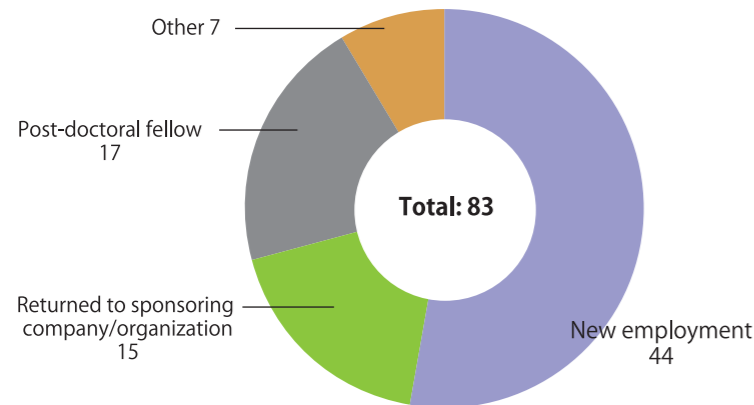
Graduates joined companies including: Dai Nippon Printing Co., Ltd., Hitachi, Ltd., Micron Memory Japan, K.K.

Program of Biological Science



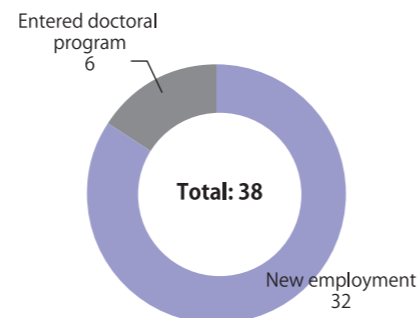
Graduates joined companies including: The Nishin Oillio Group, Ltd., ROHTO Pharmaceutical Co., Ltd.

2020 Doctoral Course Graduates Graduate School of Science and Technology



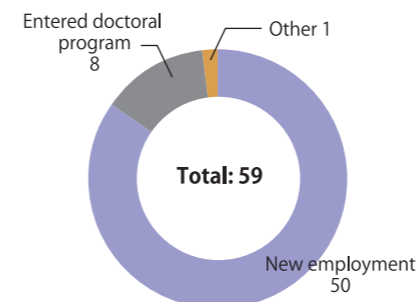
Graduates joined companies including: Facebook, Inc., Kao Corp., Sony Semiconductor Solutions Corp.

Program of Bionanotechnology



Graduates joined companies including: Eisai Co., Ltd., Nitta Corp., Harima Chemicals Group, Inc.

Program of Materials Science and Engineering



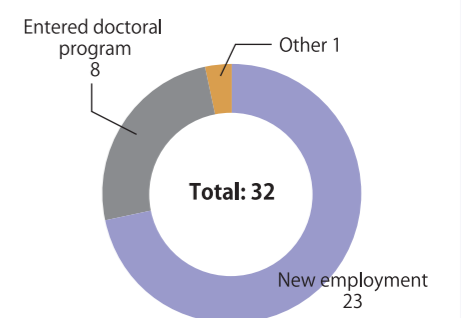
Graduates joined companies including: The Kansai Electric Power Company, Inc., Kyocera Corp., Sysmex Corp.

Program of Intelligent Cyber-Physical Systems



Graduates joined companies including: Kyocera Corp., Suzuki Motor Corp., DISCO Inc.

Program of Data Science



Graduates joined companies including: Yahoo Japan Corp., Amazon Japan G.K., Asahi Kasei Corp.

Hear from our Graduates



Nattakarn WUTHIBENJAPHONCHAI, Ph.D.
Prototype Development Engineer
Sony Semiconductor Solutions Corporation
Graduated in 2020

Life in Japan

When I first arrived in Japan as a graduate student, the only Japanese words I knew were greetings. Although it made me nervous at first, living in Japan is much easier than I expected. Being able to have a daily conversation is more than enough to comfortably settle down and enjoy day-to-day life. Japan is also one of the safest countries in the world. I am never worried even if I have to go out alone. The culture that is built on empathy and cutting-edge technology made me come to love Japan. I came to Japan with the intention of finishing my degree and returning to my home country, but I ended up falling in love with Japanese culture and decided to stay and work here.

My Experience at NAIST

The student support program at NAIST provides opportunities for students to develop their skills and encourages them to do so. During my time at NAIST, I had the opportunity to study English in the United States and work as an exchange researcher in Switzerland. I was able to complete research that was accepted by top-ranking conferences in my field and published in a well-known journal thanks to professors' advice and advanced laboratory facilities. Furthermore, the diversity of nationalities among students creates a pleasant environment for both international and Japanese students. I had a terrific time throughout my study, and hanging out with my Japanese and international friends also significantly improved my Japanese and English. Studying at NAIST provided me not just an education but also an opportunity for personal development.



Chengyan ZHAO, Ph.D.
Assistant Professor
Ritsumeikan University
Graduated in 2021

Life in Japan

Being fascinated by Japanese culture since childhood, coming and studying in Japan is always my dream. Besides my academic work, I got many opportunities to travel around Nara and Kansai cities, where the history spanning thousands of years is really amazing to me. Moreover, my daily life which was supported by the clean environment, safe food, and warmhearted staff and friends really touched me. By the way, Japanese "sushi" and "ramen" are my favorite.

My Experience at NAIST

From my academic and private experiences, in my mind, NAIST is no doubt the best place for research in Japan. NAIST gathers a group of energetic professors only conducting graduated courses, in other words, students have access to more research resources than normal universities. Besides that, NAIST supports students to visit abroad to exchange ideas with the world's scientists. In addition to this academic support, the low-cost dorm located on campus allowed me to concentrate on my research without worrying about commuting or rent. Furthermore, if you want to start your career in Japan, make sure to visit the NAIST Career Office, where you can obtain support and guidance throughout the job-hunting process. Here, I want to say that I could not have gotten my current position in Ritsumeikan University without the generous help of NAIST Career Office. In a word, NAIST is the perfect place to enjoy both your research and your life.

Division for Career Development (DCD)

Established in 2013, DCD provides a wide variety of career support to NAIST students who seek non-academic careers in Japan. In particular, a University Educational Administrator (UEA) is employed specifically to support international students as they maneuver the unique and difficult to understand Japanese job hunting customs and procedures. DCD offers individual counseling to students who seek specific advice and support for their job hunting and also arranges and holds various programming to fully prepare international students as they look towards their next career steps including:

- ▶ Career guidance sessions to educate students on how to start and proceed with job hunting
- ▶ Networking events for international students to meet with Japanese companies and learn about the industries in Japan
- ▶ One-day company visit programs and longer-term internships for students to learn about and experience Japanese company work environments
- ▶ Special doctoral student "Job Festa" career and networking events for those aspiring to work in industry in Japan

Areas of Research and Education

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Information Science

Computer Science Laboratories		
Computing Architecture Prof. Yasuhiko Nakashima Affiliate Prof. Mutsumi Kimura Assoc. Prof. Renyuan Zhang Affiliate Assoc. Prof. Tran Thi Hong Assist. Prof. Yirong Kan	Our laboratory performs research and development of next-generation ultra-compact, ultra-low power and high-performance computing platforms for Society 5.0. In particular, devices, hardware, architecture, and software for image processing, scientific computing, edge AI computing platforms, and blockchain accelerators, by fusing limited Von Neumann and various promising non-Von Neumann computers. Post-silicon devices, CGRAs, systolic ring arrays, near memory computing, neuromorphic systems, stochastic computing, high efficiency block chains, high efficiency image processing, system architecture simulators, reconfigurable architectures, approximate computing, hardware design, digital/analog circuits, FPGA, VLSI, AI accelerators	
Dependable System Prof. Michiko Inoue Adjunct Prof. Fukuhito Ooshita Adjunct Assoc. Prof. Michihiro Shintani Assist. Prof. Ryota Eguchi	Today's information society is supported by various levels of advanced technology such as applications, systems, computers and VLSIs. The Dependable System Laboratory is pursuing research on safe and secure systems including distributed systems with hundreds of computers and VLSIs with billions of transistors. "Dependability" is a concept from the user's point of view, when systems can be used reliably and securely. Fault-tolerant distributed systems, wait-free distributed algorithms, self-stabilizing algorithms, mobile agent and robot algorithms, population protocols, distributed algorithms for shared memory systems, VLSI design for testability, machine-learning-based test optimization, dependability of emerging memory system, hardware Trojan detection	
Ubiquitous Computing Systems Prof. Keiichi Yasumoto Associate Prof. Hirohiko Suwa Assist. Prof. Yuki Matsuda	Ubiquitous computing systems provide users with more useful services at lower costs than ever before by processing, aggregating, and analyzing real-world data sensed with various sensors and by recognizing the physical situations of the real space. Our laboratory performs research and education for realizing novel technologies based on ubiquitous computing systems. Smart homes, smart life, smart cities, context recognition, participatory/social/mobile sensing, behavior change, Internet of Things, sensor networks, data mining, cyber-physical systems, edge computing	
Software Engineering Prof. Kenichi Matsumoto Assoc. Prof. Takashi Ishio Assist. Prof. Raula Gaikovina Kula Assist. Prof. Kazumasa Shimari Assist. Prof. Bodin Chinthanet	Our laboratory performs research and education on the fundamentals and innovative technological trends of software engineering, including how contemporary software development teams make and maintain software, especially when using open source software. Topics include code analysis at the project level for automated tool support, empirical mining software artifacts to test assumptions, and human communication at both project and larger ecosystem levels. We strive to help build, use and maintain software to benefit society. Program analysis, programming education, open source software, software ecosystems, empirical studies, artificial intelligence, mining software repositories, software libraries, software security	
Software Design and Analysis Prof. Hajimu Iida Assoc. Prof. Kohei Ichikawa Assist. Prof. Toishiki Hirao Assist. Prof. Yutaro Kashiwa Visiting Assoc. Prof. Toshinori Takai Visiting Assoc. Prof. Yasushi Tanaka Visiting Assist. Prof. Keichi Takahashi	We conduct research on the methods and technologies which support the design/development of software and cloud computing systems, focusing on the analysis/improvement of the software development process. Software technology is increasingly present in our daily lives, including various software embedded machinery and electronic devices for homes, mobile telephones and social infrastructures represented by cloud computing systems. Software development processes, repository mining, software design & verification, cloud infrastructure design, software defined networking (SDN), high-performance computing	
Cyber Resilience Prof. Youki Kadobayashi Assoc. Prof. Yuza Taenaka Assist. Prof. Md. Delwar Hossain Affiliate Prof. Hiroyuki Inoue Affiliate Assoc. Prof. Daisuke Miyamoto	Our laboratory pursues resilience of ICT-based society together with lab members and colleagues around the world. Our research ranges from theoretical to practical, and spans across broad technical fields, from binary code, methodology, to even law. The pursuit of resilience (toughness) is an ongoing challenge and central to our motivation. Cybersecurity, Internet technology, IoT/CPS, privacy, edge computing, applied machine learning, software defined technology, operating systems, distributed systems, Industrial control systems (ICS)	
Information Security Engineering Prof. Yuichi Hayashi Assist. Prof. Daisuke Fujimoto Assist. Prof. Youngwoo Kim	Our laboratory conducts research on methods to ensure hardware safety, which is the bedrock of system information security. We also research to ensure system-level security, including the upper layers. In addition to students from information science fields, we also accept students who majored in electrical and mechanical engineering that wish to study the information field. Hardware security, cryptographic hardware, embedded systems, side-channel analysis, electromagnetic information security, hardware Trojans, cyber-physical system security, random number generators, electromagnetic compatibility, signal/power integrity	
Internet Architecture and Systems Prof. Kazutoshi Fujikawa Assoc. Prof. Ismail Arai Assist. Prof. Masatoshi Kakiuchi Assist. Prof. Arata Endo Visiting Assoc. Prof. Shigeru Kashiwara Visiting Assoc. Prof. Akira Yutani	Our research goal is to realize the next-generation ICT infrastructure technologies and services beyond current systems such as the Internet, Wi-Fi networks, and cloud systems, which can be used securely and conveniently. In order to achieve this, our research methods are not only computer simulations but also using actual systems and equipment operated in Information Initiative Center (IIC). Pervasive computing, ubiquitous computing, Internet of Things, disaster relief computing/networking, data centers, network operation, cyber security, high-performance computing, software-defined networking	
Media Informatics Laboratories		
Natural Language Processing Laboratory Prof. Taro Watanabe Assoc. Prof. Hidetaka Kamigaito Research Assoc. Prof. Hiroyuki Shindo Assist. Prof. Hiroki Ouchi	We perform research on natural language processing, computational linguistics and machine learning. Our primary focuses are on the fundamental techniques for language analysis, language generation and information extraction, and on the end applications, such as machine translation, summarization, question answering and grammatical error correction. Natural language processing, computational linguistics, machine learning, syntactic analysis, semantic analysis, information extraction, language generation, language grounding, machine translation	

Information Science

Media Informatics Laboratories		
Augmented Human Communication	The AHC Laboratory pursues research to solve problems related to human communication based on speech and language, paralinguistic, and non-verbal information. By applying various artificial intelligence technologies including deep learning, our lab is pursuing tasks that were previously not able to be solved.	
Prof. Satoshi Nakamura Assoc. Prof. Katsuhito Sudoh Assist. Prof. Hiroki Tanaka Assist. Prof. Seitaro Shinagawa	Speech-to-speech translation, natural language processing, multi-lingual speech processing, dialog systems, brain analysis, information distillation	
Social Computing	We are an interdisciplinary laboratory specializing in the usage of social media mining and natural language processing (NLP) technologies towards a wide spectrum social outcomes, ranging from medical informatics and mental health applications, to fake news detection on Twitter and AI-powered art.	
Prof. Eiji Aramaki Assoc. Prof. Shoko Wakamiya Assist. Prof. Shuntaro Yada Assist. Prof. Kongmeng Liew	Social computing, web engineering, artificial intelligence, machine learning, natural language processing, medical informatics, computational social science	
Network Systems	The scope of our laboratory includes wireless technologies such as beyond 5G mobile communication systems, wireless power transfer systems, and radio sensors. We educate our students from theoretical and practical perspectives of wireless technologies to achieve our research goals.	
Prof. Minoru Okada Assoc. Prof. Takeshi Higashino Assist. Prof. Duong Quong Thang Assist. Prof. Na Chen	Wireless communications, wireless power transfer, digital broadcasting, satellite communications, wireless sensors, multiple input multiple output, radio over fiber, dynamic charging, Intelligent reflection surfaces, electromagnetic theory, modulation and signal detection	
Interactive Media Design	Our vision is to introduce Augmented Reality, conversational robots, and comfortable self-driving cars into the everyday lives of everyone on this planet. We aim to develop truly practical methods and systems using these technologies in cooperation with experts in various fields, focusing on medicine, sports, and industry.	
Prof. Hirokazu Kato Assoc. Prof. Masayuki Kanbara Assist. Prof. Yuichiro Fujimoto Assist. Prof. Taishi Sawabe	Augmented reality, virtual reality, human computer interaction, human robot interaction, computer vision, computer graphics, training systems, support systems, user interfaces, self-driving cars	
Optical Media Interface	The research topics in our laboratory include computer vision to understand scenes according to visual information obtained by a camera, and computer graphics to generate rich visual information for humans. We are aiming to realize new interfaces that enable humans and machines to interact through optical media based on cutting-edge research.	
Prof. Yasuhiro Mukaigawa Assoc. Prof. Takuya Funatomi Assist. Prof. Yuki Fujimura Assist. Prof. Kazuya Kitano Affiliate Assoc. Prof. Kenichiro Tanaka	Computer vision, computer graphics, computational photography, development of sensing systems, deep learning, optical measurement, unconventional cameras, image analysis, 3D shape reconstruction, digital fabrication	
Cybernetics and Reality Engineering	We conduct research to create the "tools of the future" to realize an inclusive society where all people can maximize their abilities and help each other. In particular, by manipulating various sensations such as vision, we aim to live more conveniently, more comfortably, or more securely by offering "personalized reality" which empathizes with each individual.	
Prof. Kiyoshi Kiyokawa Assoc. Prof. Hideaki Uchiyama Assist. Prof. Naoya Isoyama Assist. Prof. Monica Perusquía-Hernández	Virtual and augmented reality, human augmentation, wearable computing, affective computing, cognitive science, psychology, computer vision, human and environmental sensing, artificial intelligence, display hardware	
Applied Informatics Laboratories		
Human Robotics	We conduct research studies on the intellectualization of robots, understanding human perception-action loops based on information science, and human machine system/human robot collaboration by combining them. We are aiming to define the quality of operational feeling and motion comfort in intelligent mechanical systems that interact with humans. Research questions include "What determines easiness of walking with an artificial leg?"	
Prof. Takahiro Wada Assist. Prof. Yuki Sato Assist. Prof. Yasuaki Orita Assist. Prof. Hailong Liu Visiting Assoc. Prof. Gustavo Garcia Visiting Assist. Prof. Sung-Gwi Cho	Robotics, human machine systems, human modelling, cooperative control, biological cybernetics, shared control, motion perception, motion sickness	
Robot Learning	Our laboratory performs research and educates students in robot learning (machine learning for robot intelligence), an interdisciplinary field of various fields such as machine learning, artificial intelligence, robotics, control engineering, signal processing, optimization, mechatronics.	
Prof. Takamitsu Matsubara Visiting Prof. Kenji Sugimoto Assist. Prof. Kenta Hanada Assist. Prof. Yoshihisa Tsurumine Assist. Prof. Hikaru Sasaki Assist. Prof. Takuya Kiyokawa Visiting Assist. Prof. Taisuke Kobayashi	Reinforcement learning, imitation learning, deep learning, active perception, smart manufacturing, human-assistive technology (exoskeleton robots, EMG interface), industrial applications, vehicle autopiloting	
Large-Scale Systems Management	The Large-Scale Systems Management Laboratory research aims to develop mathematical modeling and simulation techniques for optimal design, control and architecture of large-scale systems such as computer/communication networks, with which the resulting systems achieve high performance, low vulnerability and high energy efficiency.	
Prof. Shoji Kasahara Assoc. Prof. Masahiro Sasabe Assist. Prof. Takanori Hara Assist. Prof. Yu Nakahata	Queueing theory, game theory, machine learning, algorithms, graph theory, mathematical analytics, network optimization, automatic evacuation systems for disasters, blockchain, incentive mechanism design, data structure	

Information Science

Applied Informatics Laboratories		
Mathematical Informatics	Our laboratory studies mathematical models in various fields such as computer science, mathematical biology, and engineering. Computer science includes machine learning and statistical science. Mathematical biology includes neuroscience, medical science, cognitive science, psychophysics and bioinformatics. Engineering includes signal processing, computer vision and robotics. Mathematical models everywhere!	
Prof. Kazushi Ikeda Assoc. Prof. Takatomi Kubo Assist. Prof. Makoto Fukushima Assist. Prof. Chie Hieida Assist. Prof. Renzo Roel Perez Tan	Mathematical models, machine learning, mathematical biology, neuroscience, cognitive science, signal processing	
Imaging-based Computational Biomedicine	We conduct research and education on "computational biomedicine," which aims to develop mathematical models of the structure and function of the human body and other living organisms, and artificial intelligence for medical diagnosis and treatment, by integrating deep learning and biological simulation with analysis of biomedical images.	
Prof. Yoshinobu Sato Assoc. Prof. Yoshito Otake	Medical image analysis, virtual human body, computational anatomy, machine learning, deep learning, artificial intelligence, medical big data, biological simulation, computer assisted surgery, computer assisted diagnosis	
Computational Systems Biology	We are incorporating state-of-the-art data modeling/manipulating techniques such as deep learning techniques to better our understanding of the system biology of plants. In collaboration with medical hospitals and other academic institutions, we are developing various biomedical technologies based on information technology and deep learning techniques.	
Prof. Shigehiko Kanaya Affiliate Prof. Hidehiro Iida Assoc. Prof. Md. Altaf-Ul-Amin Assoc. Prof. Naoaki Ono Affiliate Assoc. Prof. Tetsuo Sato Assist. Prof. Ming Huang Assist. Prof. Md. BozLul Karim	System biology, metabolic pathways, drug discovery, digital biomarkers, medical image processing, deep learning, computer aided diagnosis, proactive healthcare	
Computational Behavioral Neuroscience	To understand humans, we build behavioral models based on the information processing mechanism of the brain, investigate the principles of human behavior through verification using experimental and data-driven approaches, and conduct educational research on its application to society.	
Assoc. Prof. Saori Tanaka	Decision-making, computational models, reinforcement learning, neuroimaging, cognitive science, neuroeconomics, computational psychiatry, databases	
Collaborative Laboratories		
Communication	Our laboratory performs research on machine learning and data mining methods that extract valuable knowledge from various types of data. In particular, we are interested in developing methods that can learn from incomplete data, such as a small amount of data, data with many missing values, aggregated data, and noisy data.	
Prof. Tomoharu Iwata Assoc. Prof. Yusuke Tanaka	Machine learning, data mining, deep learning, meta-learning, social network analysis, learning from aggregated data, spatiotemporal analysis	
Computational Neuroscience	We aim to understand the human brain and to achieve new machine intelligence (artificial intelligence) based on brain information processing functions. We conduct research and educate students on computational neuroscience, cutting-edge machine intelligence and neurotechnology at ATR, an internationally recognized computational neuroscience center.	
Prof. Motoaki Kawanabe	Computational neuroscience, machine intelligence, robot learning, brain machine interfaces, cognitive functions, neurofeedback, computational psychiatry, statistical modeling, multi-modal brain imaging, brain decoding	
Humanware Engineering	Our laboratory performs research on Humanware, which essentially extends the abilities of humans and supports better human life by the combination of sensor data and knowledge processing. We explore new research areas such as smart houses and robotics combined with human, social, and physical sciences.	
Prof. Yoshikuni Sato Assoc. Prof. Masashi Okada	Artificial intelligence, biomedical engineering, machine learning	
Symbiotic Systems	Our challenge is research and development of "symbiotic" systems that work in real applications to create social value. Currently we focus on the advanced image sensing and recognition technologies including Fingerprint of Things and high-frame rate vision, which break through the limitation of existing AI technologies for real applications. We work on not only the algorithms but also additional methods and engineering for sensing, data collection and system usability design.	
Prof. Rui Ishiyama Assoc. Prof. Hiroyoshi Miyano	Symbiotic systems, image recognition, signal processing, Fingerprint of Things, high-speed imaging, real-time vision, pattern recognition, traceability, visual inspection, machine vision, robot vision	
Optical and Vision Sensing	Our laboratory performs research and educates students from both theoretical and practical perspectives, ranging from fundamental research to engineering. Our research results are applicable especially in the field of factory automation, healthcare, and social systems.	
Prof. Masaki Suwa	Physics-based vision, vision-based 3D measurement, sensor calibration, object detection/recognition, machine vision algorithms	


Information Science

Collaborative Laboratories		
Molecular Bioinformatics Prof. Kazuhiko Fukui Prof. Kentaro Tomii	We are developing bioinformatics methods and tools to explore the functions and mechanisms of biomolecules such as proteins. We aim to discover knowledge in the field of lifescience using information engineering techniques and to provide analysis methods that compensate for information deficiencies in experimental data.	
	Computational molecular biology, bioinformatics, omics, structural bioinformatics, genomics, data science, databases	
Digital Human Prof. Mitsunori Tada Prof. Yukiyasu Domae Prof. Akihiko Murai	Our laboratory researches both humans and robots for realizing inclusive systems where they can collaborate and co-evolve. Our research includes theoretical studies on human behavior and robot control, and empirical studies on practical social systems such as manufacturing factories and small stores where humans and robots co-exist.	
	Digital humans, robots, digital twins, motion analysis, motion synthesis, computer vision, pattern recognition, material handling, human-robot collaboration, human-robot co-evolution	
Formal Verification Prof. Reynald Affeldt Assoc. Prof. Yusuke Kawamoto	Formal verification methods are mathematically rigorous techniques for checking the correct behavior of computer systems. We study the formal verification of software systems dealing with uncertainties, e.g., to guarantee the safety of cyber-physical systems and to rigorously verify and explain statistical programs and artificial intelligence.	
	Programming languages, formal verification, logic, type theory, proof assistants, Coq, algebra, analysis, probability, statistics	
Network Orchestration Prof. Kazumasa Kobayashi Assoc. Prof. Eiji Kawai	The Network Orchestration Laboratory is a collaborative laboratory with the National Institute of Information and Communications Technology (NICT). In particular, we are developing the JGN network testbed, a nation-wide experimental network infrastructure founded by NICT. JGN also provides high-speed international connectivity to China, Singapore, and Thailand, forming part of a global R&E network infrastructure. Students find great opportunities to conduct research not only utilizing JGN facilities, but also applying their products to JGN.	
	Network operations and management, network security, network measurement, network virtualization, network failure analysis, self-configuration/healing/optimization/protection network	
High Reliability Software System Verification Prof. Masafumi Katahira Prof. Naoki Ishihama	Our Laboratory is focused on research into software verification methodologies to achieve high reliability and safety in software that must function properly under extreme environmental conditions. The research outcome will be expected to apply to practical use for systems that require high reliability not only in space systems but also in social core infrastructures.	
	Highly reliable software systems, safety systems, verification methodology, safety assurance methodologies, reliability	
Data-driven Knowledge Processing Prof. Kentaro Torisawa Assoc. Prof. Ryu Iida	We are conducting research and development on natural language processing technologies that use big data, aiming to develop natural language processing systems that can contribute to society. We are now developing WEKDA, a spoken dialog system that provides a wide variety of written knowledge from the Web, and MICSUS, a multimodal interactive care support system that chats with elderly people to check their health and lifestyle, as well as more basic technologies that support these systems.	
	Big data, natural language processing, deep learning, question answering systems, spoken dialog systems	
Multilingual Knowledge Computing Prof. Nobuhiro Yugami Assoc. Prof. Yuchang Cheng	Our laboratory belongs to Fujitsu Limited located in Kawasaki City. We are researching and developing various multilingual knowledge computing technologies to further artificial intelligence (AI). The AI that Fujitsu envisions is a "collaborative, human centric AI", and we are aiming for the realization of AI that will support greater business growth and efficiency for our customers.	
	Artificial Intelligence (AI), explainable AI, knowledge graphs, natural language processing, natural language understanding, knowledge computing, knowledge processing, knowledge acquisition, multilingual knowledge	
Intelligent Robot Dialogue Prof. Koichiro Yoshino	We research dialogue functions and intelligent systems for communication robots, roughly divided into three categories: understanding, control, and generation. To realize dialogue robots working in the real world, multimodal situation understanding (grounding) using language, speech, and images is necessary. The generative system of the robot utilizes multimodal expressions such as text, speech, images, and robot movements. We also study dialogue control mechanisms; reasoning, decision making, and inference on the knowledge base.	
	Dialogue systems, dialogue robots, natural language processing, language understanding, multimodal processing, knowledge acquisition, inference, dialogue management, language generation, reinforcement learning	
Multimodal Environment Recognition Prof. Yasutomo Kawanishi	Our laboratory performs research and educates students by developing environment recognition systems and surveillance systems for assistive robots and human activity understanding in daily life by collaborating with the Multimodal Data Recognition Research Team in the RIKEN Guardian Robot Project to realize the future where humans and robots coexist.	
	Robot vision, computer vision, pattern recognition, surveillance, environment recognition, object recognition, person recognition, action recognition, activity understanding, neural networks	






Biological Science

Plant Biology Laboratories		
Plant Developmental Signaling Prof. Keiji Nakajima Assist. Prof. Shunsuke Miyashima Assist. Prof. Tatsuaki Goh	We study molecular and genetic mechanisms of plant morphogenesis and growth control in response to environmental and genetic factors using the Arabidopsis root and the liverwort sexual organs as model systems. We develop unique microscopic systems and image processing techniques to analyze dynamic changes in cell and organ morphologies.	
	Plant development, plant-microbe interaction, roots, germ cells, evolution, gene expression control, Arabidopsis, liverwort, live imaging, computer vision	
Plant Metabolic Regulation Prof. Taku Demura Assist. Prof. Tadashi Kunieda Assist. Prof. Miyuki Nakata	Our laboratory engages in research and education pertaining to the biotechnology needed to resolve the issues facing human beings in the 21st century, such as food, the environment, and energy. Especially, we are exploring the molecular mechanisms for woody cell differentiation and mechanical optimization using novel biotechnological tools.	
	Woody biomass, xylem, multi-omics, transcription factors, cell walls, atomic force microscopes (AFM), the 3D/4D structural analysis, micro X-ray CT, confocal microscopy, endomembrane trafficking	
Plant Growth Regulation Prof. Masaaki Umeda Assist. Prof. Shiori Aki Assist. Prof. Naoki Takahashi	Our laboratory aims to understand the mechanisms of DNA polyploidization, stress response and genome maintenance that support sustained plant growth under changing environments. Our studies will contribute to the development of technologies that increase plant biomass and food production, thereby solving global environmental issues.	
	Plant organ growth, cell cycle, DNA polyploidization, biomass, environmental stress, DNA damage response, genome maintenance, DNA replication, chromatin, phytohormone, signal transduction	
Plant Stem Cell Regulation and Floral Patterning Prof. Toshiro Ito Assoc. Prof. Nobutoshi Yamaguchi Assist. Prof. Makoto Shirakawa Assist. Prof. Yuko Wada	We are interested in a holistic view of gene regulation in plant reproduction, which leads to developmental robustness and coordination. We explore signaling and epigenetic control in stem cell maintenance, environmental response and fertilization. Our students work at the frontiers of plant molecular genetics, developing their research, presentation and writing skills.	
	Flower development, transcription factors, epigenetics, histone modification, hormone signaling, transcriptomes, epigenomes, molecular breeding, chemical biology, synthetic biology	
Plant Physiology Prof. Motomu Endo Assist. Prof. Akane Kubota-Namima Assist. Prof. Nozomu Takahashi	Focusing on the circadian clock and photoperiodism, our laboratory conducts theoretical and experimental research and education on how, when and where plants perceive time and seasons, and how they use this information to control their responses.	
	Circadian clock, photoperiodism, flowering, inter-organ/tissue/cellular communication, circadian rhythm, chronobiology, Arabidopsis, plants, plant physiology	
Plant Immunity Prof. Yusuke Saijo Assist. Prof. Chika Tateda Assist. Prof. TBA	Our laboratory performs research and educates students in the areas of plant-microbe interactions, with a focus on immune receptor signaling, signal integration between biotic and abiotic stress responses, plant-infecting microbes and plant-associated microbiomes. We wish to elucidate the underlying molecular principles in model plants and crops, and apply the obtained knowledge to promoting sustainable agriculture.	
	Plant immunity, plant-microbe interactions, pattern recognition receptors, damage sensing, systemic signaling, microbiomes, symbiosis, plant pathology, abiotic stress, environments	
Plant Symbiosis Prof. Satoko Yoshida Assist. Prof. Songkui Cui Assist. Prof. Mina Ohtsu Assist. Prof. Shoko Inaba	Our laboratory focuses on research of parasitic plants, especially Orobanchaceae parasitic plants that cause severe agricultural damage in Africa. We use molecular biology, genetics, microscopy, and bioinformatic techniques to elucidate the mechanisms of plant parasitism. We also work on the other plant-organism relationships, including plant-nematode interaction, herbivory by the golden apple snail on rice, plant and arbuscular mycorrhiza interaction.	
	Parasitic plants, Striga, haustorium formation, molecular genetics, microscopy, next generation sequencers, genome analysis, evolution, chemical biology	
Plant Secondary Metabolism Assoc. Prof. Takayuki Tohge Assist. Prof. Shinichiro Komaki	Our laboratory focuses on the study of plant secondary (specialized) metabolic diversity and metabolic polymorphisms by translational analysis of genomics, transcriptomics and mass spectrometry-based metabolomics, as well as functional annotation of key genes corresponding to the production of environmentally stress-tolerant active phytochemicals.	
	Plant metabolism, metabolic diversity, metabolic polymorphism, environmental adaptation, integrative omics approaches, comparative omics, cross-species comparison, genomic synteny, metabolic engineering, model plant to crop	
Plant Regeneration and Morphogenesis Assoc. Prof. Momoko Ikeuchi	Why can plants readily regenerate their bodies upon injury? We pursue the secrets of plants' regenerative capacity using molecular genetics, live imaging and single cell transcriptome analyses. Uncovering the secrets of plants' regenerative capacity will potentially benefit human life by improving various aspects of agricultural biotechnology including grafting and tissue culture.	
	Regeneration, cellular pluripotency, developmental plasticity, tissue cultures, grafting, imaging, transcriptomes, epigenetics, Arabidopsis thaliana	


Biological Science

Biological Science Laboratories		
Molecular Signal Transduction Prof. Hiroshi Itoh Assist. Prof. Tetsuo Kobayashi Assist. Prof. Manami Toriyama	<p>Our laboratory focuses on the molecular mechanisms and functions of cellular signaling mediated through G proteins and primary cilia. Faculty and graduate students in our laboratory are dedicated to cutting-edge scientific research towards a better understanding of how the human body functions and the alleviation of human disease.</p> <p>Signal transducing GTP-binding proteins, G protein-coupled receptors, adhesion GPCR, primary cilia, astrocyte, anti-cancer drugs, monoclonal antibodies, knockout mice</p>	
Functional Genomics and Medicine Assoc. Prof. Yasumasa Ishida Assist. Prof. Chio Oka Assist. Prof. Eishou Matsuda	<p>All the faculty members in our laboratory, Ishida, Oka, and Matsuda, were educated and trained in medical schools. Therefore, as we focus on human diseases, we investigate the molecular mechanisms involved in their development and novel therapeutic strategies to treat them.</p> <p>PD-1, self-nonsel self discrimination, cancer immunotherapy, HtrA1, age-related macular degeneration, CIBZ, methylated DNA-binding proteins</p>	
Tumor Cell Biology Prof. Jun-ya Kato	<p>Focusing on molecular mechanisms controlling mammalian cell proliferation, differentiation, and death, we conduct research on the regulation of the G1 phase of the cell cycle and carcinogenesis, and on hematopoietic stem and blood cell differentiation, proliferation, and tumorigenesis. Experimental systems used include (1) in vitro cell cultures of mouse and human cell lines, (2) in vitro induction of differentiation using ES cells, and (3) in vivo mouse models using knockout and transgenic mice.</p> <p>Cell cycle, G1 progression, tumorigenesis, hematopoiesis, leukemogenesis, cancer research, cancer metabolism, ROS regulation, lipid metabolism</p>	
Molecular Immunobiology Prof. Taro Kawai Assist. Prof. Takumi Kawasaki Assist. Prof. Daisuke Ori	<p>The innate immune system is the first line of host defense that detects invading pathogens. However, aberrant activation of innate immune responses is closely associated with exacerbation of inflammatory diseases. Our aim is to uncover mechanisms that control innate immune responses using tools of molecular and cell biology, bioinformatics and genetically modified mice.</p> <p>Innate immunity, inflammation, vaccines, adjuvant, autoimmunity, macrophages, dendritic cells, cell death, cancer, gene targeting,</p>	
Molecular Medicine and Cell Biology Prof. Shiro Suetsugu Assist. Prof. Tamako Nishimura Assist. Prof. Takehiko Inaba	<p>Each type of cells has specific shape that is determined by the plasma membrane. Our lab will focus on the mechanisms connecting the membrane to the cytoskeleton for varieties of cellular functions including migration, proliferation, and various events associated with morphological changes. We will integrate cell biology, molecular biology, biochemistry, biophysics, and machine learning.</p> <p>Cell biology, molecular biology, biochemistry, biophysics, and machine learning.</p>	
RNA Molecular Medicine Prof. Katsutomu Okamura Assist. Prof. Ren Shimamoto Assist. Prof. Masami Shimori	<p>Our laboratory studies biogenesis and functions of regulatory small non-coding RNAs and tries to understand how they contribute to human health. We conduct bioinformatics analysis to extract important information from large amounts of sequencing data and perform biochemical experiments using cultured cells and model organisms to test hypotheses.</p> <p>MicroRNA, regulation of miRNA processing, transcriptomes, siRNA, Argonaute, RNA-dependent RNA polymerase</p>	
Stem Cell Technologies Prof. Akira Kurisaki Assist. Prof. Hitomi Takada Assist. Prof. Atsushi Intoh	<p>Our goal is to understand the mechanisms of tissue development from the viewpoint of stem cell differentiation. We are also interested in the tissue regeneration process because the tissue stem cells are activated and initiate differentiation upon damage.</p> <p>Stem cells, differentiation, development, gastrointestinal tissue, lungs, adipose tissue, transcription factors, gene expression, growth factors, signaling pathway analysis</p>	
Developmental Biomedical Science Assoc. Prof. Noriaki Sasai Assist. Prof. Takuma Shinozuka	<p>Our laboratory is interested in developmental biology, especially focusing on the mechanisms by which the central nervous system is formed. In addition, we investigate how the established nervous system is maintained, and seek for new therapeutic methods for neurodegenerative diseases.</p> <p>Developmental biology, molecular biology, cell biology, central nervous systems, neurodegenerative disease, chicks, mice, embryonic stem cells, sonic hedgehog</p>	
Organ Developmental Engineering Assoc. Prof. Ayako Isotani Assist. Prof. Shunsuke Yuri	<p>We are researching the formation of organs using interspecies chimeric animals in which mouse and rat cells coexist in one body. Through this research, we investigate the essential factors for organ development and the correct function of organs.</p> <p>Chimeric animals, organ formation, developmental engineering, embryo manipulation, genome editing, animal experiments, stem cells, regenerative medicine, reproductive biology, mammalian development</p>	

Biological Science

Systems Biology Laboratories		
Microbial Molecular Genetics Adjunct Prof. Hiroshi Takagi Assoc. Prof. Masahiro Akiyama Assist. Prof. Kazuo Kobayashi	<p>At our research group, we have been studying (1) how genomic instability is caused when an antimicrobial reagent induces replication inhibition and cell death, and (2) how microbial biofilms that hamper drug treatments of microbial infection are formed and disassembled. We also put strong emphasis on the international education of young students who are highly interested in these research themes.</p> <p>Genomic instability, mutations, DNA replication, DNA repair, biofilm formation, molecular biology, microbiology, cell biology</p>	
Applied Stress Microbiology Prof. Hiroshi Takagi Assoc. Prof. Yukio Kimata Assoc. Prof. Daisuke Watanabe Assist. Prof. Ryo Nasuno Assist. Prof. Akira Nishimura Assist. Prof. Yuichi Morozumi Assist. Prof. Yukiko Nakase	<p>Focusing on "Applied Molecular Microbiology", we perform basic studies in microbial science, particularly cellular response, environmental stress adaptation, and its practical applications in new biotechnology. To fully understand microbial cell functions under stress conditions, we analyze and improve microorganism mechanisms from molecular, metabolic and cellular aspects. Our findings may be applied to molecular breeding of useful microbes, production of valuable biomaterials and development of promising technologies for environmental issues.</p> <p>Applied molecular microbiology, yeast, stress response and tolerance, post-translational modification, amino acid metabolism, nitric oxide, ubiquitin systems, signal transduction, redox regulation, protein quality control, industrial yeast breeding</p>	
Environmental Microbiology Assoc. Prof. Shosuke Yoshida	<p>We study the unique metabolic capabilities of microorganisms at the cellular and molecular levels. Furthermore, we aim to develop technologies that contribute to solving environmental problems and the realization of a sustainable society by utilizing microbial functions. A recent focus is poly(ethylene terephthalate) biodegradation.</p> <p>Microbiology, metabolic engineering, genomics, transcriptomics, enzymology, imaging, genetic engineering, microbial breeding, microbial evolution, microbial screening</p>	
Structural Life Science Prof. Tomoya Tsukazaki Assist. Prof. Ryoji Miyazaki Assist. Prof. Ken Kitano	<p>In cells, various proteins are involved in a variety of fundamental biological phenomena. To unveil such mechanisms coupled with dynamic interactions and structural changes of biomolecules, including proteins, we conduct basic research through structural biological analyses in combination with other newly developed methods.</p> <p>Protein science, structural life science, structural biology, protein structure, protein interaction, protein complexes, protein transport, molecular dynamics, molecular mechanisms, crystallography.</p>	
Gene Regulation Research Prof. Yasumasa Bessho Assoc. Prof. Takaaki Matsui Assist. Prof. Akiyama Ryotaro Assist. Prof. Norihiro Kitagawa Assist. Prof. Yasuko Inaba	<p>We are clarifying the principles of animal development and growth using mice and zebrafish as model systems. We bring together various technologies, including genetics, molecular biology, bioimaging technology, pharmacology, bioinformatics, mathematical modeling, and nanotechnology to tackle the mystery of life.</p> <p>Developmental biology, mice, zebrafish, live imaging, gene editing, body plans, transcription factors, biological clocks, collective behavior, regeneration</p>	
Systems Neurobiology and Medicine Prof. Naoyuki Inagaki Assoc. Prof. Kentarou Baba Assoc. Prof. Takunori Minegishi	<p>The development of neuronal networks in the brain relies on multiple steps, including neuronal migration, polarity formation, axon guidance, synapse formation and synaptic plasticity. Our laboratory investigates the molecular mechanisms for these processes. We are also analyzing the mechanisms of cell migration, memory formation and cancer metastasis.</p> <p>Neuronal network formation, cell migration, axon guidance, synaptic plasticity, actin waves, cancer metastasis, biochemistry, molecular biology, cell biology, mechanobiology</p>	
Bioengineering Prof. Ko Kato Assist. Prof. Shotaro Yamasaki Assist. Prof. Tomomi Wakabayashi Assist. Prof. Takehide Kato	<p>In our laboratory, we are performing research and education on the development of basic technology for efficiently producing useful materials such as biopharmaceuticals in plants and the elucidation of the mechanisms controlling the phenotype of plants in order to contribute to society through biotechnology.</p> <p>Regulation of gene expression, production of useful materials in plants, bioinformatics, next-generation sequencers, gene sequence optimization, machine learning, analysis tool development</p>	
Data-driven Biology Prof. Yuichi Sakumura Assoc. Prof. Toshiya Kokaji Assoc. Prof. Tatsuya Yamada	<p>Our laboratory analyzes experimental biological data to build quantitative mathematical models and provide feedback for experimental design. We work to pre-process the data using domain knowledge and then use machine learning and mathematical models to extract novel knowledge.</p> <p>Cell migration, morphogenesis, tissue formation, trans-omics, disease diagnosis by exhaled breath, machine learning, quantitative modeling, mechanobiology, image analysis software development</p>	
Collaborative Laboratories		
Molecular Microbiology and Genetics Visiting Prof. Masayuki Inui	<p>Basic research and education activities focus on the development of a biorefinery, a facility that integrates biomass conversion and environmentfriendly production of fuels and other useful chemicals. To achieve this, integrated omics analysis and metabolic conversion techniques are employed to develop new microbial functions. (Affiliation: Research Institute of Innovative Technology for the Earth (RITE))</p> <p>Microbiology, molecular biology, genome engineering, culture engineering, metabolomic analysis, metabolic engineering, systems biology, high-efficiency bioprocesses</p>	

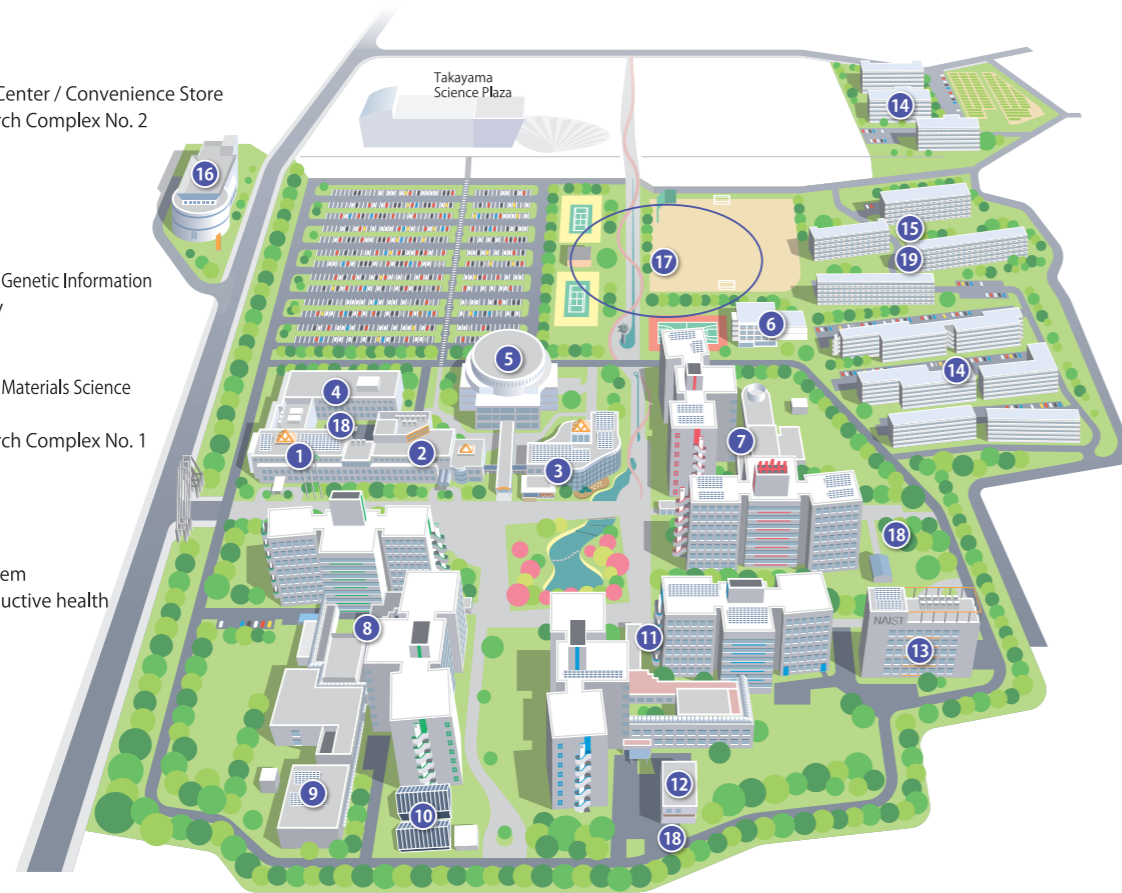
Core Laboratories		
Quantum Materials Science	The Quantum Materials Science Laboratory studies molecules, crystals, nanoparticles, and ultrathin films of both organic and inorganic materials, utilizes various optics-based experimental approaches to clarify material properties from the viewpoint of quantum physics, and aims to create new functional materials that will be used in optical information-communication or environment-conscious devices in the future.	
Prof. Hisao Yanagi Assoc. Prof. Hiroyuki Katsuki Assist. Prof. Atsushi Yamashita Assist. Prof. Hitoshi Mizuno	Quantum effects, coherent control, quantum dots, time-resolved spectroscopy, femtosecond lasers, Raman spectroscopy, molecular crystals, nanoparticles, organic lasers, organic electronics	
Bio-Process Engineering	Our laboratory promotes developmental research on high-precision and fast manipulation methodologies for biological materials, in which state-of-the-art laser technology is combined with microscope technologies. We have the world's top activities on cell manipulation and processing by femtosecond laser and have attracted attention as a pioneer of laser applications for biotechnology.	
Prof. Yoichiro Hosokawa Assoc. Prof. Yalikhun Yaxiaer Assist. Prof. Naomi Tanga	Femtosecond lasers, atomic force microscopy, micro-fluidic devices, cell manipulation, cell processing, laser induced shockwaves, bio-applications, cell sorters, fluorescence imaging, photoporation	
Solid-state Information Physics	Our aim is to clarify the physical properties of atomically-controlled bulks, surfaces, interfaces, and complex systems, creating novel functionalities, from atomic and electronic viewpoints. Our research targets are active sites such as dopants, three-dimensional structure surfaces, surface electronic states such as subbands, luminescence, magnetism, and electronic molecule-reactions.	
Prof. Tomohiro Matsushita Assoc. Prof. Ken Hattori Assist. Prof. Sakura N. Takeda Assist. Prof. Yusuke Hashimoto Assist. Prof. Takanoju Jujo Assist. Prof. Yuta Yamamoto	Synchrotron radiation, angle resolved photoelectron spectroscopy, photoelectron holography, atomic resolved holography, electron diffraction, reciprocal space mapping, scanning tunneling microscopy, quadrupole mass spectrometry, cathode luminescence, density functional theory	
Photonic Device Science	In our laboratory, we are conducting cross-disciplinary research, from the design of original optoelectronic devices based on microelectronics technology to their applications. Specifically, we are developing novel photonic devices and systems such as retinal prosthesis, implantable functional brain imaging devices, near-infrared color imaging, and visualization of high-frequency electric fields.	
Prof. Jun Ohta Assoc. Prof. Kiyotaka Sasagawa Assoc. Prof. Hiroyuki Tashiro Assist. Prof. Makito Haruta Assist. Prof. Hironari Takehara	LSI design, implantable devices, retinal prosthesis, brain functional imaging, bioimaging, near-infrared imaging, lensless imaging, high frequency electric field imaging	
Information Device Science	In our laboratory, we are developing semiconductor materials and studying semiconductor processes and devices. We are also developing various semiconductor devices such as LSIs, TFTs, and solar cells with the aim of creating AI and energy that enrich our lives. Additionally, we are also working on higher performance using data science and materials informatics technologies.	
Prof. Yukihiro Uraoka Assoc. Prof. Mutsunori Uenuma Assist. Prof. Juan Paolo Bermundo Assist. Prof. Itaru Raifuku Assist. Prof. Michael Jallorina	AI (Artificial Intelligence), LSIs, thin film transistors, solar cell, thermal transducers, semiconductor devices, data science, material informatics	
Applied Quantum Physics	Our laboratory studies scintillators and storage phosphors for solid state ionizing radiation detectors, and the coverage is synthesis of materials (single crystal, transparent ceramic, glass, organic-inorganic perovskite, and powder), photophysics and radiation detector properties.	
Prof. Takayuki Yanagida Assoc. Prof. Noriaki Kawaguchi Assoc. Prof. Daisuke Nakauchi Assist. Prof. Takumi Kato	Scintillators, scintillation detectors, dosimeters, thermally stimulated luminescence (TSL), optically stimulated luminescence (OSL), radiophotoluminescence (RPL), radiation detectors, phosphor, photoluminescence	
Organic Electronics	Our laboratory pursues the development of novel electronic devices using organic materials based on applied physics and chemistry. Our research is unique in that we develop original research tools to characterize organic thin films and low-dimensional materials, and realize entirely new fabrication methods and structures of devices which are distinctive from conventional ones.	
Prof. Masakazu Nakamura Assoc. Prof. Hiroaki Bente Assist. Prof. Manish Pandey Assist. Prof. Yongyoon Cho	Organic electronics, energy harvesting, thermoelectric generators, solar cells, thin-film transistors, molecular orientation, Seebeck effect, thermal management, scanning probe microscopy, CNT, proteins, polymer semiconductors, hybrid perovskite	
Core Laboratories (Cooperative)		
Mesoscopic Materials Science	Our laboratory performs research and educates on exotic devices utilizing new physical phenomena in the mesoscopic region that take advantage of thin-film technology and computational science. Specifically, we are conducting research on novel semiconductor devices and materials for energy conversion and carbon neutrality including photovoltaic cells and high-performance transistors.	
Adjunct Prof. Yasuyuki Naito Adjunct Prof. Hiroyuki Tanaka Adjunct Assoc. Prof. Hiromasa Tamaki	Mesoscopic, nano-technology, thin-film, energy conversion materials, transition metal oxide, perovskite, photovoltaic cells, power semiconductors, computational science, material informatics	
Sensory Materials and Devices	We are advancing our research on sensor and device-related fundamental technologies such as microfabrication, biomaterials, image sensor systems to be applied in the medical diagnosis field, as well as working on the integration of these technologies to realize highly functional ultra micro chemical analysis systems (μ TAS: Micro Total Analysis Systems).	
Visiting Prof. Keishi Kitamura Visiting Prof. Masaki Kanai Visiting Assoc. Prof. Tetsuo Furumiya	Microchemical analysis systems, microreactors and micropumps, biomaterial for tissue engineering, positron emission tomography, xray imaging systems, optical Imaging systems	
Core Laboratories		
Photonic and Reactive Molecular Science	Our group investigates light/matter interactions to tackle modern societal challenges through chemistry, such as promoting social progress and protecting the environment. We aim to assist students developing creative, critical minds to shape tomorrow's society. Our focus encompasses innovative molecule development for remote-controlled photo-induced stereo/enantio-selective catalysis, digital conversion of photonic information as well as light-energy with molecular photo-response. For this, we conduct advanced scientific research on synthetic organic chemistry, molecular photochemistry, fluorescence and phosphorescent materials and chiral light emitting molecules.	
Prof. Tsuyoshi Kawai Assoc. Prof. Tsumoru Matsumoto Assist. Prof. Mihoko Yamada Assist. Prof. Marine Louis	Photochromes, photo-triggered reactions, chirality, stereo/enantio-selective catalyses, circularly polarized luminescence, transition metal catalyst, CO-transfer reaction, future displays, light emitting devices, lanthanides, fluorine chemistry	

Core Laboratories		
Functional Organic Chemistry	We focus on the development of functional organic materials including organic semiconductors for photovoltaic cells and thin-film transistors, highly fluorescent dyes, near-infrared (NIR) dyes, and carbon nanomaterials. We are also interested in the control of self-assembled structures to achieve their synergistic performances.	
Prof. Hiroko Yamada Assoc. Prof. Naoki Aratani Assist. Prof. Hironobu Hayashi Assist. Prof. Kyohei Matsuo Assist. Prof. Mitsuaki Yamauchi	Functional organic materials, polycyclic aromatic hydrocarbons, carbon nanomaterials, precursor approaches, self assembly, main group elements, photochemistry, organic electronics, on-surface synthesis, NIR absorption	
Biomimetic and Technomimetic Molecular Science	We are designing and synthesizing molecules which can act as machines at the nanoscale, including motors, gears and nanocars. Thanks to the injection of energy (light or electron) these molecular machines can produce a controllable motion. We are also developing biologically-active molecules by mimicking natural molecular machines.	
Prof. Gwénaél Rapenne Assoc. Prof. Kazuma Yasuhara Assist. Prof. Toshiro Nishino Assist. Prof. Kenichiro Omoto	Molecular machines, organic chemistry, coordination chemistry, gears, nanocars, bioactive molecules, polymer chemistry, artificial membranes, interface chemistry, amphiphiles	
Core Laboratories (Cooperative)		
Functional Polymer Science	Our laboratory performs research and educates students through drug discovery and formulation design for medical drugs. Especially, we are now exploring the innovative DDS platform to penetrate target ocular tissues efficiently by using synthesized new material or functional polymers, etc.	
Visiting Prof. Takahiro Honda Visiting Prof. Komei Okabe Visiting Assoc. Prof. Kazuhiro Kudo	DDS, drug delivery, formulation design, medical drugs, chemical synthesis, functional polymers, cell penetrating peptides	
Ecomaterial Science (with Research Institute of Innovative Technology for the Earth)	The Ecomaterial Science Laboratory, staffed by researchers of the Research Institute of Innovative Technology for the Earth (RITE), provides research and education on fundamental technologies to solve global warming issues. We endeavor to develop advanced materials for CO2 capture and H2 energy production, such as zeolite, amine-based materials.	
Adjunct Prof. Katsunori Yogo Adjunct Prof. Kazuya Goto Adjunct Assoc. Prof. Tomohiro Kinoshita	Global warming, CO2 capture, CCUS, zeolites, amine-based materials, mesoporous materials, polymeric materials, metal organic frameworks (MOF), inorganic membranes	
Advanced Functional Materials	We focus on the nanostructure control of materials to realize next generation products. An important challenge is the development of environmental-conscious material processing technology for all solid-state batteries and biodegradable polymers. Our laboratory is located in the Osaka Research Institute of Industrial Science and Technology, Morinomiya Center in Osaka city and conducts intimate collaboration with private industry engineers, leading to rapid application of the developed materials into practical devices.	
Adjunct Prof. Masanari Takahashi Adjunct Assoc. Prof. Joji Kadota Adjunct Assoc. Prof. Mari Yamamoto	All solid state batteries, lithium ion secondary batteries, inorganic polymers, porous materials, nano-fibers, biodegradable polymers, polylactic acid, accurate polymerization	
Core Laboratories (Cooperative)		
Functional Supramolecular Chemistry	We are performing new interdisciplinary research in chemistry and biology. Based on the chemical knowledge of the functions and structures of biomolecules at molecular level, our laboratory focuses on the elucidation of protein mechanisms and design/application of bio-supramolecules using various analytical methods, protein engineering techniques, and organic syntheses.	
Prof. Shun Hirota Assoc. Prof. Takashi Matsuo Assist. Prof. Naoya Kobayashi Assist. Prof. Tsuyoshi Mashima	Supramolecules, proteins, metalloproteins, function control, enzymatic reactions, chemical modification, genetic mutation, analytical methods, organic synthesis, computer-based protein design	
Complex Molecular Systems	Our laboratory focuses on the autonomous assembly-disassembly phenomena exhibited by complex molecular systems of proteins. Based on protein science and biophysics, we conduct research and education on the understanding of protein-molecule complex systems as potential targets for drug discovery and the development of next-generation protein-molecule complex materials.	
Prof. Hironari Kamikubo Assoc. Prof. Sachiko Toma-Fukai Assist. Prof. Yoichi Yamazaki Assist. Prof. Kento Yonezawa	Protein science, biophysics, structural biology, protein design engineering, x-ray solution scattering, x-ray & neutron crystallography, spectroscopy, recombinant DNA technology, structural proteins, protein transport systems, signal transduction systems	
Nanomaterials and Polymer Chemistry	Based on the concepts of "molecular technology" and "precise polymerization", we prepare various polymer structures and create new polymer materials by controlling molecular design, polymer synthesis and polymer-polymer interactions. The target of their application is biocompatible materials, energy related materials, and environmentally friendly materials.	
Prof. Hiroharu Ajiro Assoc. Prof. Tsuyoshi Ando Assist. Prof. Nalinthip Chanthaset Assist. Prof. Hiroaki Yoshida	Biomaterial, degradable polymers, environmentally friendly material, energy related material, polymer synthesis, molecular design, nano structure, stimuli responsive property, gels, films	
Materials Informatics	In our laboratory, we study materials informatics. Our goal is to develop informatics analysis methods and their applications to improve material properties. In material science, experiments and theories have developed by interacting with each other. We are particularly interested in the technology that integrates and utilizes them.	
Prof. Mikiya Fujii Assoc. Prof. Tomoaki Takayama Assist. Prof. Yosuke Harashima	Materials informatics, machine learning, conditional generative adversarial networks, data assimilation, computational quantum chemistry, first-principles calculation, photocatalysts	
Core Laboratories (Collaborative)		
Data Driven Chemistry	Chemoinformatics is a research area where chemical problems are tackled using tools coming from informatics. Our primary mission is to develop useful data analysis methodologies for experimental chemists/biologists by incorporating theory and data. The methods developed by our group have a wide range of applications from drug discovery to process control in chemical plants.	
Prof. Yukihiro Uraoka Prof. Kimito Funatsu Assoc. Prof. Tomoyuki Miyao Assist. Prof. Jasial Swarit	Chemoinformatics, data-driven chemistry, virtual screening, soft sensors, chemical plant operation, drug discovery, in-silico modeling, machine learning, data analysis, process informatics	

Campus Map & Facilities

NAIST's campus is a compact area constructed to facilitate campus-wide research, education and interaction, where students, faculty and staff connect with each other daily. In addition to the on-campus housing for students, faculty, and staff, NAIST's secluded campus was created to assist students in focusing on their academic goals by offering support in a variety of areas. The campus's location close to Kyoto and Osaka allows for easy domestic and international travel.

- ① Administration Bureau
- ② Library
- ③ University Union / Health Care Center / Convenience Store
- ④ Interdisciplinary Frontier Research Complex No. 2
- ⑤ Millennium Hall
- ⑥ Guesthouse Sentan
- ⑦ Information Science Complex / Information Initiative Center
- ⑧ Biological Science Complex / Research and Education Center for Genetic Information
- ⑨ Animal Experimentation Facility
- ⑩ Botanical Greenhouses
- ⑪ Materials Science Complex / Research and Education Center for Materials Science
- ⑫ Bio Nano Process Laboratory
- ⑬ Interdisciplinary Frontier Research Complex No. 1
- ⑭ Student Dormitories
- ⑮ Staff Residences
- ⑯ Administration Bureau Annex
- ⑰ Sports facilities
- ⑱ NAIST One-way Carsharing System
- ⑲ Rooms for childcare and reproductive health



NAIST Library ②

As Japan's first full-scale digital library, the NAIST Library is available online 24 hours-a-day throughout the year and the physical library is open 24 hours-a-day as well offering reference materials, study space, etc.



Health Care Center ③

The Health Care Center staff includes a doctor, nurses and counselors, and they offer medical examinations and assistance, health guidance and mental health counseling for students, faculty and staff.



Cafeteria ③

The NAIST cafeteria offers a variety of inexpensive meal options for both lunch and dinner. Dishes range from traditional Japanese foods to western dishes such as spaghetti and curry.



Convenience store ③

The on-campus convenience store is open seven days a week and, in addition to foods and beverages, stocks daily amenities and offers utility and other payment services.



Millennium Hall ⑤

The Millennium Hall, the largest hall on campus, is open for events such as entrance and graduation ceremonies, international conferences, community events, and industry-related events.



Guesthouse Sentan ⑥

The guesthouse offers reasonable short-term on-campus accommodations for visiting students, researchers, etc. to facilitate collaboration with both international and domestic partners.



Sports facilities ⑰

NAIST maintains tennis courts, a basketball/volleyball court, a field for soccer/baseball and a room for table tennis, and the administrative offices offer rental equipment to students, faculty and staff.



NAIST One-way Carsharing System ⑱

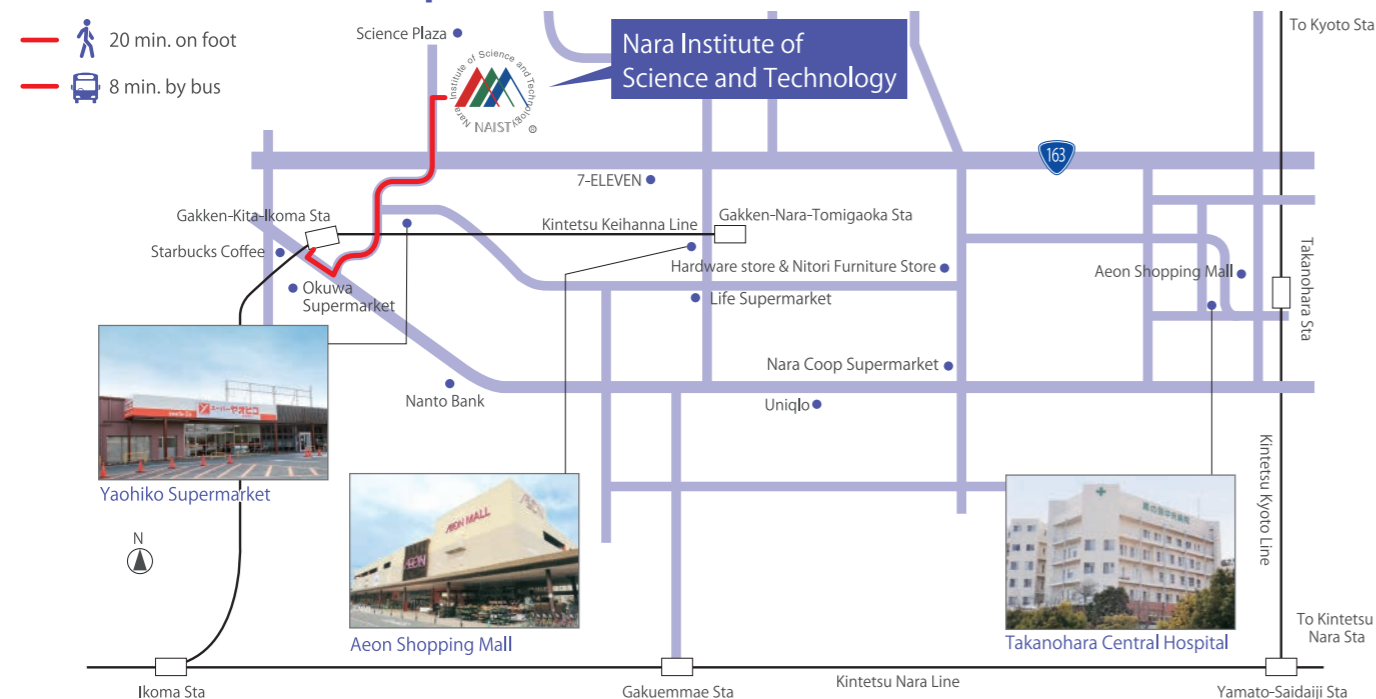
As part of research being performed at NAIST, a carshare system featuring electric vehicles with 3 charging stations on campus which utilizes cryptocurrency has been established to assist the mobility of faculty, staff and students.



Rooms for childcare and reproductive health ⑲

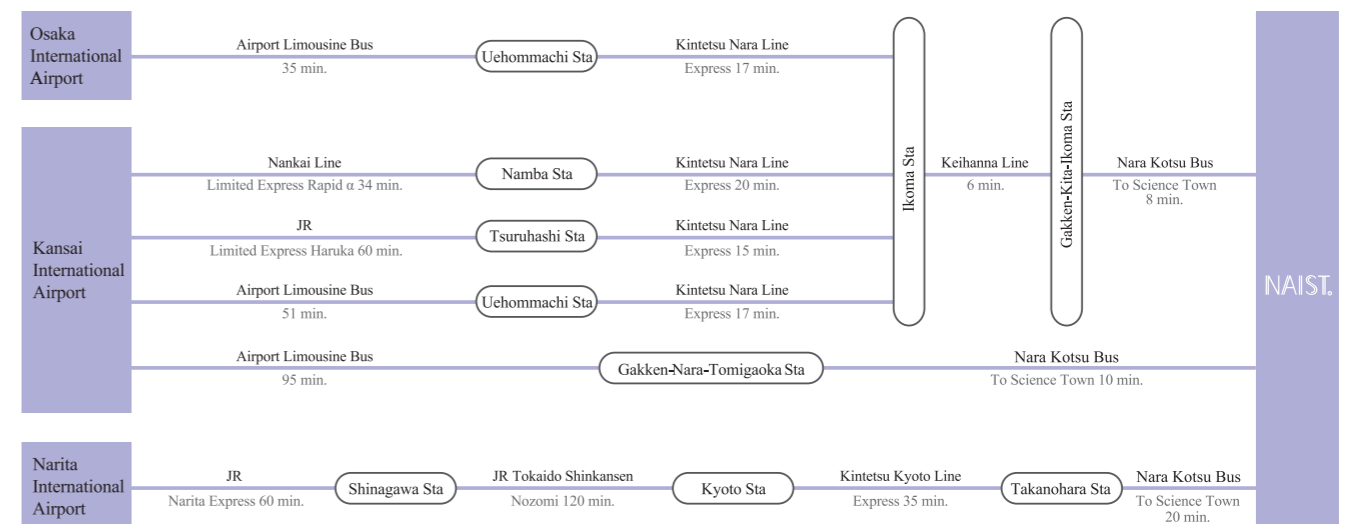
These rooms have been established along with various child and family care support programs as part of NAIST's efforts to support female faculty and employees' work-life balance.

Around Campus



Reaching NAIST from Domestic Airports

NAIST is only 1.5 hours away from the Osaka International Airport and the Kansai International Airport





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NAIST Website



Division of
Information Science



Division of
Biological Science



Division of
Materials Science



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